3GPP TSG SA WG 4 Meeting 125 TDoc S4-231592

Göteborg, Sweden, 21 – 25 August 2023 *(revision of S4-231430)*

**Title: LS Reply on Design of RTP Header Extension for PDU Set Handling**

**Response to: LS Reply (S4-231147/S2-2308248) on Design of RTP Header Extension for PDU Set Handling from SA2**

**Release: Release 18**

**Work Item: 5G\_RTP, XRM**

**Source:** **SA WG 4**

**To:** **SA WG 2**

**Cc: RAN WG 2, RAN WG 3**

**Contact person: Andrei Stoica**

 **rstoica AT lenovo DOT com**

**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**Attachments:**

# 1 Overall description

SA4 thanks SA2 for the LS reply (S2-2308248/S4-231147) and acknowledges the agreements SA2 has made for Release 18 (i.e., CR 4527r8 on SA2 TS 23.501 v18.1.0) on the PSA UPF treatment of heterogeneous RTP-based traffic containing PDUs marked with PDU Set information and PDUs not marked with PDU Set information.

Furthermore, SA4 kindly provides the feedback below.

**Feedback on Reply#1**

SA4 would like to inform about potential complexity associated with UPF mapping and marking PDUs with no PDU Set Information (aka “lonely PDUs” in SA2 jargon) to a PDU Set as described by CR 4527r8/ S2-2308193.

1. To avoid any inconsistencies of PDU Set processing at lower RAN layers, GTP-U header PDU set information should ensure consistent PDU Set sequence numbering among existent PDU Sets and UPF added PDU Sets.

To this end, SA4 understands and assumes that PDU Set Sequence Number scope is at the level of a QoS flow (e.g., a 5-tuple).

Concretely, given any past *N* sequence of PDU Sets corresponding to a QoS flow, a UPF marked PDU Set of one or more unmarked PDUs should become the *N+1* PDU Set and its GTP-U header PDU Set Sequence Number should be set accordingly to *N+1*. A next, original *N+1* PDU Set as marked by the application server, should reflect the addition of the previous UPF mapped PDU set in its GTP-U header information and offset its PDU Set Sequence Number in the GTP-U header accordingly, i.e., from *N+1* to *N+2*, to accommodate for the UPF mapped PDU Set.

***NOTE***: Kindly note that ensuring correct sequencing is only necessary at GTP-U header level and not in the RTP header extension PDU Set information which in some cases (i.e., SRTP) is anyways unmodifiable.

1. The PDU Set Importance value will attribute the same importance for all unmarked “lonely PDUs”. This may mix in the same importance category audio, metadata, RTCP PDUs. Caution is advised in setting the default importance value of UPF mapped PDU Sets. SA4 provides in TS 26.522 general guidelines on PDU Set importance for video/audio codecs which may be further considered for pre-configuring a general PDU Set importance value. Nevertheless, there is no “one size fits all” value and trade-offs should be carefully considered.

**Feedback on Reply#2**

SA4 will define in TS 26.522 its RTP header extension for PDU Set marking including an End of Data Burst field and will study the latter.

# 2 Actions

**To SA2**

**ACTION: SA4 respectfully asks SA2 to take the above information into account and provide feedback, if any.**

# 3 Dates of next TSG SA WG 4 meetings

SA4#126 13th - 17th November 2023, Chicago, USA

SA4#127 29th January - 2nd February 2024, Sophia Antipolis, France