3GPP TSG-RAN WG4 Meeting # 113 R4-2419788

Orlando, US, 18th – 22nd November, 2024

**Title: LS on simultaneous operation between GNSS and NR NTN**

**Response to:**

**Release:** Release 19

**Work Item:** NR\_NTN\_enh-Core

**Source:** RAN4

**To:** RAN2

**Cc:** RAN1

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**Attachments:**

# Overall description

For some UEs with limited form factor, e.g handheld UE, RAN4 identified that the there is a simultaneous operation risk between NR NTN transmission and GNSS receiving due to the GNSS receiver blocking effects. It’s observed that successful GNSS reception cannot always be guaranteed, the problem being worst when the nearby frequency band, e.g. n254 and n255, is transmitting UL signal. To avoid any field performance issues both for NR NTN RedCap as well as NR NTN non-RedCap UEs, a reliable in-device co-existence solution needs to be available in real deployments.

RAN4 therefore respectfully requests RAN2 to consider the solution(s) to ensure that NR NTN UEs can rely on an in-device co-existence solution between GNSS reception and NR NTN UE UL transmissions. As an example and not limiting the solution space, UE could need e.g. UL gaps or TDM pattern to limit Tx duty cycle for GNSS reception in the NR UL transmissions for a few seconds and then continue normal operations. The candidate values for the following parameters should be derived based on the UE GNSS implementation.

1) The candidate values for the cycle length can be 40s, 50s, 60s, 70s, 80s and 90s.

2) The candidate values for the active duration can be a few seconds.

# Actions

**To RAN WG2:**

**ACTION:** RAN4 respectfully requests RAN2 to consider the potential solution(s) to ensure that NR NTN UEs can rely on an in-device co-existence solution for GNSS co-existence with sufficient gaps in NR UL transmissions considering different UE/GNSS implementations, as described above.

# Dates of Next TSG-RAN WG1

TSG RAN WG4 Meeting #114 17th – 21nd February, 2025 Athens, Greece

TSG RAN WG4 Meeting #114bis 07th – 11th April, 2025 China