**3GPP TSG-SA3 Meeting #101-e *S3-202935***

**e-meeting, 09-20 November 2020** Revision of S3-XXXX

**Source: Intel**

**Title: Key Issue for Busy Indication**

**Document for: Approval**

**Agenda Item: 5.19**

1 Decision/action requested

***It is proposed to approve the Key issue for busy indication in MUSIM TR 33XXX.***

2 References

[1] 3GPP TR 23.761: " Study on system enablers for devices having multiple Universal Subscriber Identity Modules (USIM)"

3 Rationale

pCR Proposes a new key issue related to security of Busy indication.

4 Detailed proposal

**\*\*\*\*START OF CHANGES \*\*\***

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".

[YY] 3GPP TR 23.761: " Study on system enablers for devices having multiple Universal Subscriber Identity Modules (USIM)"

**\*\*\*\*NEXT CHANGES \*\*\***

5.X Key issue #X: Integrity Protection of Paging Response (Busy Indication)

5.X.1 Key issue details

In TR 23.761 [YY], a Multi-USIM device with concurrent registrations over 3GPP RAT associated with multiple USIMs procedures is discussed. A multi-USIM device can efficiently perform some activity (e.g., listen to paging) in a system while communicating in another system. The network sends a paging request to notify the UE of a pending MT service. UE may monitor periodically for paging from another system. UE responds to the page (either by accepting the page request or by sending a busy indication), which allows the network to save paging resources due to not escalating the page across a larger area.

The Busy indication in TR 23.761 is described as a NAS message. In their LS reply o SA2, SA3 stated that the busy indication can also be sent as RRC message if the UE is in RRC\_Inactive state.

Editor’s Note: The need for a busy indication is dependent on SA2’s decision to progress multiple paging causes.

5.X.2 Threats

If the Busy indication message is modified or replayed by attackers, the network may be spoofed to believe the UE appears busy and not respond to paging, causing Dos attack on UE.

5.X.3 Potential security requirements

3GPP system shall support the integrity and replay protection for a busy indication message.

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