**3GPP TSG-SA3 Meeting #104-e *S3-212584***

**e-meeting, 16 - 27 August 2021** Revision of S3-20xxxx

**Source: Huawei, HiSilicon**

**Title: UAA procedure during PDU session establishment**

**Document for: Approval**

**Agenda Item: 4.20 ID\_UAS**

# 1 Decision/action requested

***Approve the proposed pCR as normative text***

# 2 References

[1]

# 3 Rationale

This contribution proposes the UAA procedure based on the agreed principle in the study. It is in-line with SA2’s procedure as well.

# 4 Detailed proposal

pCR

\*\*\* BEGINNING OF CHANGES (all text new) \*\*\*

### X.x.x.3 UAA Procedure during PDU Session Establishment

The SMF may trigger a UAA procedure during the PDU session establishment procedure with details described below. The below description considers only the security related parameters (for full details of the flows see TS 23.256 [aa]).

1. The SMF determines the UAA procedure needs to be triggered. UUAA shall only be triggered if the UE has provided a CAA-Level UAV ID and has a valid Aerial UE subscription. SMF may skip UAA if the UE has completed UAA succussfully with the same USS/DN before, i.e., in previous PDU Session Establishement procedures or at registration.

2. The AMF sends a message Nnef\_Auth\_Req to the UAS NF, including the GPSI and the CAA-Level UAV ID.

3. The UAS NF sends an Authentication Request to the USS which includes the GPSI and the CAA-Level UAV ID.

4. The USS and the UE exchange multiple Authentication messages:

4a. The USS replies to UAS NF with the Authentication Response message. It shall include a transparent container composed of an authentication message.

4b. The UAS NF sends the transparent container received in 4a to the SMF.

4c. The SMF forwards the transparent container to the AMF, which then forwards to the UE over a NAS MM transport message.

4d. The UE responses the AMF with an Authenticaiton message embedded in a transparent container over a NAS MM transport message. The AMF forwards to the SMF.

4e. The SMF sends a message Nnef\_Auth\_Req to the UAS NF including the GPSI and the CAA-Level UAV ID, and the transparent container including the Authentication message provided by the UE.

4f. The UAS NF sends an Authentication Request to the USS. The Authentication Request includes the GPSI, the CAA-Level UAV ID and the transparent container.

NOTE: Multiple round-trip messages (4a to 4f) may be as required by the authentication method used by USS.

5. The USS sends the UAS NF an Authentication Response message. The Authentication Response message shall include the UAA result (success/failure)and a transparent container composed of Authorization Payload to the UAV if provided by the USS.

NOTE: The contents of the Authorisation Payload is not in the scope of 3GPP.

NOTE 2: The Authorisation Payload can be used to carry UAS or C2 security information between the USS and UAV. The content of UAS security information (e.g. key material to help establish security between UAV and USS or C2 communications) is not the scope of 3GPP.

If UAA successful, the UAS NF stores the UAV UEs’ UUAA context whichincludes the GPSI and an identifier of the USS.

Editor's note: Whether the identifier of the USS is sent to the UAS NF or an identifier local to the UAS NF is FFS.

6. The UAS NF sends the SMF an Authentication Response messagethe UAA result (success/failure)and the transparent container received in step 5.

7. The SMF sends the UUAA result (success/failure) and transparent container received in step 5 to the UE.

The message(s) used in step 7 and and any further actions the SMF takes are given in TS 23.256 [aa].



Figure X.x.x.3-1: UUAA Procedure during PDU Session Establishment

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