ADVANCES IN LEO SATELLITE MONITORING AND QOS FOR DIRECT TO CELL

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ROHDE&SCHWARZ
Make ideas real

WHO ARE WE?

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Product Manager Spectrum Monitoring

Uwe Baeder

Director International Relations

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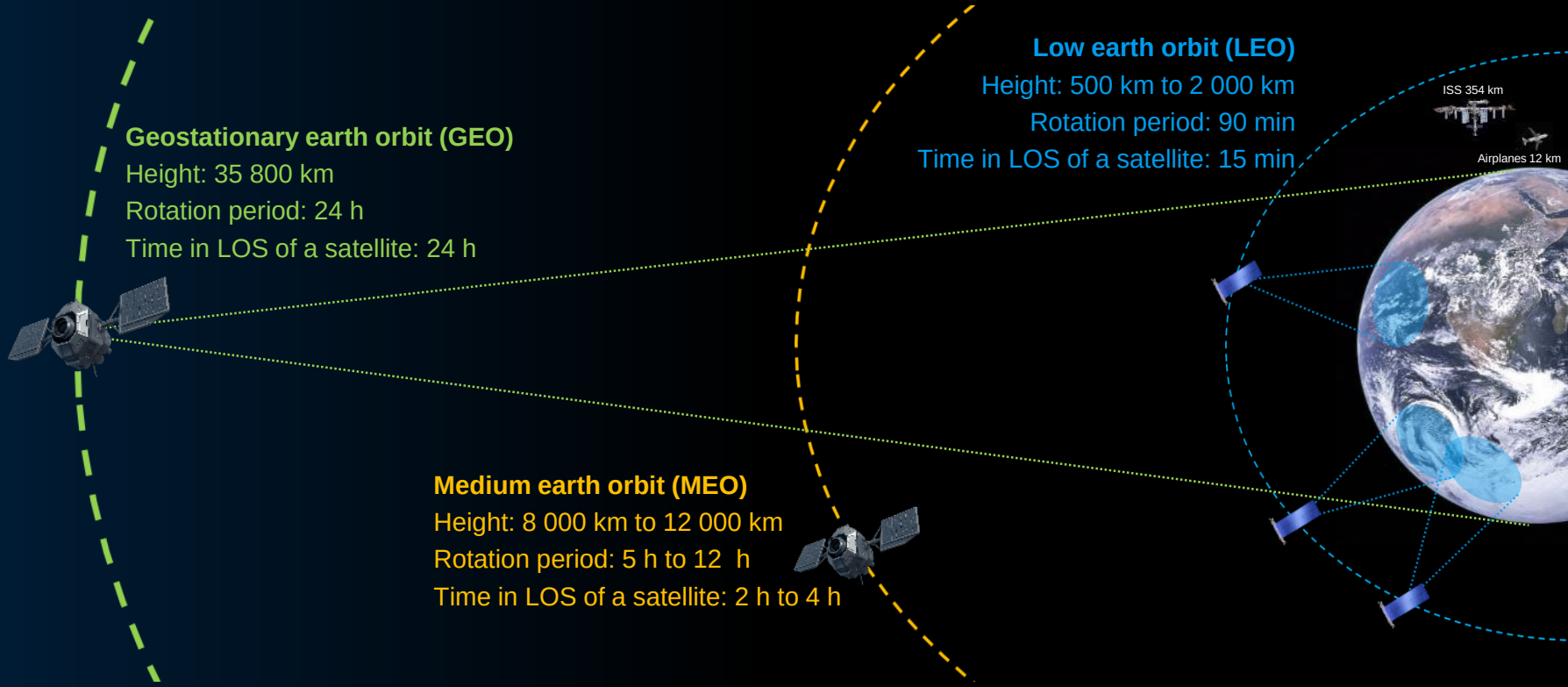
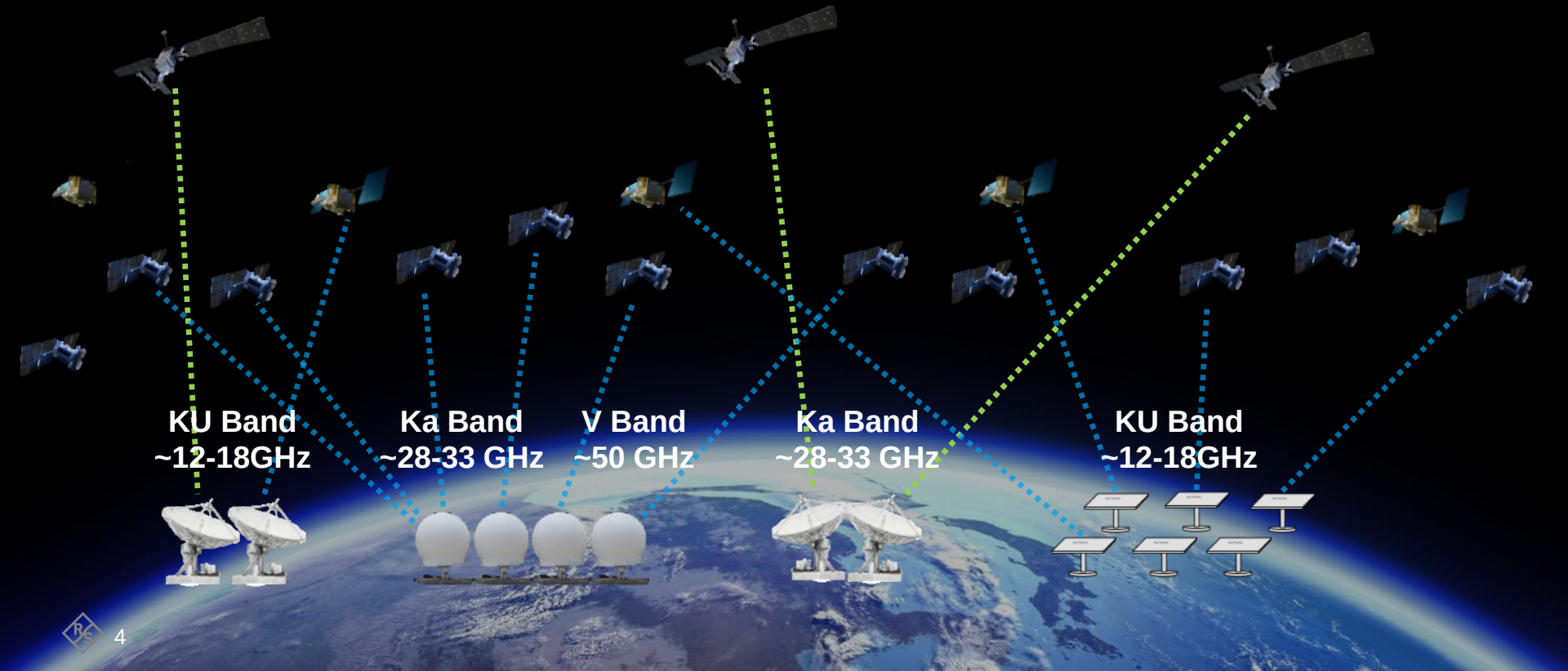
Technical Sales Satellite Intelligence

