**3GPP SA WG2 Meeting #126 R2-240xxxx**

**Fukuoka, Japan, 20-24 May 2024**

Title: Reply LS on Application-Layer FEC Awareness at RAN

Response to: S2-2405625 on Application-Layer FEC Awareness at RAN

Release: Release 19

Work Item: NR\_XR\_Ph3-Core

Source: Qualcomm Incorporated (to be RAN2)

To: SA2

Cc: SA4, RAN3

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Attachments: -

**1. Overall Description:**

RAN2 thank SA2 for the questions on application-layer FEC awareness at RAN. The following are answers from RAN2.

Questions for RAN2:

* Can NG-RAN determine whether a PDU was successfully delivered over an unacknowledged mode data bearer? If so, does NG-RAN get this information sufficiently early to decide whether or not to drop subsequent AL-FEC packets?

**Answer**: RAN2 does not think it is possible for NG-RAN to determine reliably whether a PDU has been successfully delivered over an unacknowledged-mode data bearer.

* Provide feedback on the impact on NG-RAN to support dynamic redundancy ratios, i.e., a different ratio of PDUs that need to be successfully transferred to the UE for different PDU Sets within the same QoS flow?

**Answer**: So far RAN2 has not yet had sufficient time to analyse the proposal in details. Based on initial analysis, RAN2 thinks that it may have negative impact on RAN performance due to intentional dropping of packets. Further analysis is required to fully assess those impacts. In addition, RAN2 thinks that it may introduce additional complexity for RAN on both UL and DL. For DL, while no impact on RAN2 specifications is foreseen, it may have impact on network implementation complexity. For UL, there might be potential impact on RAN2 specifications.

Questions for RAN2 and SA4:

* One solution (solution #3 in TR 23.700-70) proposed that an application may signal the required content ratio for a PDU Set (i.e., the required ratio of PDUs of a PDU Set needed by the receiver to reconstruct the original content) by first providing a mapping between content ratio levels and PDU Set Importance (PSI) values in the control plane to 5GS and by then using the PSI in the GTP-U header and the mapping received to determine the content ratio per PDU Set at NG-RAN. Does SA4 consider this a feasible option?

**Answer**: RAN2 believes that at least for DL this specific question is in the scope of SA4.

**2. Actions:**

**To SA2:**

**ACTION:** RAN2 kindly asks SA2 to take the above answers into consideration in the studies.

**3. Date of Next RAN2 Meetings:**

RAN2#127 19th Aug – 23th Aug 2024 Maastricht, Netherland

RAN2#127-bis 14th Oct – 18th Oct 2024 China (TBC)