**3GPP TSG-SA3 Meeting #115 *S3-240429***

**Athens, Greece, 26 February -01 March 2024**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **33.256** | **CR** | **0041** | **rev** | - | **Current version:** | **18.1.0** |  |
|  | | | | | | | | |
| *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 | **x** | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Clarification to direct C2 security for unicast | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | S3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UAS\_Ph2 | | | | |  | ***Date:*** | | | 2024-02-18 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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:*** | | The unicast mode security mechanism defined in TS33.536 (V2X) has been reused in TS33.256 (UAS) to provide unicast mode A2X Direct Communication security (see Clause 5.6.2.3 of TS33.256). As specified in TS33.536, the credentials used to secure the Direct Communication, e.g. KNRP, are **in scope of 3GPP** (specified in Clause 5.3.3 of TS33.536).  However it is stated in the step 2 of Clause 5.4.2 that (last paragraph of Step 2) *“The content of C2 session security information…****is not in 3GPP scope****”*.  The above are contradictary and need to be clarified.  It is notable that the sentence contains “not is 3GPP scope” is correct for R17 where A2X was not considered then). | | | | | | | | |
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| ***Summary of change:*** | | Added a NOTE to clarifiy for the above issue. | | | | | | | | |
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| ***Consequences if not approved:*** | | Inconsistence specifications. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.7.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## 5.7 A2X Direct C2 Communication

### 5.7.1 General

The unicast mode Direct C2 Communication procedures are described in TS 23.256 [3]. Unicast mode Direct C2 Communication is used by two UEs that directly exchange traffic for the A2X applications running between the peer UEs.

Before taking part in Direct C2 Communication, the UAV needs to be authorised as described in TS 23.256 [3] (see also the present document for more details of C2 authorisation over the network). If the UE is authorised over the 3GPP network, the USS may send a C2 session security information as part of the C2 authorization payload as described in clause 5.4. The content of C2 session security information (e.g., key material to help establish security between the UAV and UAV-C) is not in 3GPP scope.

### 5.7.2 Unicast mode Direct C2 Communication

Unicast mode Direct C2 Communication has the same requirements and procedures as unicast mode A2X Direct Communication (see clause 5.6.2 of the present document) with the following exception:

- The A2X Policy Provisioning is done based on TS 23.256 [3] clause 6.2.1 and the A2X Policy includes A2X security policy for each A2X services (e.g., C2 and DAA). The C2 service specific security policy available as part of A2X security policy is used for the security establishment (i.e. included in the direct communication request and is further replayed in the Direct security mode command to provide protection against bidding down attacks as described in TS 33.536 [7]), where the signalling and user plane confidentiality and integrity are set as required based on local policy.

NOTE: In order to reuse the mechanism defined in clause 5.3 of TS 33.536 [7], KNRP is provisioned during Pairing Authorization (step 2 of clause 5.4.2 in the present document), i.e. KNRP described in clause 5.3.3 of TS 33.536 [7] is included in the content of C2 session security information. ~~K~~~~NRP~~ ~~is encrypted by the USS (either using public keys of the UAV or the UAV-C) and how to generate K~~~~NRP~~ ~~is not in scope of 3GPP.~~

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