

# NTN & Satellite in 3GPP Releases 17 & 18

The Connected World Series

**Space + Terrestrial – the IoT Connection**

Virtual Conference - October 7<sup>th</sup>, 2021

***ECHOSTAR***<sup>®</sup>

October 4, 2021

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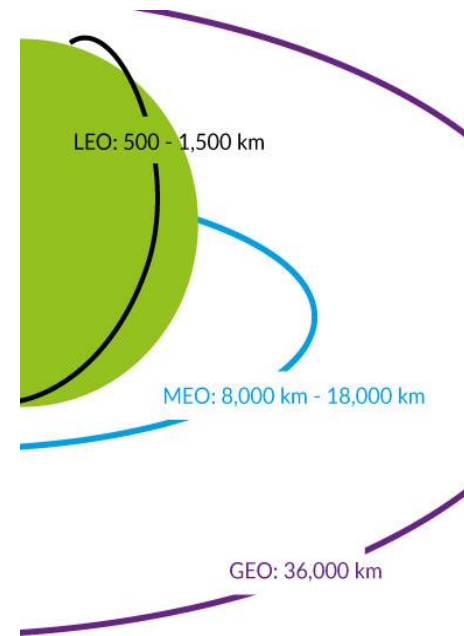
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**A premier global provider of satellite communication solutions – through its business segments**

- **EchoStar Satellite Services**, a satellite owner/operator, provides satellite communications infrastructure and services to media and broadcast organizations, enterprise customers and U.S. Government and military service providers
- **Hughes Network Systems** is the global leader in broadband satellite technology and services, delivering innovative solutions to home, office, large enterprises and governments worldwide
- **EchoStar Mobile** operates a mobile satellite network with complementary ground component providing secure, reliable and cost-effective mobile connectivity services to businesses across Europe, North Sea and Mediterranean Sea

# NTN & Satellite in 3GPP Releases 17

- **The Rel-17 NTN work items** are supported by a wide range of vendors (terminal, chipset, network), as well as service providers from mobile, space industries, and vertical user groups
- **The normative phase** includes adaptation to the physical & access layers, RAN architecture, radio resource management, and RF requirements for LEO, MEO and GEO orbits
- **The focus** is on transparent payload architecture with FDD systems where all UEs are assumed to have GNSS capabilities



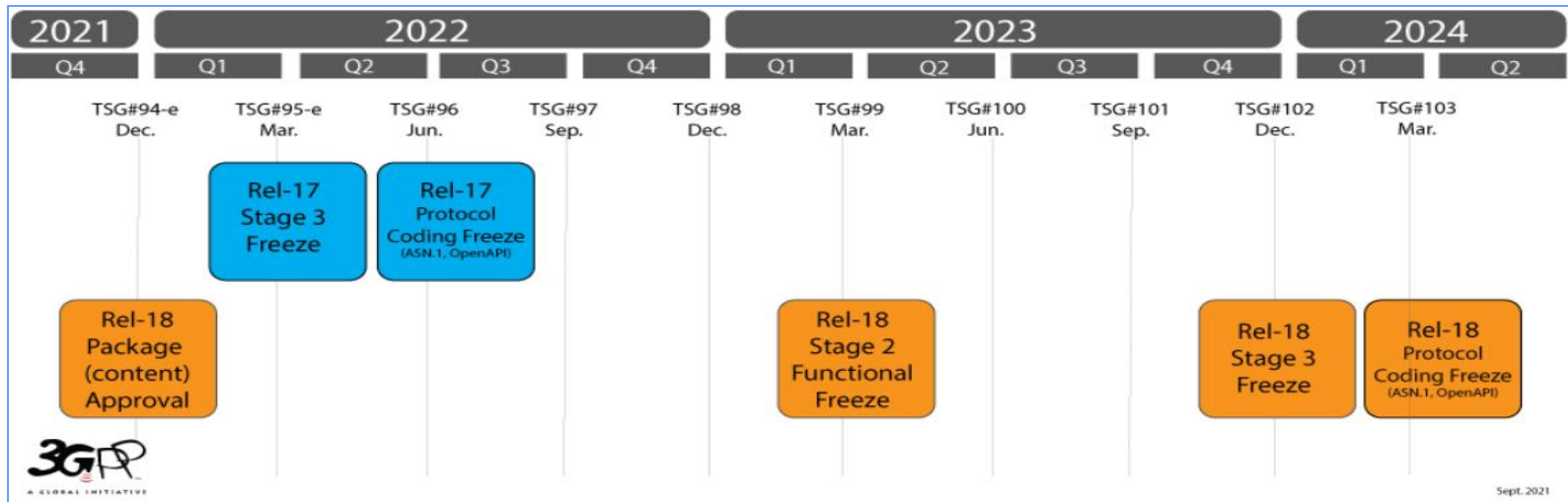
# Exciting Progress in Release 17

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- **The Rel-17 NTN and Satellite** work items in Technical Specification Group (TSG) RAN and TSG SA are progressing towards satellite inclusion in 3GPP technical specifications
- **With an expected completion date of March 2022**, the 3GPP Rel-17 specifications will support New Radio (NR) based satellite access in FR1 bands serving handheld devices for global service continuity
- **Equally exciting**, the 3GPP Rel-17 specification will support NB-IoT and eMTC based satellite access to address massive Internet of Things (IoT) use cases in agriculture, transport, logistics and many more

