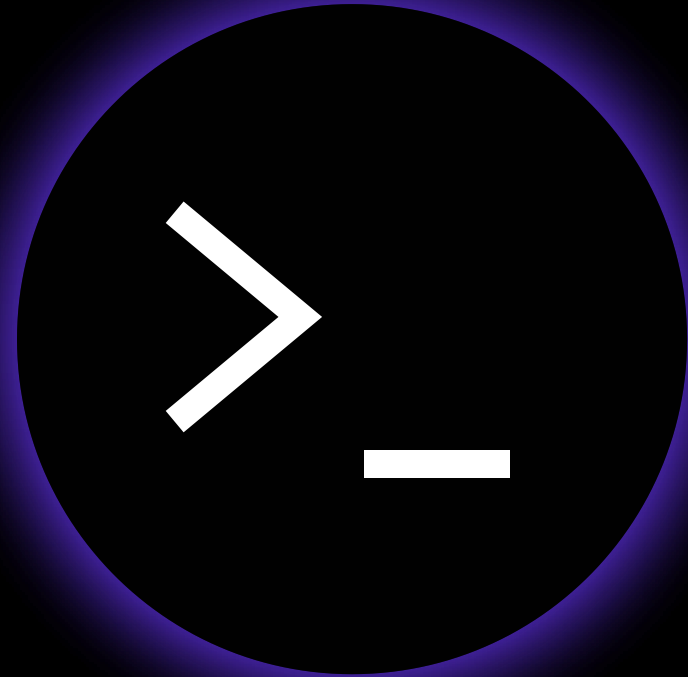


Unleashing 5G NTN Satellite Communications through Increased Space-based Processing

Eric Anden,
Head of Communication Products,
Ramon.Space





5G NTN is happening...

Ecosystems are maturing

October 2019
3GPP Release 15 includes study for 5G
NTN specifications

January 2023
3GPP Release 17 includes 5G NTN
Specifications

August 2022
T-Mobile and SpaceX
announce D2D
partnership

February 2024
MSSA Announces D2D
industry association

September 2023
AST SpaceMobile Announces 1st direct-to-cell 5G Connection

Ramon.Space 5G base station (gNB) lab
demonstration

August 2024
Skylo partners with
Google Pixel,
Qualcomm,
Samsung,
Verizon

November 2023
LM announces 5G.MIL base station demonstration

November 2023
Ramon.Space 5G base station (gNB)
demonstration at Satellite 2024

September 2024
AST SpaceMobile
launches 5 D2D 5G
satellites

October 2024
Ramon.Space and Radisys
announce 5G NTN
partnership





5G NTN – So What?

Why is 5G NTN better than existing SATCOM solutions?

Significantly larger total market size available to telecom and satellite operators

- Enabling increased access to existing 5G terrestrial networks via satellites

Cost reduction

- Leveraging 5G terrestrial eco-system and standards reduces high costs of SATCOM ground infrastructure

Greater communication network capacity

- Built-in dynamic resource allocation enables simultaneous multi-user service (MIMO)

Satellite communication standardization

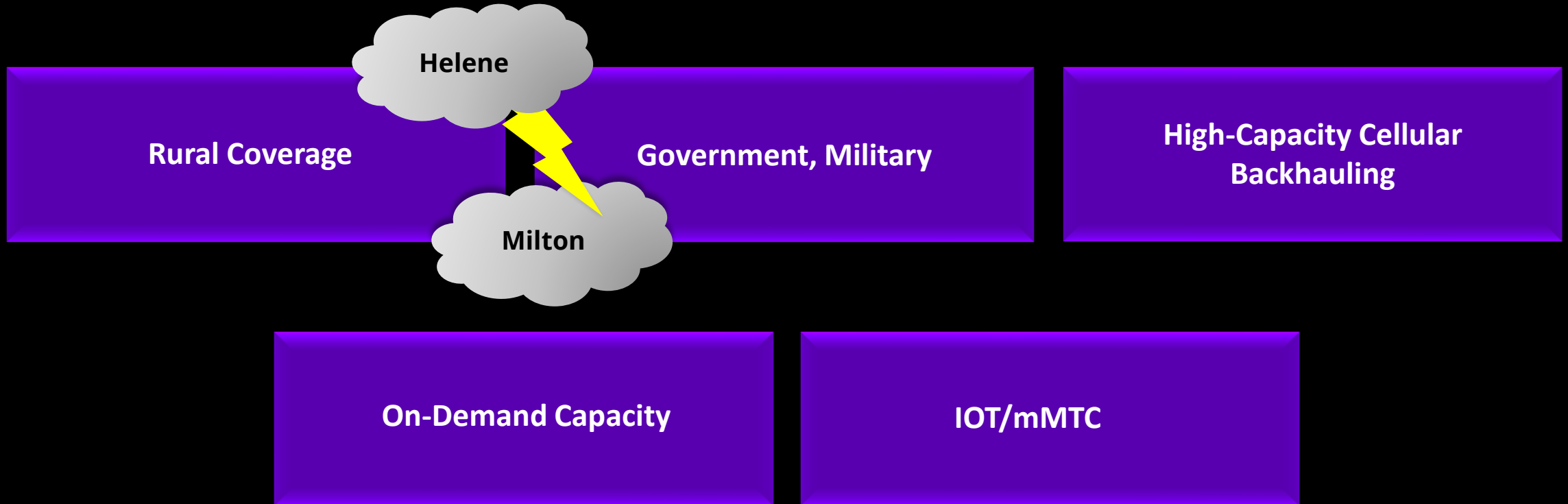
- 5G NTN allows for a standard communication protocol allowing for roaming between operators

