**SA WG2 Meeting #144eS2-2102162r05**

**April 12 – 16, 2021; Elbonia (revision of S2-210)**

**Source: Nokia, Nokia Shanghai Bell**

**Title: Issue that we cannot guarantee that the UE uses the EASDF's IP address for its subsequent DNS Query**

**Document for: Agreement (P-CR)**

**Agenda Item: 8.3**

**Work Item / Release: eEDGE\_5GC / Rel-17**

*Abstract of the contribution:* Issue that we cannot guarantee that the UE uses the EASDF's IP address for its subsequent DNS Query

# 1 Discussion

# 2 Proposal

**It is proposed to update TS 23.548 as follows**

*FIRST CHANGE only the part of the clause* 6.2.3.2.2 *that is modified by the PCR is shown, the rest of the clause is unchanged by the PCR*

5. The SMF includes the IP address of the EASDF as DNS server in PDU Session Establishment Accept message as in step 11 of clause 4.3.2.2.1 of TS 23.502 [3]. The UE configures the EASDF as DNS server for that PDU Session.

NOTE: If it is not possible to guarantee that the UE use the EASDF's IP address provided by the SMF for the subsequent DNS Query , some network-based mechanisms described below and in step 8 can be used in order to deal with UE that do not use the EASDF's IP address provided by the SMF.

Before sending the IP address of the EASDF as DNS server to the UE,the SMF may configure the UPF to detect DNS traffic sent by the UE to a different DNS server than the EASDF. This corresponds to a PDR referring to the ports used by DNS protocols (53, 853) and to the EASDF's IP address (that the SMF will send to the UE) and with a corresponding UDR to allowing the SMF be notified.

NOTE: This mechanism can’t deal with DNS requests not sent over well known DNS ports.

6. The SMF may invoke Neasdf\_DNSContext\_Update Request (PDU Session Context ID, rules to handle DNS queries from the UE) to EASDF. The update may be triggered by UE mobility, e.g. when UE moves to a new location, or by a reporting by EASDF of a DNS Query with certain FQDN, or, the update may be triggered by insertion/removal of Local PSA, e.g. to update rules to handle DNS messages from the UE or by new PCC rule information.

Editor's note: It is FFS whether and how the AF-triggered DNS server information change trigger DNS context update procedure.

7. The EASDF responds with Neasdf\_DNSContext\_Update Response.

8. The UE sends DNS Query message.

To handle the case where the UE would not send the DNS Query message to the EASDF, the SMF may be notified by the UPF based on the instruction to UPF in step 5;

Editor's note: The actions taken by SMF and UPF upon detection of DNS traffic not targeting the EASDF’s IP address are FFS.

NOTE: The mechanism is not useful if the UE is using ciphered DNS traffic.

The rest of the procedure assumes the UE has indeed used the EASDF as its network DNS resolver.

*NEXT CHANGE (2)*

*End of changes*