**3GPP TSG-SA3 Meeting #109Adhoc-e *S3-230233***

**Electronic meeting, 16 - 20 January 2023**

**Source: Ericsson**

**Title: Evaluation of Solution#9 – NSWO in SNPN**

**Document for: Approval**

**Agenda Item: 5.16**

# 1 Decision/action requested

***It is proposed to add the proposed evaluation to Solution #9 of the TR 33.858 [1].***

# 2 References

[1] 3GPP TR 33.858 Study on security aspects of enhanced support of Non-Public Networks phase 2

# 3 Rationale

This document proposes an evaluation of the Solution #9 of the TR 33.858 [1].

# 4 Detailed proposal

\*\*\*BEGIN CHANGES\*\*\*

## 6.9 Solution #9: NSWO support in SNPN using any key-generating EAP-method

### 6.9.1 Introduction

This solution solves Key issue #1 in the case of NSWO using any key-generating EAP-method.

Current procedures for NSWO are only defined to use EAP-AKA'. This solution extends the NSWO procedures to be able to use any key-generating EAP-method in SNPN.

The proposed procedure is based on the current procedures in Annex S.2.3 of TS 33.501[4]. The procedures assume access to subscribed SNPN.

### 6.9.2 Solution details



Figure: 6.9.2-1: Authentication procedure for NSWO in SNPN

Steps 1-2 are performed as described in Annex S.3.2 of TS 33.501 [4].

Step 3 is performed as described in Annex S.3.2 of TS 33.501 [4] with the following addition: If the EAP method supports privacy and the UE is configured to use anonymous SUCI, the UE may send an anonymous value SUCI based on configuration.

Steps 4-6 are performed as described in Annex S.3.2 of TS 33.501 [4].

7. Upon reception of the Nudm\_UEAuthentication\_Get Request, the UDM invokes SIDF to de-conceal SUCI to gain SUPI.

Based on the subscription the UDM selects the appropriate EAP method to be used. The UDM includes an indicator of the selected EAP method and the SUPI to AUSF in a Nudm\_UEAuthentication\_Get Response message.

8. Authentication is performed between the AUSF and UE using the selected EAP method. After a successful authentication the AUSF derives the MSK key. The decision to use MSK instead of EMSK is based on the NSWO indicator received in step 5.

Steps 9-11 are performed as described in steps 16-18 of Annex S.3.2 of TS 33.501 [4].

### 6.9.3 System impact

The solution has impact on UE and AUSF. No impact on WLAN AP, NSWOF or UDM.

### 6.9.4 Evaluation

This solution solves Key issue #1 in aspect of supporting NSWO in SNPN that has AUSF/UDM. It reuses the procedures of Annex S of TS 33.501 [4] as much as possible adding the possibility of using any key-generating EAP-method. This addition affects the following steps of the procedure:

- Step3: added possibility to use anonymous SUCI as described in clause 6.9.2

- Step7: UDM selects EAP method based on configuration as described in clause 6.9.2

- Step8: Authentication may be performed using any key generating EAP-method as described in clause 6.9.2

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