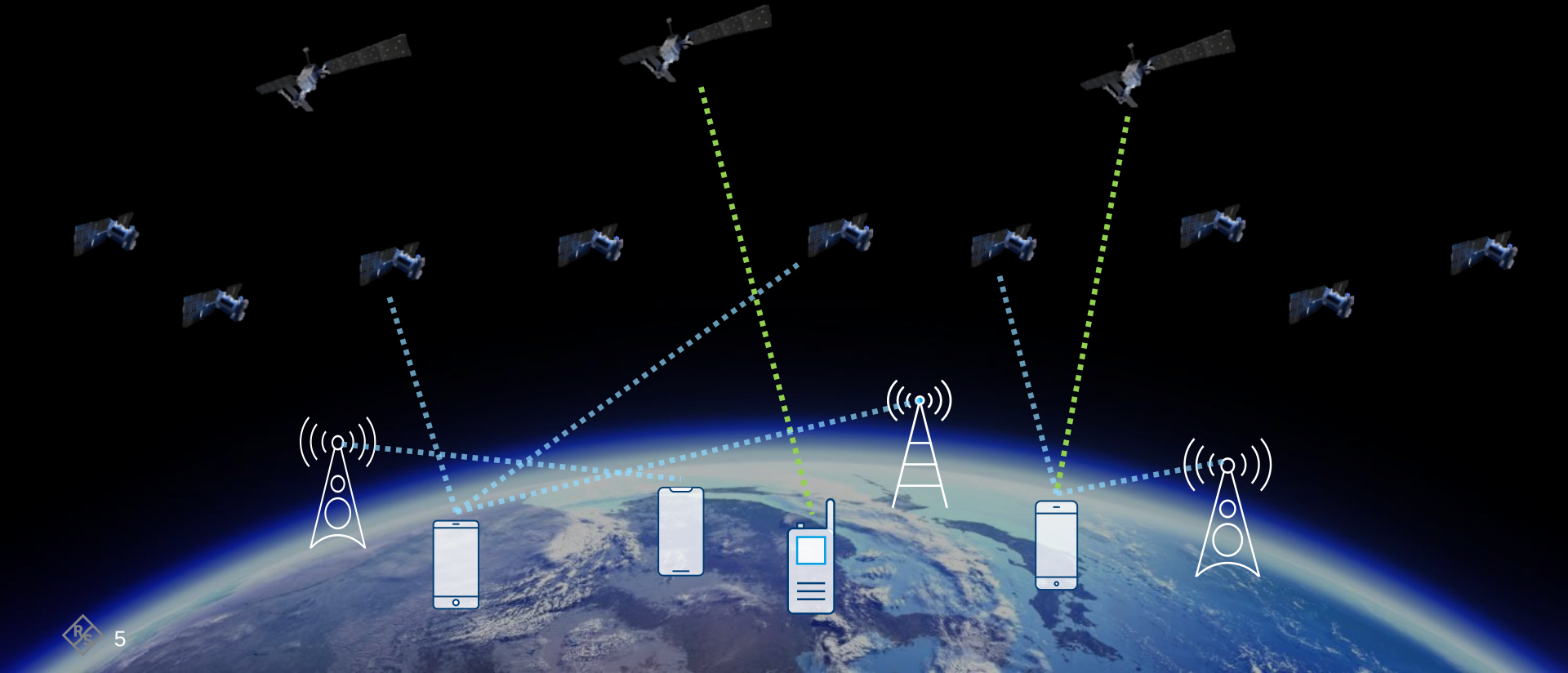
WHAT IS THE RELEVANCE OF LEO MONITORING?



