3GPP TSG-RAN WG4 Meeting #98-bis-e R4-210xxxx

Electronic Meeting, 12th Apr. - 20th Apr., 2021

**Title: LS reply on NTN UL time and frequency synchronization requirements**

**Response to: R1-2102263, LS on NTN UL time and frequency synchronization requirements**

**Release: Rel-17**

**Work Item: NR\_NTN\_solutions**

**Source:** **RAN4**

**To:** **RAN1**

**Cc:**

**Contact person: Yuexia Song**

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

**Attachments:** -

# 1 Overall description

RAN4 would like to thank RAN1 for the LS on NTN UL time and frequency synchronization requirements. During RAN4#98bis-e meeting, RAN4 had extensive discussion on these 2 issues and would like to provide the following feedbacks to RAN1.

Regarding question 2 on frequency synchronization, the following UE RF frequency error requirement is concluded in RAN4 RF for both initial access and RRC connected state:

* The UE modulated carrier frequency shall be accurate to within ±0.1 ppm observed over a period of 1 ms of cumulated measurement intervals compared to the carrier frequency received from the NR gNB.
* Note: The gNB refers to RAN3 NTN architecture.

Regarding question 1 on time synchronization, RAN4 discussion is still on-going. Additional LS will be sent once there is an agreement in RAN4 RRM.

# 2 Actions

**To RAN1**

**ACTION:** RAN4 respectfully asks RAN1 to take the above information into consideration in the future work.

# 3 Dates of next TSG-RAN WG4 meetings

TSG-RAN WG4 Meeting #99-e May. 19 - May. 27, 2021 Online

TSG-RAN WG4 Meeting #100-e Aug. 23 - Aug. 27, 2021 Online