**3GPP TSG-WG SA2 Meeting #149E e-meeting *S2-220xxxx***

**Elbonia, February 14th – 25th, 2022 (revision of S2-220xxxx)**

**Source: Huawei, HiSilicon**

**Title: New KI: Support for dynamic satellite backhaul**

**Document for: Approval**

**Agenda Item: 9.12**

**Work Item / Release: FS\_5GSATB / Rel-18**

*Abstract: a new KI on support for dynamic satellite backhaul is proposed.*

# 1. Introduction/Discussion

WT#1 in FS\_5GSATB SID (SP-211602) is as following:

*WT#1: Architecture enhancements for support of a backhaul with changing delay (e.g. brought by ISL in satellite networks or changed satellite backhaul on the UP path), and/or limited bandwidth in case of a gNB with satellite backhaul only (e.g., restricted by the maximum data rate of a satellite beam):*

*WT#1.1: Policy/QoS control enhancements based on the detected packet delivery latency and/or bandwidth of the satellite backhaul on the UP path;*

*WT#1.2: Exposure of backhaul information to AFs.*

Based on the work task, the new KI of support for dynamic satellite backhaul is proposed.

# 2. Text Proposal

It is proposed to capture the following changes vs. TR 23.700-28.

\* \* \* \* All new text \* \* \* \*

## 5.x Key Issue #X: Support for dynamic satellite backhaul

### 5.x.1 General description

In Rel-17, satellite backhaul based policy/QoS control was supported by considering satellite backhaul category, without considering the dynamic change of capabilities (e.g. latency and bandwidth) of a specific backhaul.

In some cases, the capabilities provided by the satellite backhaul can be changed/adjusted dynamically. For example, if inter-satellite links are used on the backhaul path, the delay and bandwidth of the backhaul may be impacted due to the traffic engineering on the links. Satellite backhaul category is not enough to describe such a changing satellite backhaul characteristics. Thus whether and how such dynamic change of satellite backhaul capability can impact the policy/QoS control of 5GS need to be investigated.

The following issues should be studied to support the dynamic satellite backhaul, including:

- How does the 5GC detect the latency of satellite backhaul on the UP path?

Note: Reusing mechanisms defined for existing QoS monitoring can be considered if possible.

- How does the 5GC detect the bandwidth of satellite backhaul on the UP path?

- Whether the satellite backhaul category should be extended to support dynamic satellite backhaul, e.g. inter-satellite link?

- Whether and how to extend exiting policy/QoS control to support dynamic satellite backhaul?

- Whether and how to expose the satellite backhaul information, e.g. latency and/or bandwidth, to the AF?

\* \* \* \* End of changes \* \* \* \*