SPACE IS GETTING MORE AND MORE CROWDED WITH COMPETING SYSTEMS

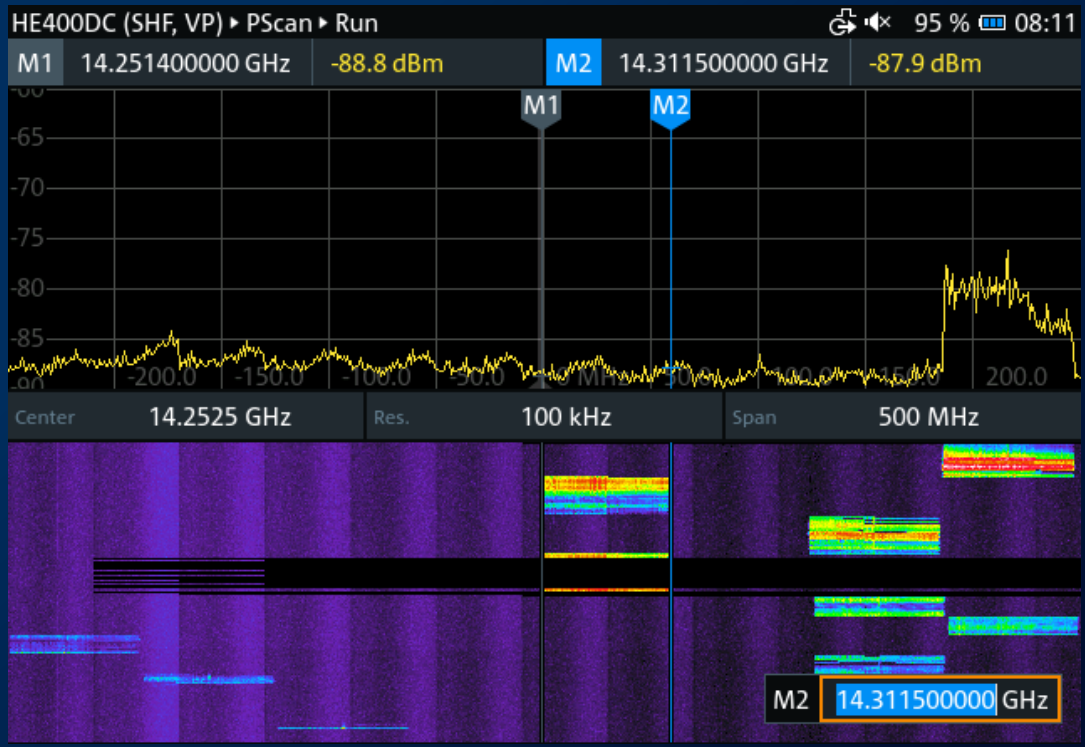


NON-TERRESTRIAL DIRECT TO CELL CONNECTIVITY IS GAINING RELEVANCE



CASE STUDY: TERRESTRIAL INTERFERENCE HUNTING OF STARLINK TERMINALS

- Uplink channel with 60 MHz BW, “hopping” on fixed frequencies
- Homing in with PR200 and HE400DC on one uplink channel
- Direct LoS recommended for most reliable signal reception

