**3GPP TSG-WG SA2 Meeting #162 *S2-2404821***

**Changsha, China, April 15th – 19th, 2024 (revision of S2-240xxxx)**

**Source: ZTE**

**Title: KI#2: Update on solution#11**

**Document for: Approval**

**Agenda Item: 19.9**

**Work Item / Release: FS\_eEDGE\_5GC\_ph3 / Rel-19**

*Abstract: This paper proposes update on solution#11 in TR 23.700-49.*

# 1. Text Proposal

It is proposed to capture the following changes vs. TR 23.700-49.

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

## 6.11 Solution #11: Provision weight factor of DNAIs from AF

### 6.11.1 Description

This solution is for key issue #2.

The following NOTE is quoted from TS 23.548[5]:

*NOTE 12: If multiple candidate DNAIs are available after considering the UE location, network topology and EAS deployment, the SMF selects one DNAI from the multiple ones based on operator's policy. For examples, the SMF can select the DNAI randomly, or based on selection weight factor if provided by AF, or select the DNAI closest to the UE location.*

The SMF may use the selection weight factor for each DNAI to select a target DNAI. It is unclear how the selection weight factor is provided by the AF. This solution propose that the AF can provide the selection weight factor for each DNAI to the SMF in the EAS Deployment information. The following shows example on how the weight factor is set corresponding to the EAS load:

- When the EAS load associated with the DNAI is low, the weight factor of the DNAI can be set to high value, which increases the possibility to select the corresponding DNAI.

- When the EAS load associated with the DNAI increase, the weight factor of the DNAI can be set according to relative capacity of EAS associated with the DNAIs, which ensures the selection of DNAI to be associated with the relative capacity of the EAS associated with the DNAIs.

- When the EAS load associated with the DNAI reaches threshold, the weight factor of the DNAI can be set to low value, which reduce the possibility to select the corresponding DNAI. Value 0 indicates the DNAI is not permitted for the EAS traffic.

NOTE: In order to reduce the signalling load of the providing EDI towards the SMF, it is expected that AF will not change the weight factor of the DNAI very frequently.

In addition, the AF may also provide average delay over N6 interface associated with the DNAI in the EAS Deployment information. The SMF can obtain the delay between the UE and DNAI/UPF by using QoS monitoring. When the SMF receives E2E delay requirements in the PCC rule, the SMF selects DNAI/UPF via which the E2E delay (UE to UPF delay + N6 interface delay) can meet the E2E delay requirements.

### 6.11.2 Procedures



Figure 6.11.2-1 EAS Deployment Information management in the AF procedure

1. The AF invokes the Nnef\_EASDeployment\_Create/Update service operation. This request may contain the following additional information

- Selection weight factor per DNAI: selection weight for each DNAI when there are more than one DNAIs provided by the AF. The weight factor for each DNAI can be set according to the clause 6.11.1.

- Average delay over N6 interface per each DNAI: the average delay between the UPF and EAS(es) in the Data Network. Each EAS measures N6 delay by using Layer 3 measuring mechanisms respectively, e.g. via ICMP as defined in RFC 792[7]. The AF calculates an average delay over N6 interface for the DNAI by considering the measurement result from all EASs associated with DNAI.2. NEF checks whether the AF is authorized to perform the request, and authorised to provision the EAS Deployment Information based on the operator policies.

3. The NEF invokes the Nudr\_DM\_Create/Update to the UDR if it is authorized.

4. The UDR stores/updates the corresponding information received from the AF. And responds a Nudr\_DM\_Create/Update Response to the NEF.

5. The NEF sends Nnef\_EASDeployment\_Create/Update Response to the AF.

### 6.11.3 Impacts on services, entities and interfaces

The EAS Deployment information is enhanced to include the selection weight factor per DNAI, average delay over N6 interface per DNAI

The SMF is enhanced to use the new information in the EAS Deployment information to select DNAI.

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