3GPP TSG SA WG2 Meeting SA2#162 S2-2404257

**April 15 – 19, 2024, Changsha, China**

**Title: [DRAFT] Reply LS on** **security of IP transport over satellite transport links (S3-240950 / S2-240390)**

**Response to: LS S3-240950 on security of IP transport over satellite transport links from SA3**

**Release: Rel-19**

**Work Item: 5GSAT\_Ph3\_ARCH**

**Source: Ericsson [to be: SA2]**

**To: SA3, RAN3**

**Cc:**

**Contact person: Stefan Rommer**

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**Attachment: none**

# 1 Overall description

SA2 thanks SA3 for the LS on security of IP transport over satellite transport links.

SA3 wrote:

SA3 is studying security and privacy aspects of 5G Satellite Access Phase 3 in Rel-19. 5G NTN regenerative payload on-board orbiting satellite communication is IP based. Feeder link and Inter-Satellite Link (ISL) are satellite transport links. The satellite transport links are not in scope of 3GPP. However, the IP transport allowing on-board 5G NTN payload to communicate with ground-based 3GPP network passes through these satellite transport links.

The regenerative NTN payload on-board orbiting satellite in a constellation operates in a dynamic environment due to satellite movement. SA3 is considering reusing network domain security as defined in TS 33.210 as a baseline to protect 3GPP system interfaces. However, fit for purpose effective security protection at the transport layer (e.g., DTLS) and at the network layer (e.g., IPsec) rely on underlying IP connectivity.

SA3 would like to seek feedback from SA2 on the architectural assumptions related to persistency, reliability, and availability of IP connectivity from satellite hosted 3GPP systems to ground-based 3GPP network in generic regenerative and UE-satellite-UE use cases.

SA2 would like to inform SA3 that the transport network aspects raised by SA3 are outside SA2 scope. Reliability of the transport network via satellite transport links (i.e., feeder and ISL) is a deployment matter and as such it is not in 3GPP scope. SA2 assumes however that there is IP connectivity between the gNB/eNB on-board the satellite and the Core Network on the ground, via the feeder link and possibly also via ISL. SA2 further assumes that during the time a satellite is serving a PLMN, feeder link switchover may take place at which the feeder link is changed from an old NTN Gateway to a new NTN Gateway.

SA2 assumes that the IP transport allowing on-board eNB/gNB to communicate with ground-based 3GPP core network has to be reliable and support the mechanisms for NG data transport defined in TS 38.414 and S1 data transport defined in TS 36.414. Therefore, SA2 sees no issue with reusing network domain security as defined in TS 33.210 as a baseline to protect 3GPP system interfaces.

SA2 would also like to point out that signalling transport and layer 1 specifications of N2 and S1 (including TSs 38.414 and 36.414) are in the scope of RAN3. SA2 would therefore like to give RAN3 the opportunity to provide feedback on SA3's LS.

# 2 Actions

**To SA3**

**ACTION:** SA2 kindly asks SA3 to take the above information into account

**To RAN3**

**ACTION:** SA2 kindly asks RAN3 to provide feedback, if any.

# 3 Dates of next TSG SA WG2 meetings

SA2 WG Meeting #163 April 27 – May 1, 2024 Jeju, Korea

SA2 WG Meeting #164 August 19 – 23, 2024 Maastricht, The Netherlands