**3GPP TSG-SA3 Meeting #107-e *S3-220984***

**e-meeting, 16 - 20 May 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **33.256** | **CR** | **0014** | **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 | **x** | Radio Access Network |  | Core Network | **x** |

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| ***Title:***  | Clarification on ‘high reliability’ location information |
|  |  |
| ***Source to WG:*** | Qualcomm Incorporated |
| ***Source to TSG:*** | S3 |
|  |  |
| ***Work item code:*** | ID\_UAS |  | ***Date:*** | 2022-05-03 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***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 canbe 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:*** | Clause 5.3.2 uses the term ‘high reliability’ when referring to location information. This term is not clear to stage 3 groups and has prompted an LS with a question. The security issue here is that the network can provide location information on the UE that has been calculated by the network, in order to help prevent the UE lying about its location. |
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| ***Summary of change:*** | Clarify the ‘high reliability’ term as discussed above.  |
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| ***Consequences if not approved:*** | Specification is not clear for stage 3 groups. |
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| ***Clauses affected:*** | 5.3.2 |
|  |  |
|  | **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:*** |  |

**\*\*\*\* START OF CHANGES \*\*\*\***

5.3.2 Location information veracity and location tracking authorization in 5GS

USS may receive the location information which is reported by UAV via the application layer. The USS may decide to check and verify the location information in order to prevent spoofed and forged location information. The location result from 5GS helps to verify the location information reported from UAV side. 5GS provides network-based location information by utilizing the Location Services (LCS) supported by AMF or GMLC as specified in TS 23.273 [4] and 23.502 [5], and the detailed procedures of location information veracity and location tracking authorization are described below.

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**Figure 5.3.2-1: Location information veracity and location tracking authorization in 5GS**

Step 1-3 shows the procedure for the USS to obtain a network-based location for UAV(s).

1. The USS sends the location request to UAS NF/NEF to request the UAV location or presence from network. The location request includes the GPSI of the UAV to request the location information or presence about an individual UE, or a geographic area when trying to find the information of all UAVs in an area. The LCS request also indicates the 5GS to obtain location information with high reliability, which means location should be calculated by the network.

If the USS/TPAE does not specify target 3GPP UAV ID and request UAS NF for a list of the UAVs in the geographic area and served by the PLMN, clauses 5.3.1.3 and 5.3.4 in TS 23.256 [3] apply.

2. The UAS NF/NEF first verifies the request in step 1 is authorized. When the USS sends a GPSI, this is done by checking whether the identifier of the USS sending the request matches the previously associated mapping between the GPSI and the USS identifier. When the USS request UAS NF for a list of the UAVs in the geographic area, this is done by checking the USS is authorized to receive the CAA level ID of all UAVs in a geographic area indicated by the USS. The UAS NF/NEF gets the relevant UAV(s) location information or presence from AMF or GMLC by the current location services supported by AMF or GMLC if passes the above authorization check. On the condition of the location services provided by AMF, the UE presence status is provided by reusing the Area of Interest mechanism. On the condition of the location services provided by GMLC, the GMLC indicates LMF via AMF to select Network Assisted Positioning method which relies on the location measurement from NG-RAN nodes, if receiving high reliability requirement in step 1.

NOTE 1: The USS may be authorized by UAS NF/NEF by means not specified in this release of the present document.

3. The UAS NF/NEF provides the UAV(s) location information or presence to the USS. When the USS request UAS NF for a list of the UAVs in the geographic area, if the USS performed the UUAA of the UAV, or the UAS NF is authorized to receive such information, then the 3GPP UAV ID of such UAVs is also included. USS may make decisions to control the UAV based on the result output received from UAS NF/NEF.

NOTE 2: Use of LCS privacy feature (e.g. user consent) is applicable to UAVs as for normal UEs.

Editor's Note: How the UAS NF authorizes the USS before providing UAV details is FFS.

Editor's Note: It is FFS how TPAE involve in this procedures.

**\*\*\*\* END OF CHANGES \*\*\*\***