3GPP TSG RAN WG 4 Meeting #113 TDoc <TDocNumber>

Orlando, USA, 18th Nov 2024 – 22nd Nov 2024

**Title: LS on Ku band numerology**

**Response to: None**

**Release: Rel-19**

**Work Item: NR\_NTN\_Ku\_bands-Core**

**Source: RAN WG4**

**To: RAN WG1, RAN WG2**

**Cc: RAN**

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

**Attachments:** **None**

# 1 Overall description

RAN WG4 has a checkpoint at RAN #106 for the WI in RP-241690 as follows:

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| * Priority 1: for all ITU regions, define Ku band #1a and #1b for the downlink block and uplink block B to enable the future possibility of supporting satellite services in 125 MHz (UL) and 250 MHz (DL) aggregated bandwidths based on existing channel bandwidths. Potential approaches for achieving this shall be studied, from which one shall be selected including but not limited to:
	+ Ku band #1a and #1b as FR1-NTN supporting 20 MHz, 35 MHz, 50 MHz, 70 MHz and 100 MHz channel bandwidths with 30 kHz subcarrier spacing
	+ Ku band #1a and #1b as FR2-NTN supporting 50 MHz, 100 MHz, 200 MHz, 400 MHz (120kHz SCS only) channel bandwidths with 120 kHz subcarrier spacing
* **RAN4 will select which one of the above approaches for DL and UL will be pursued by RAN #106.**
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RAN WG4 has determined that both FR1 and FR2 numerology are feasible for Ku band, however it has not been possible to down select to one option due to the broad range use cases which favour one numerology over the other. At RAN #104, the possibility to mix FR1 numerology and FR2 numerology in one band definition was considered out of scope of a spectrum only WI, and in any case may have unintended consequences.

To resolve the situation, RAN WG4 [has decided] to specify two sets of bands for the exact same frequency range, one for FR1 numerology and the other for FR2 numerology. These bands would operate independently and coordination between them would use existing inter-operator co-existence mechanisms specified outside 3GPP.

RAN WG4 would like to ask RAN WG1 and RAN WG2 if they see any reason why such a definition would not be possible. In the meantime, RAN WG4 will use the two sets of bands approach as a working assumption so as not to delay the work.

# 2 Actions

**To RAN WG1 and RAN WG2**

**ACTION:** RAN WG4 respectively asks RAN WG1 and RAN WG2 if they see any reason why two sets of Ku bands, one using FR1 numerology and the other using FR2 numerology cannot be defined

# 3 Dates of next TSG RAN WG 4 meetings

RAN WG4 #114 17 – 21 Feb 2025 Athens, Greece

RAN WG4 #114bis 7 – 11 Apr 2025 TBD, China