**3GPP TSG-WG SA2 Meeting #140 E e-meeting *S2-200xxxx***

**Elbonia, August 19 – September 02, 2020 (revision of S2-200xxxx)**

**Source: Huawei, HiSilicon**

**Title: Updates of Solution #1 on NSSAA related procedures**

**Document for: Approval**

**Agenda Item: 8.4**

**Work Item / Release: eNS\_Ph2 / Rel-17**

*Abstract: This contribution proposes updates to complete “Solution #1: PCF measurement based Network Slice SLA control for Maximum Number of UEs parameter” in TR 23.700-40.*

# 1. Discussion

This contribution proposes to complete solution #1: PCF measurement based Network Slice SLA control for Maximum Number of UEs parameter, by adding the related procedures of Network Slice Specific Authentication and Authorization (NSSAA) triggered by AMF and AAA Server.

Basically, the maximum number of UEs of S-NSSAI is updated (i.e., increase or decrease by one in the associated policy counter) by the following cases.

Case 1: AMF triggers NSSAA procedure

Case 2: AAA Server (AAA-S) triggers Network Slice-Specific Re-authentication and Re-authorization procedure

Case 3: AAA Server (AAA-S) triggers Slice-Specific Authorization Revocation

# 2. Text Proposal

It is proposed to capture the following changes to TR 23.700-40.

\* \* \* \* First change \* \* \* \*

### 6.1.3 Procedures

#### 6.1.3.X Network Slice Specific Authentication and Authorization with Slice SLA Quota Update



Figure 6.1.3.X-1: Maximum Number of UEs updates on NSSAA related procedures.

The maximum number of registered UEs of S-NSSAI is required to update based on the related procedures of (re-)authentication and (re-)authorization for the Network Slice specified by the S-NSSAI. Basically, the maximum number of UEs of S-NSSAI is updated (i.e., increase or decrease by one in the associated policy counter) by the following cases.

Case 1: AMF triggers NSSAA procedure

A. In case the related S-NSSAI has not been added into the Allowed NSSAI, for pending Network Slice Specific Authentication and Authorisation (NSSAA) for the S-NSSAI, AMF triggers NSSAA procedure according to the clause 4.2.9.2(step 1-step 17) in TS 23.502 [6]. If the pending NSSAA procedure is successful for the S-NSSAI, before EAP success NAS message sent back to the UE, same as the step 2-6 in clause 6.1.3.2, the AMF requests the AM-PCF to verify the local quota and increase the policy counter of the S-NSSAI by one.

B. In case the related S-NSSAI has been added into the Allowed NSSAI. if the authorization fails and the S-NSSAI needs to be removed from the Allowed NSSAI according to the clause 4.2.9.2(step 1-step 17) in TS 23.502 [6], before EAP failure NAS message sent back to the UE, same as the step 2 in clause 6.1.3.3, the AMF requests the serving PCF to decrease the policy counter of the S-NSSAI by one..

Case 2: AAA Server (AAA-S) triggers Network Slice-Specific Re-authentication and Re-authorization procedure

The AAA-S initiates the re-authentication and re-authorization for the Network Slice specified by the S-NSSAI for a UE according to the clause 4.2.9.3 in TS 23.502 [6]. If the AAA-S initiated the re-authentication and re-authorization of the S-NSSAI for the UE results NSSAA failure for the S-NSSAI according to the clause 4.2.9.2(step 1-step 17) in TS 23.502 [6], before EAP failure NAS message sent back to the UE, same as the step 2 in clause 6.1.3.3, the AMF requests the serving PCF to decrease the policy counter of the S-NSSAI by one.

Case 3: AAA Server (AAA-S) triggers Slice-Specific Authorization Revocation

The AAA-S initiates the revocation of authorization for the Network Slice specified by the S-NSSAI for a UE according to the clause 4.2.9.4 in TS 23.502 [6]. If the AAA-S initiated the revocation of authorization of the S-NSSAI for the UE is successful, before UCU message sent to the UE, same as the step 2 in clause 6.1.3.3, the AMF requests the serving PCF to decrease the policy counter of the S-NSSAI by one.

The serving PCF sends a response message back to the AMF.

\* \* \* \* End of changes \* \* \* \*