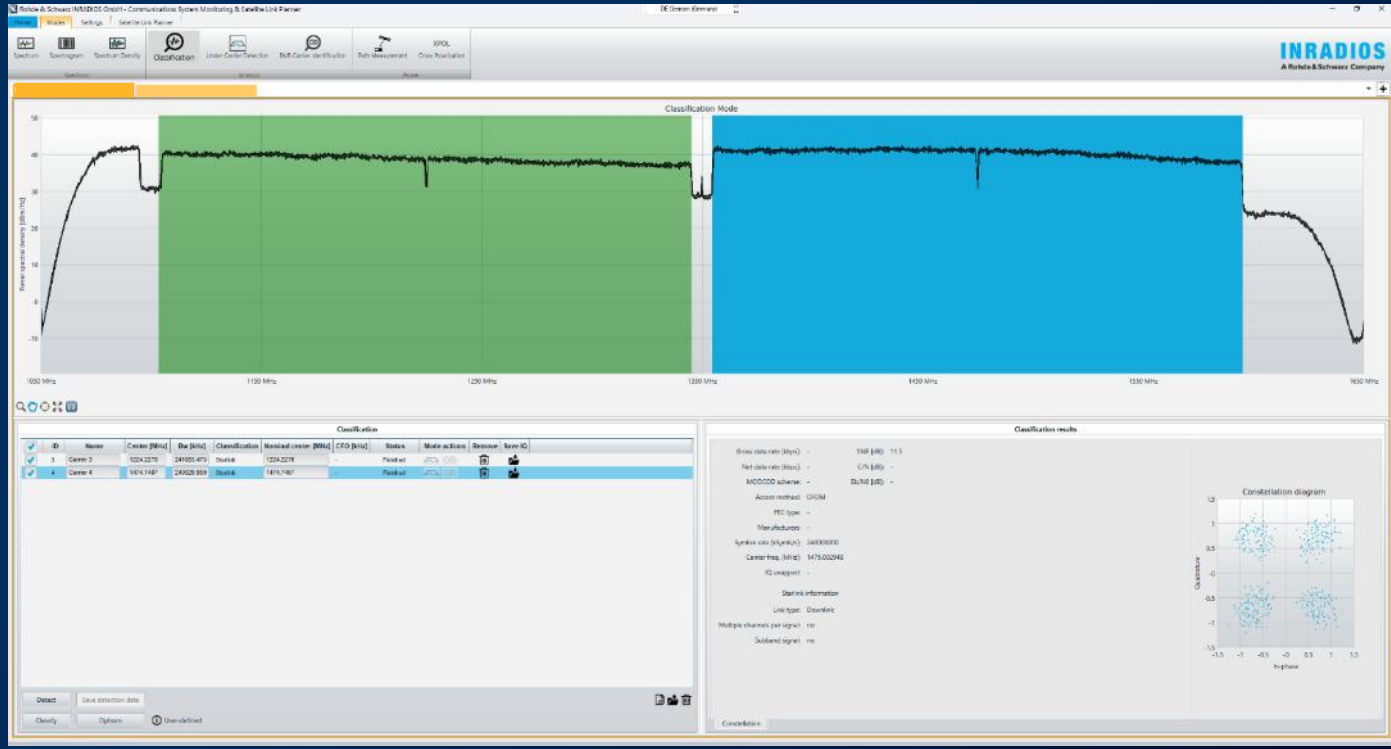


PROOF OF CONCEPT: GROUND-BASED MONITORING OF LEO SATELLITES

Phased-array antenna and automatic controlled parabolic antenna

High-quality receivers with multi-purpose platform usability

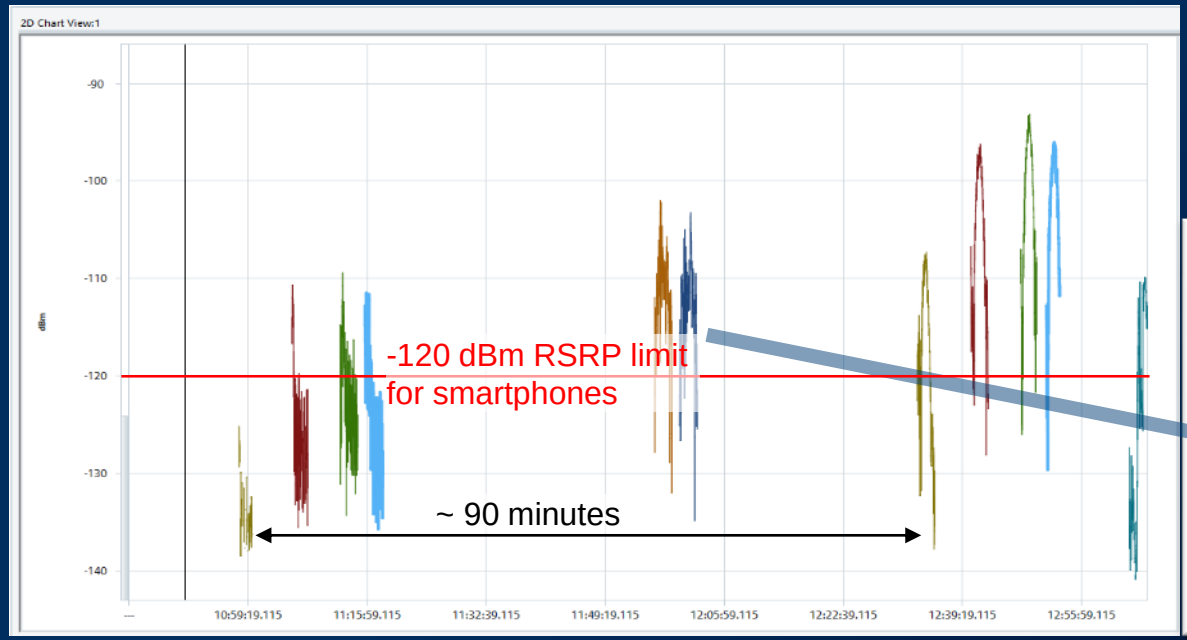
Satcom & spectrum monitoring software including LEO downlink classifiers