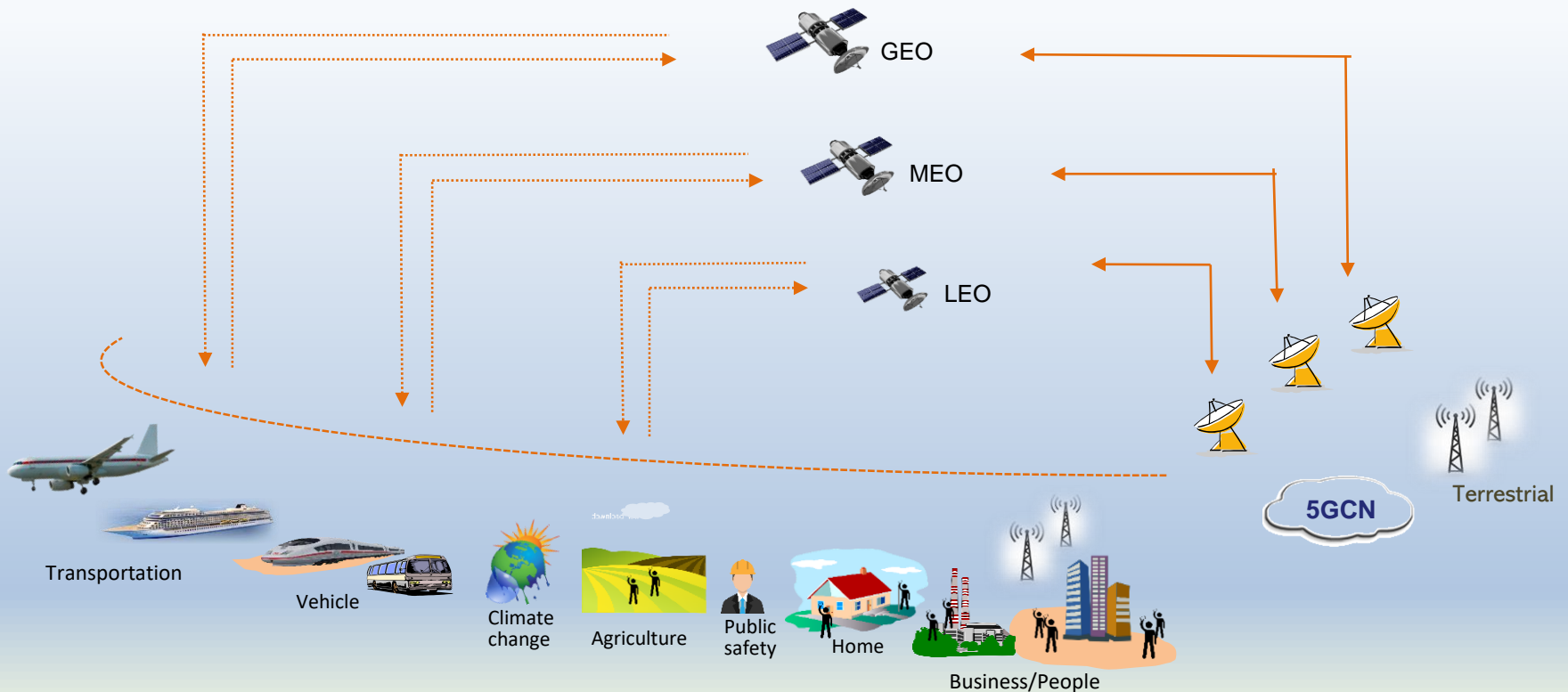


# Release 18



- **Looking ahead,** NTN stakeholders began discussions at 3GPP Rel-18 June workshop and are working towards consensus on necessary enhancements for both NR-NTN and IoT-NTN
- **The goal for NTN in Rel-18** is to further optimize satellite access performance, address new bands with specific regulatory requirements, and support new capabilities/services as 5G evolution continues

# The need for Seamless Connectivity



Full integration of satellite with 5G ecosystem will open new market opportunities for satellite solutions – **bringing 5G users worldwide all the benefits of seamless global communications**

# Thank You

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