**3GPP TSG-SA WG6 Meeting #38-e S6-201041**

**e-meeting, 20th – 31st July 2020**

**Source: Tencent, InterDigital, Lenovo**

**Title: Pseudo-CR on key issue x: UAV application server QoS provisioning.**

**Spec: 3GPP R 23.755**

**Agenda item: 8.5**

**Document for: Approval**

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**1. Introduction**

Stage 1 TS 22.125 specified two major QoS scheme where 3GPP network shall provide:

* “The 3GPP system shall support C2 communication with required QoS for pre-defined C2 communication models”
* UAV download/uplink performance for payload, location positioning

For C2 communication QoS, certain performance shall be guaranteed such as delay, reliability, ACK/Report back. Message size should be handled in the application layer, as specified in TS 22.125. How application layer handles such QoS feedback need to be studied.

At the same time, UAV application layer should be able to monitor current download/uplink performance based on measurement of data transmission in terms of data size, delay and etc.

For example, consider a live video transmission through 3GPP from a UAV onboard camera. Application layer may be able to monitor and provide feedback to USS/UTM regarding its current network performance.

Another example would be service performance adjustment. When a UAV flight high and fast, the QoS may be limited due to unstable connection. Application layer should be aware such network resource changes if there is payload onboard and service is in place such as data or file transfer. Media process method such as video codec selection, image compression method, file transfer rate shall be adjusted.

This pCR proposes a key issue on UAV application server QoS provisioning

**2. Reason for Change**

UAV application layer should be able to perform QoS provisioning based on KPI requirement and provide ACK mechanism based on collected QoS information.

**3. Conclusions**

**4. Proposal**

It is proposed to agree the following changes to 3GPP TR 23.755

\* \* \* First Change \* \* \* \*

## 5.x Key issue #X: UAV Application Server QoS Provisioning.

Both C2 communication and Data collected by a UAV onboard system such as payload equipment may get transmitted using 3GPP network and certain QoS parameters need be guaranteed as specified in stage 1 TS 22.125.

Hence, it is required to study the following:

- ~~Whether QoS requirements for the C2 communication is device or mission specific~~

~~- Whether and How the application server provide interface interacting with UE and USS/UTM~~

- Whether QoS requirements for the C2 communication is device or mission specific

- Whether and how does the 3GPP system obtain and apply QoS requirements?

- Whether and how different level of QoS differentiation can be supported for UAV operations (per C2 communication mode, mission type, C2 communication types, e.g. telemetry vs flight control)?

- Whether and how UAE/SEAL layer needs to be enhanced to support the QoS monitoring / provisioning