**3GPP TSG-SA WG6 Meeting #43 S6-211318r4**

**e-meeting, 24th May – 2th June 2021 (Revision of S6-211067)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.434** | **CR** | **0056** | **rev** | **2** | **Current version:** | **17.1.0** |  |
|  | | | | | | | | |
| *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:*** | SEAL Location Deviation Service | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung, InterDigital, Deutsche Telekom | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UASAPP | | | | |  | ***Date:*** | | | 2021-04-08 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | As per conclusions in TR 23.755, for the KI#12 (Track UAV location deviation), it is concluded that the solution #18 (Monitor UAV location deviation) as the way forward for the normative phase and SEAL should be enhanced with this new solution. This CR proposes Location Deviation Monitoring as new SEAL LMS service. | | | | | | | | |
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| ***Summary of change:*** | | Monitoring Location Deviation procedure is defined as new SEAL LMS service.  Revision 2: Changes the place of step2 to step4 in the monitoring location deviation procedure. The SEAL LMS could respond to VAL server after successful subscription and authorization check. | | | | | | | | |
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| ***Consequences if not approved:*** | | Monitoring UAV location as concluded in UASAPP work, will be unspecified. | | | | | | | | |
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| ***Clauses affected:*** | | 9.3.x (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

### 9.3.x Monitoring Location Deviation

#### 9.3.x.1 General

The VAL server requests the Location Management Server to monitor the location of the VAL UE in relation to an area of interest. The LMS fetches the VAL UE’s location information periodically from 3GPP core network as specified in 3GPP TS 23.502 [11] and also, using the Location Information procedures specified in clause 9.3.7 and clause 9.3.10. With the periodic location information of the UE from 3GPP core network and SEAL procedures, the LMS server evaluates the current location of the VAL UE in relation to the area of interest configured by the VAL server. If subscribed, the VAL server is notified by the LMS server when the VAL UE relationship (e.g. inside or outside) to the area of interest changes along with current location information of the VAL UE.

#### 9.3.x.2 Monitoring Location Deviation procedure

Figure 9.3.X.2-1 describes the procedure for monitoring the VAL UE’s location in a given area of interest.

Pre-condition:

- The LMS server authorized to consume the 3GPP core network service (Monitoring events as specified in 3GPP TS 23.502 [11]).



Figure 9.3.x.2-1: Monitoring VAL UE’s location at a given location

1. The VAL server sends Monitor Location Subscription Request to LMS server including VAL UE Identifier, predetermined area of interest information, notification interval and notification URI where the VAL server intends to receive the notifications from LMS server regarding VAL UE’s presence in a given area.

- "Area of interest" is the location information, which the VAL server wishes to monitor the VAL UE’s location adherence. This parameter can include an area of interest information and other relevant parameters.

- "Notify\_Interval" represents the periodic interval in which the LMS server needs to notify VAL UE’s location information to the VAL server. When the VAL UE moves away from the " Area of interest", then the LMS server ignores the "Notify\_Interval" and sends the location notification to the VAL server immediately.

2.

2. LMS processes the Area of interest information in the request, and then subscribes to UE location monitoring as specified in 3GPP TS 23.502 [11] with appropriate parameters mapping. Based on the subscription, the LMS receives the VAL UE location information periodically from the 3GPP core network.

Editor’s note: How LMS subscribes to UE location monitoring based on given area of interestaccording to TS23.502 is FFS

3. LMS shall use the Location information procedures as specified in clause 9.3.7 and clause 9.3.10, to periodically obtain the VAL UE location information. Based on the geographic information from the VAL server, the LMS server may determine to additionally include the positioning methods in SEAL LMS procedures to obtain location information.

4. after successful subscription according to steps 2 and 3 of interest

5a and 5b. LMS server processes the location information received from SEAL Location Information procedures and the core network, and validates the information. If the location information is matching, then the LMS shall check if the VAL UE’s current location is within the area of interest received in step 1. The UAE server will continue with step 6, step 7 and step 8 as applicable.

6. If the location information received from Location management client and the core network do not match, then the LMS server shall consider the VAL UE as outside from its specified area of interest and shall notify ("Notify Mismatch Location" message) the VAL server of the same, including VAL UE ID and the location information from LMS and the core network in the notification message.

7. If the VAL UE’s current location is from Location management client and the core network matches, and not in the area of interest received from VAL server in Monitor Location Subscription Request message, then the LMS considers the VAL UE as outside from its specified area of interest and shall notify the VAL server that the VAL UE’s current location is outside of area of interest and VAL UE ID in "Notify Absence" message.

8. When the VAL UE’s current location is in area of interest, then the LMS shall notify ("Notify Presence" message) the VAL server periodically, according to the "Notify\_Interval" value in "Monitor Location Subscription Request" message, indicating the VAL server that the VAL UE is within the area of interest, along with VAL UE’s current location information.

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