**3GPP TSG-SA1 Meeting #95e *S1-21xxxx***

**Electronic Meeting, 23 August –2 September 2021** *(revision of S1-21xxxx)*

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **<Spec#>** | **CR** | **<CR#>** | **rev** | **<Rev#>** | **Current version:** | **<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 |  | Radio Access Network |  | Core Network |  |

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| ***Title:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | <Source\_if\_WG> | | | | | | | | | |
| ***Source to TSG:*** | <Source\_if\_TSG> | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | <Related\_WIs> | | | | |  | ***Date:*** | | | <Res\_date> |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **<Cat>** |  | | | | | ***Release:*** | | | <Release> |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

------- START 1st CHANGE ------

5.1 General

[R-5.1-001] The 3GPP system should enable UTM to associate the UAV and UAV controller, identify them as a UAS.

[R-5.1-002] The 3GPP system shall be able to provide UTM with the identity/identities of a UAS.

[R-5.1-003] The 3GPP system shall enable a UAS to send UTM the UAV data which can contain: unique identity (this may be a 3GPP identity), UE capability of the UAV, make & model, serial number, take-off weight, position, owner identity, owner address, owner contact details, owner certification, take-off location, mission type, route data, operating status.

[R-5.1-004] The 3GPP system shall enable a UAS to send UTM the UAV controller data which can contain: unique identity (this may be a 3GPP identity), UE capability of the UAV controller, position, owner identity, owner address, owner contact details, owner certification, UAV operator identity, UAV operator license, UAV operator certification, UAV pilot identity, UAV pilot license, UAV pilot certification and flight plan.

[R-5.1-005] The 3GPP system shall enable a UAS to send different UAS data to UTM based on the different authentication and authorizations level which are applied to the UAS.

NOTE 0: Subject to the regional regulation, the different authentication and authorization levels can be: the initial network access authentication and authorization, UAS identity authentication, UAV flight plan authorization, additional UTM service authentications, such as flight monitoring, collision avoidance services, so on.

[R-5.1-006] The 3GPP system shall support capability to extend UAS data being sent to UTM with the evolution of UTM and its support applications in future.

[R-5.1-007] Based on regulations and security protection, the 3GPP system shall enable a UAS to send UTM the identifiers which can be: IMEI, MSISDN, or IMSI, or IP address.

[R-5.1-008] The 3GPP system shall enable a UE in a UAS to send the following identifiers to a UTM: IMEI, MSISDN, or IMSI, or IP address

[R-5.1-009] The 3GPP system should enable an MNO to augment the data sent to a UTM with the following: network-based positioning information of UAV and UAV controller.

NOTE 1: This augmentation may be trust-based (i.e. the MNO informs the UTM that the UAV position information is trusted) or it may be additional location information based on network information, such as OTDOA, cell coordinates, synchronization source, etc.

NOTE 2: This requirement will not be applied to the case which the UAS and UTM has direct control communication connection without going through MNO, such as OTDOA, cell coordinates, synchronization source, etc.

[R-5.1-010] The 3GPP system shall enable UTM to inform an MNO of the outcome of an authorisation to operate.

[R-5.1-011] The 3GPP system shall enable an MNO to allow a UAS authorisation request only if appropriate subscription information is present.

[R-5.1-012] The 3GPP system shall enable a UAS to update a UTM with the live location information of a UAV and its UAV controller.

[R-5.1-013] The 3GPP network should be able to provide supplement location information of UAV and its controller to a UTM.

NOTE 3: This supplement may be trust-based (i.e. the MNO informs the UTM that the UAV position information is trusted) or it may be additional location information based on network information.

[R-5.1-014] The 3GPP network shall support UAVs and the corresponding UAV controller are connecting to different PLMNs at the same time.

[R-5.1-014a] The 3GPP system shall support UAVs and the corresponding UAV controller are connecting to different PLMNs at the same time.

[R-5.1-015] The 3GPP system shall provide the capability for network to obtain the UAS information regarding its support of 3GPP communication capabilities designed for UAS operation.

[R-5.1-016] The 3GPP system shall support the UAS identification and subscription data which can differentiate the UAS with UAS-capable UE and the UAS with non-UAS-capable UE.

NOTE 4: UAS-capable UE refers to the UE which support interaction capability with UTM and certain 3GPP communication features which 3GPP provides for UAS.

[R-5.1-017] The 3GPP system shall support the UTM in detection of UAV operating without authorization.

NOTE 5: the requirement above covers a scenario where a UAV has become airborne but has not received a positive authorization response from the UTM. In such case, some information could be made available (from the 3GPP system) to the UTM if needed, for example the UE location, its 3GPP identity and UTM credentials provided by the UAV.

------- END 1st CHANGE ------