

**3GPP TSG RAN#104**

June 17 – 20, 2024

Shanghai, China

**RP-241366**

Agenda Item 9.11

# **[RAN-led] Study on Complementary Reuse of Terrestrial spectrum in Satellite deployments**

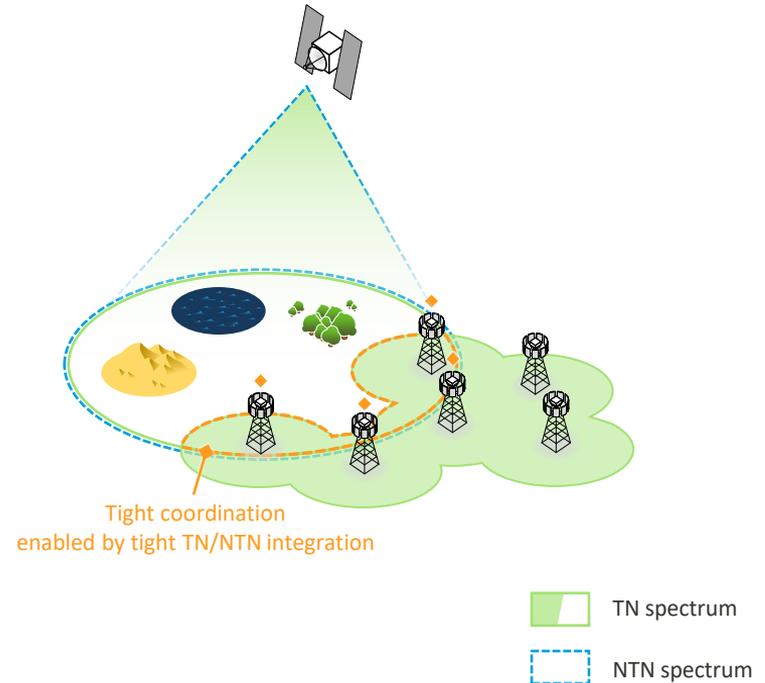
**MediaTek Inc.**

- With the convergence of terrestrial and satellite technologies under a common platform, industry stakeholders have become open to the possibility to allow spectrum allocated for terrestrial use to be used in a supplementary manner by satellite deployments in the same country (see [1]).
- WRC-23 (Resolution 253) in [2] also agreed to set the following agenda item for WRC-27:
  - 1.13: to consider studies on possible new allocations to the mobile-satellite service for direct connectivity between space stations and International Mobile Telecommunications (IMT) user equipment to complement terrestrial IMT network coverage
- With LTE/NR catering for both terrestrial and satellite access, and with technical expertise across both deployment domains, 3GPP is in a unique position to identify:
  - How terrestrial spectrum could be reused in a complementary manner for satellite deployments
  - The potential challenges to consider, and the ability to enhance 3GPP technology to help to overcome any such challenges and enhance the converged connectivity experience
- Therefore, we propose a RAN Plenary-led Study Item to allow 3GPP to take a first step in investigating and documenting the above.

# Motivation

[2/2]

- Reuse of TN spectrum in NTN deployments allows
  - Growth of the NTN ecosystem through increasing the spectrum capacity available for NTN users
  - Adding value to TN and NTN stakeholders as well as to end users e.g. consumers, verticals, etc. by
    - Allowing TN operators to *fully* exploit their spectrum assets in areas where traditional TN deployment is otherwise not cost-effective
    - Augmenting the service availability and QoE over NTN via higher capacity (i.e. NTN spectrum and TN spectrum)



# Proposal

**We propose a RAN-led study of the possibility to reuse *terrestrial* spectrum in Satellite deployments in a complementary manner, *in geographical areas where terrestrial connectivity for this spectrum is not available*, with initial focus on FR1 spectrum, covering the following aspects [RAN]:**

- 1) Outline the current regulatory status & ongoing activities [RAN]
- 2) Identify the relevant operating scenarios, technical benefits and challenges [RAN]
- 3) Highlight any potential techniques that may assist such operation [RAN]

The output of the study is to be documented in a TSG-RAN level Technical Report, with any more detailed technical work being addressed in a further WG study item.

# References

- [1] FCC 23-22: NOTICE OF PROPOSED RULEMAKING, FCC, March 17, 2023 ([Link](#), [Link](#))
- [2] Resolution 253 (WRC-23), ITU-R, December 2023 ([Link](#))

**Thank you!**