**3GPP TSG-WG SA2 Meeting #159 *S2-2311383***

**Xiamen, October 9th – 13th, 2023 (revision of S2-2310941)**

**Source: Huawei, HiSilicon**

**Title: FS\_5GSAT\_ARCH\_Ph3 Architecture Assumptions**

**Document for: Approval**

**Agenda Item: 19.1**

**Work Item / Release: FS\_5GSAT\_ARCH\_Ph3 / Rel-19**

*Abstract: Architecture assumptions for FS\_5GSAT\_ARCH\_Ph3.*

# 1. Introduction/Discussion

In Rel-19 SAT\_Ph3 SID (SP-231199), new architecture objective for satellite access has been proposed which is different from transparent payload discussed in Rel-17 and Rel-18. In SID, it is proposed that eNB/gNB will be embedded on board, which should be considered as an architecture assumption.

# 2. Text Proposal

It is proposed to capture the following changes vs. TR 23.700-29.

\* \* \* \* First change (all new) \* \* \* \*

# 4. Architectural Assumptions and Principles

The following architecture assumptions are applied to the study:

- The 5GC architecture for satellite access for NR NTN as defined in TS 23.501 [2] is reused.

- The EPC architecture for satellite access for IoT NTN as defined in TS 23.401 [5] is reused.

- Impacts to UE, network functions and entities are minimised, and existing procedures and functionality is reused to support satellite operation.

- IoT NTN Store and Forward assumes eNB is on board.

Editor’s Note: Whether gNB onboard for support of store and forward depends on whether there is remaining time to study store and forward for NR NTN.

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- Store and forward assumes that the feeder link to the ground can be intermittent.

- NR-NTN UE-Satellite-UE communication assumes the gNB is on board.

- NR-NTN UE-Satellite-UE communications assumes a feeder link to the ground is always available (i.e. any satellite based 3GPP functionality can always have a connection to any 3GPP functionality based on the ground) for at least session establishment for the services, i.e. once a service is established the feeder link may not be available. The feeder link may be direct from a satellite to ground, or via other satellites using Inter-Satellite Links. If Inter-Satellite Links are used, then it assumed they act has a transport link and have no impact and are out of scope.

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