**3GPP TSG-WG SA2 Meeting #163 *S2-2406903***

**Jeju, KR, May 27th – 31st, 2024 (revision of S2-2406556)**

**Source: Huawei, HiSilicon**

**Title: KI#3 Conclusion: For UE-SAT-UE communication**

**Document for: Approval**

**Agenda Item: 19.1**

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

*Abstract: To reuse existing LI architecture, AGW should be onboard. In this release, only when two UEs are under the same satellite, the UE-SAT-UE communication will be enabled.*

# 1. Introduction/Discussion

Based on SA3-LI LS on LI considerations for UE-Satellite-UE communications, it is clear the requirement that LI functions need to be present along with their associated network functions on board a satellite.

Based on clause of 7.4.1 IMS High Level LI Architecture in TS 33.127, if only UL CL/L-PSA UPF deployed on satellite, some SA3-LI work needed to support the IMS LI as media traffic will not go through to AGW on ground. SA2 can start normative work with both UL CL/L-PSA UPF and AGW deployed on satellite. Whether SA2 can start normative work with only UL CL/L-PSA UPF on board depends on SA3-LI feedback.



Figure 7.4-1: EPS/5GS-Anchored IMS High Level LI Architecture

Considering the time limitation, we propose to only consider two UEs are under the same satellite case in this release. We also propose to assume the same SMF and P-CSCF will be used in this release.

# 2. Text Proposal

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

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

# 8 Conclusions

## 8.3 Conclusion for KI#3 UE-Satellite-UE Communication

SA2 starts normative work with both UL CL/L-PSA UPF and AGW deployed on satellite first. Whether SA2 can start normative work with only UL CL/L-PSA UPF on board depends on SA3-LI feedback.

[Assuming Nokia’s proposal is inserted here]

### 8.3.x UEs using the same satellite with regenerative-based satellite access

In case ULCL change is not properly performed, the following "Ground fallback" option can also be considered in the normative phase:

* When HANDOVER happens, the UE-SAT-UE communication is disabled and ground-based PSA UPF and AGW are used.
* When handover happens, the SMF notifies the P-CSCF (via PCF) to reselect the on ground AGW and the P-CSCF sends a re-invite message to the UE. The P-CSCF also notifies the SMF to remove the UL CL/BP/local PSA UPF onboard for the IMS PDU Session.

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