**3GPP** **TSG SA WG3 Meeting 106-e draft\_S3-220152-r1**

**Electronic meeting, 14-25 February 2022**

**Title: Reply LS on Security of Small data transmission**

**Response to: LS S3-210051(R2-2201983) LS on Security for Small Data Transmission**

**Release: Rel-17**

**Work Item: NR\_SmallData\_INACTIVE-Core**

**Source: SA3**

**To:** **RAN2**

**Cc:**

**Contact person: Abhijeet Kolekar**

 **abhijeet.kolekar@intel.com**

**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**Attachments:** none

# 1 Overall description

SA3 thanks RAN2 for their LS on Small data transmission.

SA3 discussed the LS from RAN2 and would like to provide the following response on the exemplary call flow detailed in the RAN2 LS (S3-220051/R2-2201983):

1. Two nodes (gNBs) using a key (KRRCint\_1) to verify RRC messages (at step 12 & 13 in serving gNB and at step 18 in last serving gNB) is not acceptable from security point of view. RAN2 need to update the solution to avoid use of same key at different entities.
2. Use of same I-RNTI in multiple RRC messages might pose security threat (e.g., tracking of UE). SA3 need to study further on the severity of the threat and address it in the future, if RAN2 agrees for the solution mentioned in the RAN2 LS (S3-220051/R2-2201983).
3. The gNB shall perform a vertical key derivation in case it has an unused {NH, NCC}, in order to follow the forward security principle (c.f., S3-182541). RAN2 need to update the solution to use vertical key derivation in case gNB has an unused {NH, NCC}.
4. There is SA3 specification work and may need to have security solution, if RAN2 agrees for the solution mentioned in the RAN2 LS (S3-220051/R2-2201983).

The exemplary call flow detailed in the RAN2 LS (S3-220051/R2-2201983) is feasible from security point of view, if the above mentioned security concerns a) and c) are addressed by RAN2.

# 2 Actions

**To RAN2**

**ACTION:** 3GPP TSG SA WG3 asks RAN2 to take the above feedback into account and reply to SA3.

# 3 Dates of next TSG SA WG3 meetings

TSG SA WG3 Meeting 106-Bis-e 04-08 April 2022

TSG SA WG3 Meeting 107-e 27 June-01 July 2022