**3GPP TSG-SA3 Meeting #108Adhoc-e draft\_S3-222476-r2**

**e-meeting, 10th – 14th October, 2022 merger of S3-222476, S3-222867, S3-222581**

**Source:**  **Huawei, HiSilicon**

**Title:** **key issue on coverage information protection with discontinuous satellite coverage**

**Document for: Approval**

**Agenda Item: 5.25**

# 1 Decision/action requested

***It is proposed to approve the change described in this document.***

# 2 References

[1] 3GPP TR 23.700-28.

# 3 Rationale

As defined in TS 23.700-28 [1], the mobility management enhancement and power saving enhancement for UE in discontinuous coverage are discussed in SA2. Security work is required to analysis whether additional work is needed for protecting enhanced architecture supporting discontinuous coverage with satellite access.

# 4 Detailed proposal

\*\*\* 1st CHANGE \*\*\*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[xx] 3GPP TR 23.700-28: " Study on Integration of satellite components in the 5G architecture; Phase 2".

\*\*\* END OF 1st CHANGE\*\*\*

\*\*\* 2nd CHANGE \*\*\*

## 5.X Key Issue #X: < coverage information protection with discontinuous satellite coverage >

### 5.X.1 Key issue details

In 3GPP 23.700-28[xx], coverage information (e.g. ephemeris data) is to be provided to UE or CN to support discontinuous satellite coverage. Coverage information may be provided relying on broadcast of satellite ephemeris data. SIB protection investigation is performed in the study on enhancement against false base stations. As alternatives, control plane or user plane may also be used for sending the coverage information. For other solutions assuming the CN (e.g. an MME or AMF) has access to coverage information, the CN knows when UEs will be in or out of coverage and provides the paramters (e.g. an TAU timer, active time) to UEs to support mobility and power saving enhancement.

Editor’s note: the description will be updated based on the conclusion in SA2.

Therefore, how the UE verifies the authenticity and integrity of the satellite coverage information, probably with assistance of the network, needs further studied.

### 5.X.2 Security threats

If the information (e.g. coverage information or mobility parameters or power saving parameters) is modified by attackers or the source of satellite coverage information is not authorized before provisioning it to the UE, the UE may determines to remain in no service and enter power saving mode when in coverage of satellite while wake up when out of coverage. There would be no service available for UE.

### 5.X.3 Potential security requirements

TBA

\*\*\* END OF 2nd CHANGE\*\*\*