**Source: Huawei (Rapporteur)**

**Title: KI#4 and KI#5, key questions for company view collection**

This document is to collect company views on key questions of KI#4 and #5 to facilitate the following conclusion discussion. Please kindly provide your company views on the following questions before EoB of Sep 16th. The rapporteur will collect the views and propose summary/way forwards/SoH for further discussion afterwards.

### Q1: How does UPF identify DL PDU Set info?

* Option 1: use existing IETF RTP/SRTP RFC and draft
* Option 2: Define/extend N6 protocols to carry related info
  + Option 2.1: extend GTP-U protocol
  + Option 2.2: extend HTTP header (S2-2205830)
  + Option 2.3: extend RTP header
* Option 3: UPF implementation based on e.g. traffic characteristics.
* Option 4: UPF interacts with NWDAF(S2-2205838)

**[Company view]**

**Position:**

* **Option 1 as the baseline for the unencrypted media header of RTP/SRTP based protocol for normative in R18. Security aspect needs further investigation at SA3.**
* **Option 2.2/2.3 can be considered for the encrypted media header of HTTP/RTP based protocol using TLS/DTLS/QUIC. The Coordination and collaboration with IETF/SA4 are needed.**

**Justification**:

* Option 2.1: the impacts on the application server cannot be ignored for broader deployment and supports. The tunnel-based solutions generally have scalability issues, e.g. GTP-U over N6 based solution requires CP plane (re)configuration if tunnel setting is not static.
* Option 3/Option 4 would need assistant information of accurate/coarse traffic characteristic from application server, which seems not practical for variants of XRM services.

### Q2. How to deliver PDU Set importance information to RAN:

* Option 1: use different QoS Flows with different priority level. PDU Set importance is mapped to existing QoS flow priority.
* Option 2: use one QoS flow for different PDU Set with different priority level
  + Option 2.1: use different sub-QoS Flow within one QoS Flow, and using sub-QoS flow Identifier in GTP-U header
  + Option 2.2: use PDU Set importance information in GTP-U header

**[Company view]**

**Position: Support Option 2 including both of Option 2.1 and Option 2.2**

**Justification**:

Option 1 has issue of handling out of order PDU Sets in different QoS flows for the same SDF of a XRM traffic at RAN.

Option 2 has no issue of out of order PDU Sets in a QoS flow with different Sub-flows. This option provides more granularities of QoS flow to RAN.

Both Option1 and Option2 require to provide QoS profile to RAN for the QoS requirement/characteristics of PDU Set.

### Q3: Support to PDU Set dependency-based scheduling

* Option 1: Identify accurate dependency relationship between PDU Sets for scheduling.
* Option 2: In some scenario (e.g. closed GOP), the decoding of the non-I frames between two successive I frames always directly or indirectly relies on the 1st I frame of the two successive I frames. If the 1st I frame is in error, the non-I frames can be dropped until the next I frame. (proposed in S2-2205839)
* Option 3: If a PDU Set is depended by others, it can be considered as more important during scheduling. But the scheduling will not further consider the accurate dependency relationship.

**[Company view]**

**Position: Support Option 3.**

**Justification**: Option 3 is simple and allows more general use cases for applications. Other options need great efforts at UPF but may provide limited optimization for RAN. SA2 can wait for RAN decision on whether such scheduling optimization is needed/beneficial and then decide whether to support identifying accurate dependency at 5GC.

### Q4. Support to hierarchical PDU Set:

* Option 1: introduces PDU Set group. (S2-2205938)
* Option 2: not support.

**[Company view]**

**Position: Option 2.**

**Justification**: this is related to Q3 and we stay the same views as Q3. No need to add complexity at UPF at this stage, which may provide limited optimization at RAN.

### Q5. On “*Whether to drop a PDU Set in case PSDB is exceeded*”, do we need further define “*PDU Set Discard Time*” (A PDU Set shall be dropped in case this time is exceeded (sol 25 etc):

* Option 1: Support
* Option 2: not support.

**[Company view]**

**Position: Option 2**

**Justification**: unnecessary complexity for introducing two related parameters. Whether to drop a PDU Set in case PSDB is exceeded is RAN implementation as what it does when PDB is exceeded and depending on the resource type.