**3GPP TSG-SA WG4 Meeting #131-bis-eS4-250687r1**

**Online, 11 – 17 April 2025**

Title: LS to SA2 and RAN2 on RTP retransmission

Response to: -

Release: Rel-19

Work Item: 5G\_RTP\_Ph2

Source: SA4

To: SA2, RAN2

Cc: -

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

Attachments: none

**1. Overall Description:**

During the FS\_5G\_RTP\_Ph2 study, SA4 looked into a candidate solution that aims to enable network awareness for RTP retransmission (as specified in RFC 4588) with the goal of improved PDU Set handling in the 5G network, as documented in clause 6.9 of TR 26.822.

According to RFC 4588, source and retransmission PDUs associated to a media flow are transmitted in separate RTP streams. Hence, they may be mapped by the 5GC into the same or different QoS flows.

SA4 discussed different PDU Set marking options for source and retransmission PDUs and identified some approaches which may be preferable depending on the QoS flow mapping.

One such approach is to assign source and retransmission streams to the same QoS flow and configure an RTP sender to apply PDU Set marking only to source PDUs of a media flow. SA4 understands that this would result in retransmission PDUs being marked by the 5GC into new PDU Sets containing a single PDU, as they would be N6-unmarked PDUs.

SA4 believes that marking source and retransmission PDUs into the same PDU Set would be detrimental for the network. If an RTP sender uses PDU Set marking both for source and retransmission PDUs within the same QoS flow, they should be marked into different PDU Sets to avoid maintaining state in the RAN, which (according to the SA4 understanding) may make the RAN operation more complex.

Retransmission PDUs have stricter delay requirements to ensure meeting the decoding deadlines of corresponding ADUs at the receiver. One identified approach to address this requirement is configuring an RTP sender to mark source and retransmission PDUs into different PDU Sets, which the 5GC maps then into distinct QoS flows. This approach can improve the timely delivery of retransmission PDUs by providing better QoS.

Currently, there is no mechanism to inform the 5G network whether an application uses RTP retransmission (e.g. a flag in the RTP HE for PDU Set marking) or any related information, such as how long source packets are kept in the RTP sender buffer for potential retransmission.

Question to SA2: Considering the options identified above, are there any benefits to providing application-layer retransmission information to the 5GC when PDU Set based handling is enabled? If so, SA4 would like to receive feedback on what type of application-layer retransmission information would be beneficial for PDU Set based handling in the 5GC.

Question to RAN2: Considering the options identified above, are there any benefits to providing application-layer retransmission information to the RAN when PDU Set based handling is enabled? If so, SA4 would like to receive feedback on what type of application-layer retransmission information would be beneficial for PDU Set based handling in the RAN.

**2. Actions:**

**To SA2, RAN2**

**ACTION:** SA4 kindly asks SA2 and RAN2 to take the above information into account and provide answers to the above questions. SA4 welcomes any additional feedback on potential usage and value of RTP retransmission related information in the 5GC and/or RAN.

**3. Dates of Next SA4 Meetings:**

SA4#132 19th – 23rd May 2025 Fukuoka, Japan

SA4#133-e 21st – 25th July 2025 online