**3GPP TSG-SA3 Meeting #107Adhoc -e S3-221397-r1**

**e-meeting, 27th June – 1st July, 2022**

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

**Title:** **Key issue on security handling in MOCN network sharing scenario**

**Document for: Approval**

**Agenda Item: 5.23**

# 1 Decision/action requested

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

# 2 References

[1] 3GPP TR 23.700-47: " Study on architectural enhancements for 5G multicast-broadcast services ".

# 3 Rationale

In the SA2’s study on MBS phase 2[1], the efficiency of resource utilization for the same broadcast content to be provided to 5G MOCN network sharing scenarios is currently being studied. The impact to efficient resource utilization needs analysis.

# 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*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[xx] 3GPP TR 23.700-47: "Study on architectural enhancements for 5G multicast-broadcast services ".

[yy] 3GPP TS 33.501: "Security architecture and procedures for 5G system".\*\*\* END OF 1st CHANGE\*\*\*

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

## 5.X Key issue: security handling in MOCN network sharing scenario

### 5.X.1 Key issue details

In MOCN network sharing scenario, multiple CNs are connected to the same NG-RAN. As documented in TR 23.700-47 [xx], the efficiency of resource utilization for the same broadcast content is studied. For the same broadcast content, the AF will set up multiple broadcast MBS sessions towards those CNs. Each CN will deliver the same content towards the same shared NG-RAN node. The NG-RAN node only delivers one copy of the broadcast content over the air.

As specified in clause W.4 of TS 33.501 [yy], user-plane procedure is applicable for broadcast service. MBSTF may protect the traffic transmission with encryption and/or integrity. The security protection of MBS traffic is supported in service layer. In MOCN network sharing scenario, the multiple CNs may enable their own security towards the content. The UE will receive the MBS keys from their PLMN. However, the NR-RAN broadcasts only one copy of the content. The security impact needs analysis if security are activated for the same content to be provided to 5G MOCN network sharing scenarios. For example, UEs from PLMN1 may be unable to decipher the content if the NG-RAN node chooses to broadcast the ciphered content from the CN of PLMN2.

### 5.X.2 Security threats

If the content is protected using different CN-specific keys, then UEs not having the key will fail to properly process the content, should the network send only one of the copies.

### 5.X.3 Potential security requirements

Study whether and how the 5G system should provide the means to protect the traffic in MOCN network sharing scenario.

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