**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: Support Option 1 and option 3 in this TR.**

**Justification**:

Option 1 is well defined by the IETF. And Option 3 can let UPF to implement the DPI for the XRM services.

Option 2.2 and 2.3 will need wait for IETF to define new IETF. And HTTP is not used for the real-time interactive XRM services. Option 2.3 can be considered in the further release. It is still unclear what general information to be defined for the GTP-U.

Option 4 cannot work at all and cannot provide RT information.

### 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 and Option 2.1 is preferred.**

**Justification**: For the Option 1, if different QoS Flows are used for the same PDU Set, it will introduce the complexity to re-order the received PDU set to get the same order. And it will introduce more delay and more dependencies between these QoS Flows.

In fact, the Option 2.2 can be implemented by the Option 2.1 since the importance information can be treated as the "sub-QoS Flow Identifier".

### 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**: In the new video codec H.265/266, it is very hard to accurate identify the dependency relationship between PDU Sets and these dependency is changed very quickly if multi-view, multi-layer video codec are used, i.e. the Option 1 cannot be well implemented.

For the Option 2, it does not consider the multi-layer, multi-temporal video codec used in H.265/H.266, and the solution is workable for very limited part of the video stream and cannot work for most part of the video stream.

Option 3 is more general and can work for all kinds of video codecs.

### Q4. Support to hierarchical PDU Set:

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

**[Company view]**

**Position: Select Option 2: Not Support**

**Justification**: The proposed solution only works well for very limited scenarios.

### 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: Select Option 2: not support**

**Justification**: In case PSDB is exceeded, it is not clear how to handle the first part packets of the PDU set that have been delivered to UE. The remaining buffered PDUs of the PDU set can be dropped if the PDB of these PDUs is exceeded or may be continually sent to the UE if the importance of the PDU set (e.g. the I-Frame) is very high.