**3GPP TSG-SA3 Meeting #100bis-e *S3-202474***

**e-meeting, 12 -16 October 2020** Revision of S3-20xxxx

**Source: Huawei, HiSilicon, China Telecom,CATT, Futurewei**

**Title: New key issue on Security enhancement to disaggregated gNB architecture**

**Document for: Approval**

**Agenda Item: 2.13**

# 1 Decision/action requested

***Approve this contribution adding a new KI in TR 33.840***

# 2 References

NA

# 3 Rationale

This key issue is proposed to study whether the security enhancement can be achieved without impact on other nodes (i.e. UE and 5GC).

# 4 Detailed proposal

\*\*\* BEGINNING OF CHANGES \*\*\*

## 5.X Key Issue #X: Security enhancement to disaggregated gNB architecture

### 5.X.1 Key issue details

Current security scheme does not distinguish whether a gNB is disaggregated gNB architecture or not. This means that from RAN point of view, there is no different security feature when different CU-UPs are used for different services. Considering the reality that a gNB can be designed based on disaggregated gNB architecture and TS 38.401[xx] has specified the interaction between gNB-CU-CP and gNB-CU-UP, this architecture can be used as a basis architecture together with what TR 38.823[xx] proposed.

Per TS33.501, the security requirements on gNB shall apply to all types of gNB. For CU-CP and CU-UP split scenario, each CU-UP in one gNB are not required to support same security capability/ algorithm priority. As described in TR38.823[xx], the CU-UPs could be configured with different security configuration irrespective of the location CU-UPs deployed. Based on the existing architecture for disaggregated gNB, the gNB-CU-CP selects the appropriate gNB-CU-UP(s) for the requested services for the UE. Therefore, it is need to support a case that the UE is connected to more than one gNB-CU-UPs providing different security algorithm or algorithm priority or security configuration simultaneously.

For the new gNB split architecture proposed by RAN3, there is no clear security mechanism description for these multi-CU-UPs scenario in current TS 33.501[yy].

From security perspective, it needs to consider whether different UP connections are protected by different security method.

### 5.X.2 Security threats

Not applicable.

### 5.X.3 Potential security requirements

5GS should support different user plane security protection options in different gNB-CU-Ups.

\*\*\*END OF CHANGES\*\*\*