Higher security

- 5G has inherent security features such as secured authentication and encryption



5G NTN Use Cases



> 5G NTN Market Demands

Space Communications Market requires advanced space on-board processing for 5G NTN capabilities

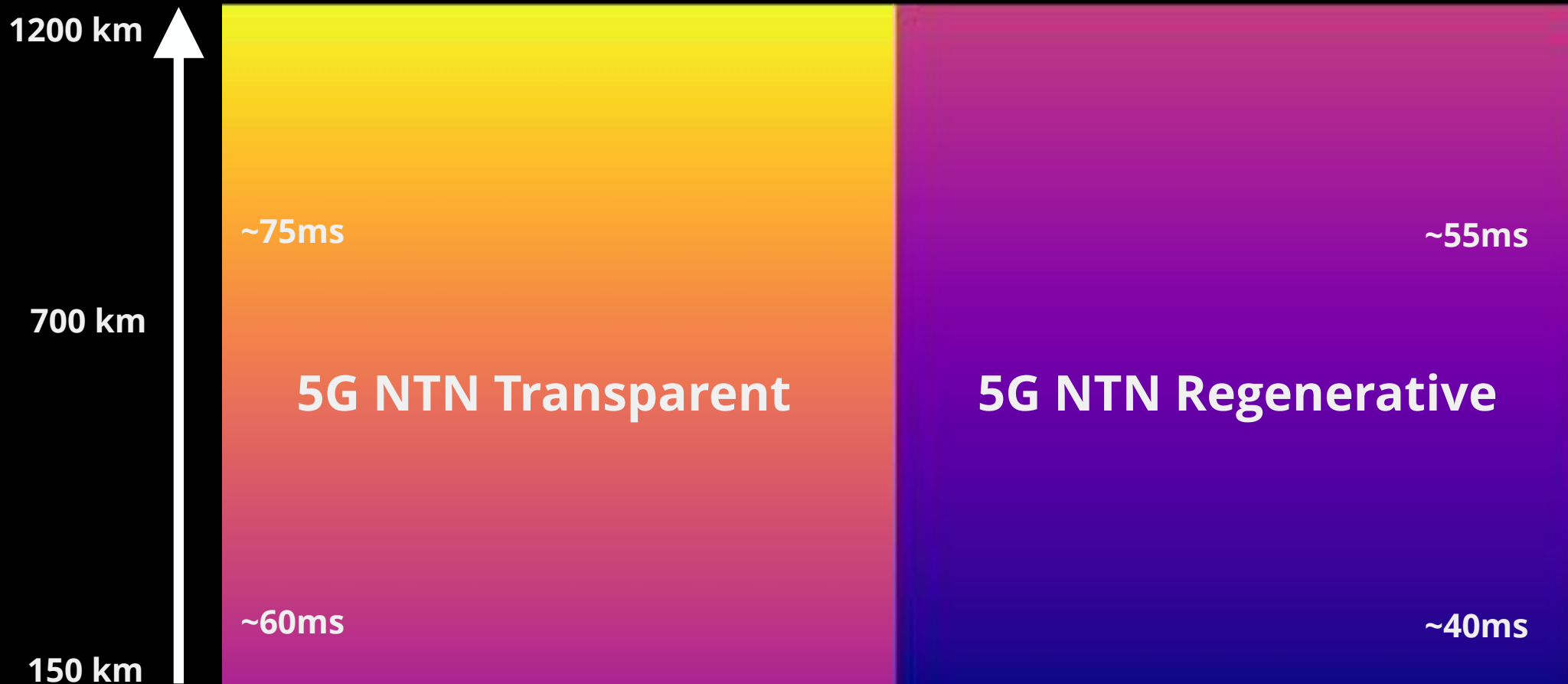
- High performance per watt
- IP integration with ecosystem partners
- Transparent and Regenerative Processing
- Processing intensive 5G use cases and applications

Ramon.Space NuComm on-board communications processors are ideal for processing intensive 5G NTN applications:

- SW-defined and reconfigurable on-orbit allows for upgradability for future 3GPP releases
- Scalable and Modular solutions to meet varying demand (IoT to eMBB)



>_ Regenerative Processing Reduces Latency for 5G NTN Links



Thank you

