**3GPP TSG-SA3 Meeting #102Bis-e *draft\_S3-211007-r1***

**e-meeting, 1 - 5 March 2021** Revision of S3-20xxxx

**Source: Ericsson**

**Title: Updates to solution #10 on PS address**

**Document for: Approval**

**Agenda Item: 2.12**

# 1 Decision/action requested

***It is proposed to add how the PS address is sent to the UE and ON in solution #10***

# 2 References

[1] 3GPP TR 23.700-07: "Study on enhanced support of non-public networks (Release 17)"

# 3 Rationale

In solution #10 is hinted that the DCS sends information about how to reach the PS to the ON. However, details are lacking. This contribution adds details on how the address to the PS can be sent to the UE and the ON from the DCS.

# 4 Detailed proposal

\*\*\*START OF CHANGES\*\*\*

### 6.10.2 Solution details



**Figure 6.10.2-1: Initial access with key derivation**

0. In this solution, the DCS is assumed to be pre-configured with the PS address for each onboarding SUPI. E.g., the owner of the DCS can configure the PS address in the DCS when the UE is sold to or being deployed by the SO.

1. The UE sends a registration request to the onboarding SNPN acting as onboarding network. The UE includes an onboarding indication and an anonymous SUCI as described in clause B 2.1.2.2 of TS 33.501 [2].

NOTE 1: How the UE selects an onboarding network is out of scope of the present document.

2. AMF forwards the registration request to AUSF.

3. The AUSF decides based on the onboarding indication that an external authentication is to be performed and uses the realm part of the SUCI to route the request to the right DCS.

4. The AUSF interacts with the DCS in order to have the DCS perform primary authentication. The AUSF uses a AAA-P/IWF to interact with the DCS.

5. UE and DCS performs primary authentication based on EAP-TLS. Since the SUCI was anonymous in line with clause B 2.1.2.2 of TS 33.501 [2] the tunnel is setup first before certificates are exchanged.

6. The DCS sends an EAP response to the AUSF. Including keying material and a SUPI. In this case the UE ID from the certificate would act as SUPI. The response also includes the PS Address.

7. The AUSF sends a success message to the AMF including keying material, the SUPI and the PS address.

8. The AMF includes an indicator on how the UE shall derive its keys to the UE in the NAS message carrying the EAP Success.

NOTE 2: This solution proposes an indicator to communicate how the UE derive keys. Whether or not sending the indicator is necessary is in the scope of Key Issue #1 "Credentials owned by an external entity".

9. The UE derives its keys and the registration is complete.

10. The AMF sends the PS address to the UE over the established secure NAS connection. The AMF may also store the PS address for future use, e.g. to send it to the SMF for enabling user plane access limitation towards the PS.

Editor’s Note: How to protect the provisioning procedure via Control Plane regarding to the trust relationship between Onboarding SNPN and PS owner’s domain is FFS.

The DCS and the onboarding network have a business agreement that the DCS provides mutual authentication with UEs for the purpose of initial access to the onboarding network. This implies that there is mutual trust between AUSF and DCS. Security mechanisms for the interface between DCS and onboarding network are out of scope of this solution.

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