**3GPP TSG-SA WG6 Meeting #42-BIS-e S6-210994r1**

**e-meeting, 12th – 20th April 2021 (revision of S6-210749)**

**Source: Tencent**

**Title: Procedure for UAV and UAV-C Pairing and C2 QoS Provisioning using Group ID**

**Spec: 3GPP TS 23.255 v0.3.0**

**Agenda item: 7.10**

**Document for: Approval**

**Contact: Shuai Zhao, <shuaiizhao@tencent.com>**

**1. Introduction**

This contribution adds a new feature in UASAPP TS 23.255 for UAV and UAV-C grouping.

**2. Reason for Change**

In TR 23.755, solution#5 provides a grouping approach for C2 QoS provisioning. Based on the study evaluations, the proposed group method enables UAE-S for QoS management using a group-based approach.

**3. Proposal**

It is proposed for adoption to 3GPP TS 23.255 v0.3.0.

\* \* \* Change \* \* \* \*

## 6.x UAV and UAV-C Pairing and C2 QoS Provisioning using Group ID

### 6.x.1 General

This clause describes the procedure for UAV and UAV-C grouping C2 QoS provisioning using subsequent group id.

6.x.2 Procedures

6.x.2.1 Procedure for group creation for one pair of UAV and UAV-C

Figure 6.x.2.1-1 illustrates a high-level procedure for group creation.

Pre-conditions:

- Both UAV-C and UAV have successfully connected to the UAE server.

- A CAA-level UAV ID may be assigned during the 3GPP network registration process.

Diagram

Description automatically generated

Figure 6.x.2.1-1: Procedure for group creation for one pair of UAV and UAV-C

1. The UAE server recognizes a unique pair of UAV and UAV-C either by 3GPP UE ID or CAA-level UAV ID.

Editor’s Note: How UAE server recognizes a pair of UAV-C and UAV is FFS

1. The UAE server sends a group creation request to the SEAL GM server, if there is no pre-assigned group ID, by using the GM-S reference link as specified in 3GPP TS 23.434 [11] using the procedure defined in clause 10.3. The SEAL GM server creates one group ID for one pair of UAV and UAV-C as specified in 3GPP TS 23.434 [11].

3. The UAE server uses the returned group ID for UAS for QoS management.

6.x.2.2 Procedure for group-based approach for C2 QoS provisioning

Figure 6.x.2.2-1 illustrates a high-level workflow of group-based C2 QoS provisioning.

Editor's note: QoS provisioning when C2 is in dynamically changing mode is FFS.

Pre-conditions:

- Both UAV and UAV-C have registered to 3GPP 5G network respectively. C2 communication is established.

- The procedure specified in clause 6.x.2.1 is performed and the group ID for the UAS group is available at the UAE server.

Graphical user interface, application, table

Description automatically generated

Figure 6.x.2.2-1: Procedure of group-based approach for C2 QoS provisioning.

1. The UAE server monitors the QoS for the UAS group (which includes a UAV and UAV-C).

Editor’s Note: The details of UAE server QoS monitoring is FFS

1. In cases where the network condition for C2 communication does not satisfy the pre-defined QoS requirement, the UAE server may choose to send QoS adaptation request to the SEAL NRM server using the NRM-S reference point as specified in 3GPP TS 23.434 [11]. The QoS adaptation request needs to be sent per group ID for a pair of UAV and UAV-C created in the procedure specified in 6.x.2.1. The subsequent network resource adaptation procedure is triggered by the UAE server as specified in clause 14.3.3.3.1 of TS 23.434 [11].

3. The UAE client and UAE server established communication based on new QoS requirements as specified in clause 14.3.3.2.1.2-1 of 3GPP TS 23.434 [11].

4. UAS application layer adapts the updated QoS assignment.

Editor’s Note: How the UAS application layer is adapting newly assigned QoS out of 3GPP’s scope.

### 6.x.3 Information flows

Editor's Note: This clause will describe the information flow tables