**3GPP TSG-CT WG1 Meeting #132-eC1-21xxxx**

**E-meeting, 11-15 October 2021 Revison of C1-215802**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.501** | **CR** |  | **rev** | **1** | **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:***  | Update the general part for Authentication and authorization of UAV |
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| ***Source to WG:*** | China Mobile |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | ID\_UAS |  | ***Date:*** | 2021-09-29 |
|  |  |  |  |  |
| ***Category:*** | **C** |  | ***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:*** | The new version of TS 23.526 defines the UUAA Re-authentication and authorization procedure.In addition, a new requirement “*At a later point in time, if the UE wants to use the aerial services by providing the CAA Level UAV ID later on via UUAA-MM procedure, then the UE shall first perform UE-initiated Deregistration procedure as explained in clause 4.2.2.3.2 of TS 23.502 [3] followed by an Initial Registration to the 5GS including the CAA Level UAV ID in the registration request.” is added to* TS23.256 subclause 5.2.2.1 Figure 5.2.2.1-1 Step 4.It is suggested to solve the following EN in the subclause 4.22.2.Editor's note [ID\_UAS, CR3135]: Details of the UUAA procedure will be specified once stage-2 normative text is available. |
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| ***Summary of change:*** | Update the general part for Authentication and authorization of UAV. |
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| ***Consequences if not approved:*** | The EN in the subclause 4.22.2 isn’t solved. |
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| ***Clauses affected:*** | 4.22.2 |
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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 ...  |
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| ***Other comments:*** |  |
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| ***This CR's revision history:*** | Update the description of the UUAA-MM/UUAA-SM failure. |

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### 4.22.2 Authentication and authorization of UAV

The 5GS supports the USS UAV Authorization and Authentication (UUAA) procedure for a UE supporting UAS services. Depending on operator policy or regulatory requirements, the UUAA-MM procedure can be performed by the UE and the AMF at a registration procedure as specified in subclause 5.5.1 or the UUAA-SM procedure can be performed by the UE and the SMF at a PDU session establishment procedure as specified in subclause 6.4.1. The UE shall support UUAA-MM and UUAA-SM, and the network shall support UUAA-SM and may optionally support UUAA-MM. The UUAA procedure needs to be performed by 5GS with USS successfully before the connectivity for UAS services is established.

During a registration procedure, the UE supporting UAS services provides CAA-level UAV ID to the AMF (see subclause 5.5.1.2), and the AMF may trigger the UUAA-MM procedure. If the UE supporting UAS services does not provide CAA-level UAV ID to the AMF, the AMF may accept the registration and further reject PDU session establishment requests for UAS services. If the UE wants to use the UAS services by providing the CAA Level UAV ID later on via UUAA-MM procedure, then the UE shall first perform UE-initiated de-registration procedure followed by an initial registration to the 5GS including the CAA Level UAV ID in the registration request.

When a UE supporting UAS services requests to establish a PDU session for USS communication, the UAV provides CAA-level UAV ID to the network (see subclause 6.4.1.2), and the SMF may trigger the UUAA-SM procedure. If the UE does not provide CAA-Level UAV ID and the SM subscription for the UE requires the UUAA-SM, the network rejects the UE-requested PDU session establishment procedure for UAS services.

A UE supporting UAS services may provide to the network the USS address or USS FQDN during the registration procedure or PDU session establishment procedure so that the network may use the information to discover the USS.

After successful UUAA procedure, either the AMF or the SMF may initiate re-authentication of the UAV when required by the USS. If UUAA-MM fails during a re-authentication and there are PDU sessions established using UAS services, AMF shall release these PDU Sessions and may trigger a network-initiated de-registration procedure based on network policy. If UUAA-SM fails during a re-authentication, the SMF shall release the PDU session related to re-authentication.If the UUAA is revoked, the PDU session related to UAS services shall be released by the SMF. Based on operator policy, the AMF may decide to keep the UE registered or trigger a de-registration procedure.

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