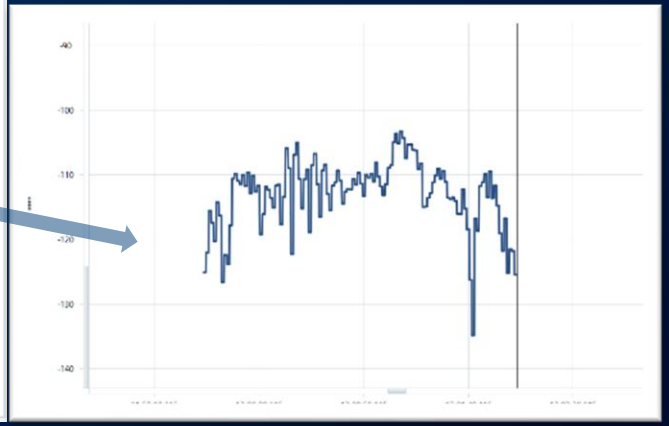
CASE STUDY: COVERAGE MEASUREMENT OF LEO NTN LTE SIGNAL

Status End of 2023 (Seattle / WA)

Scanner measurements of a LEO satellite network transmitting a standard LTE signal



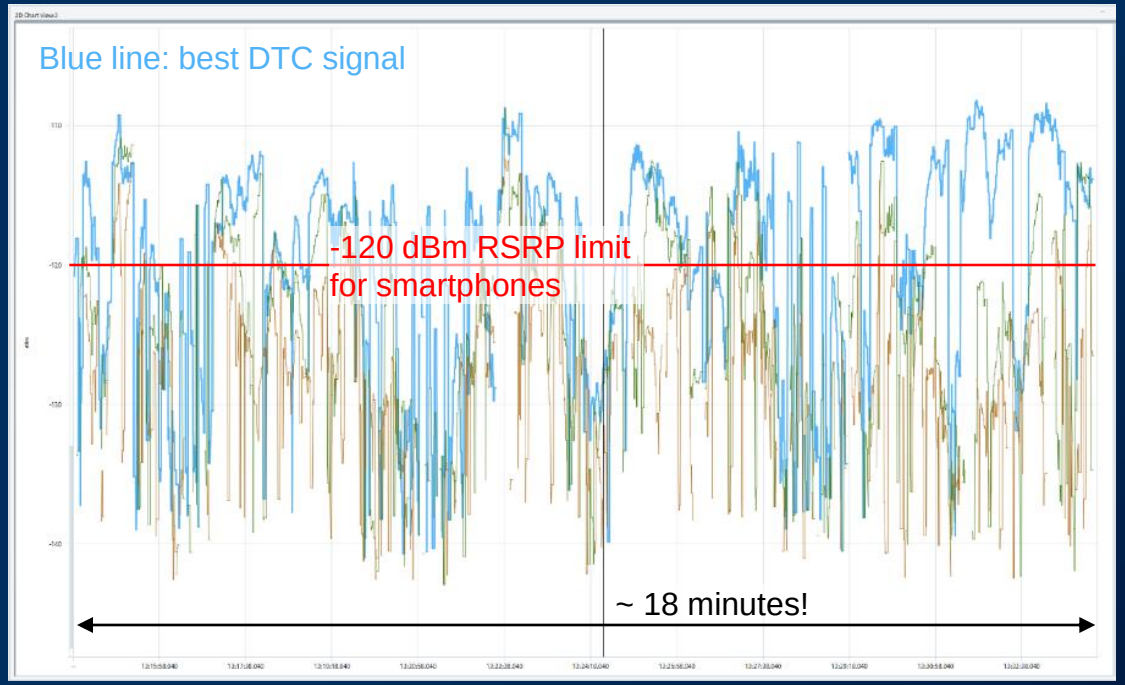
Satellite visible for 2min 30sec



CASE STUDY: COVERAGE MEASUREMENT OF LEO NTN LTE SIGNAL

Status April 2025 (Montana / US)

Scanner measurements of a LEO satellite network transmitting a standard LTE signal



- > 100 LEO satellites received (could not be visualized)
- Best 3 DTC signals visible (always different satellites)
- Coverage for a significant time

- On the path to ubiquitous coverage

THANK YOU!