**SA WG2 Meeting #143eS2-210**

**Feb 24th – March 9th, 2021 ; Elbonia (revision of S2-210)**

**Source: Nokia, Nokia Shanghai Bell, ZTE?, Huawei ?,**

**Title: KI2 Target PSA buffering**

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

**Agenda Item: 8.3**

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

*Abstract of the contribution:*

# 1 Discussion

### TR 23.748 § 9.2.1 Conclusions for Key Issue #2: Reducing packet loss during EAS relocation

Buffering uplink packets in the target PSA until receiving the indication of successful EAS relocation from the AF as proposed in Solution #27 and Solution #38 is recommended for normative phase. The old EAS may continue to serve the UE until the successful EAS relocation is done in order to reduce the packet loss. When the EAS relocation starts is out of scope of 3GPP.

This solution may be applied to all connectivity models. Whether Buffering of uplink packets applies to the application traffic depends on the application requirement.

NOTE: How 5GC gets the application requirement and in what granularity are to be decided in normative phase.

There is a companion 23.502 CR

# 2 Proposal

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

*FIRST CHANGE*

### .. Clause title to be provided

This procedure aims at synchronizing between EAS relocation and UL traffic from the UE, ensuring that UL traffic from the UE is sent to the new EAS only when EAS context transfer has been carried out



Figure 6.38.2.1-1: Procedure of preventing packet loss in uplink

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1. The SMF decides to change the local PSA of a PDU Session with UL CL.

2. The SMF may send an early notification to the AF after target PSA (i.e. PSA2) is selected and waits for a notification response from the AF. The AF may reply in positive to the notification by indicating that buffering of uplink traffic to the target DNAI is needed as long as traffic to the target DNAI is not authorized by the AF . This is as defined in Steps 1 and 2 of 23.502 Figure 4.3.6.3-1

3. The SMF configures the PSA2 as specified in step 2 in clause 4.3.5.6 and step FFS in clause 4.3.5.7 of TS 23.502 [3],. The PSA1 (i.e. source PSA) keeps receiving downlink traffic from EAS1 and send it to the UE until it is released in step 7.

4. The SMF sends an N4 Session Modification Request to the UL CL to update the UL CL rules regarding to the traffic flows that the SMF tries to move from PSA1to PSA2. The N4 Session Modification Request message contains the identifications of traffic filter that needs to be updated and the tunnel ID to PSA2.

5. The application layer performs the EAS relocation. The UE context is relocated from the old EAS to new EAS. The old EAS stops to serve the UE

5a The old EAS may send the new EAS IP address to the UE via application mechanism, for example the HTTP redirection.

5b. The UE may use the old EAS IP address to acknowledge the HTTP redirection to the old EAS. The UE then can start to use the new EAS IP address as target IP address.

6. The SMF sends a Late Notification to the AF. When EAS relocation is completed, the AF sends a notification response to the SMF. This corresponds to step 4 of 23.502 Figure 4.3.6.3-1 and may indicate that buffering of uplink traffic to the target DNAI is no more needed as traffic to the target DNAI /EAS is now authorized by the AF

7. (if AF has indicated that buffering of uplink traffic to the target DNAI is no more needed as traffic to the target DNAI /EAS is now authorized by the AF) The SMF updates the PSA2 by indicating the PSA2 to send the buffered uplink packets (step 7b) and to stop buffering. The SMF releases PSA1.

*NEXT CHANGE (2)*

*End of changes*