

WHAT IS 5G-STAR DUST?

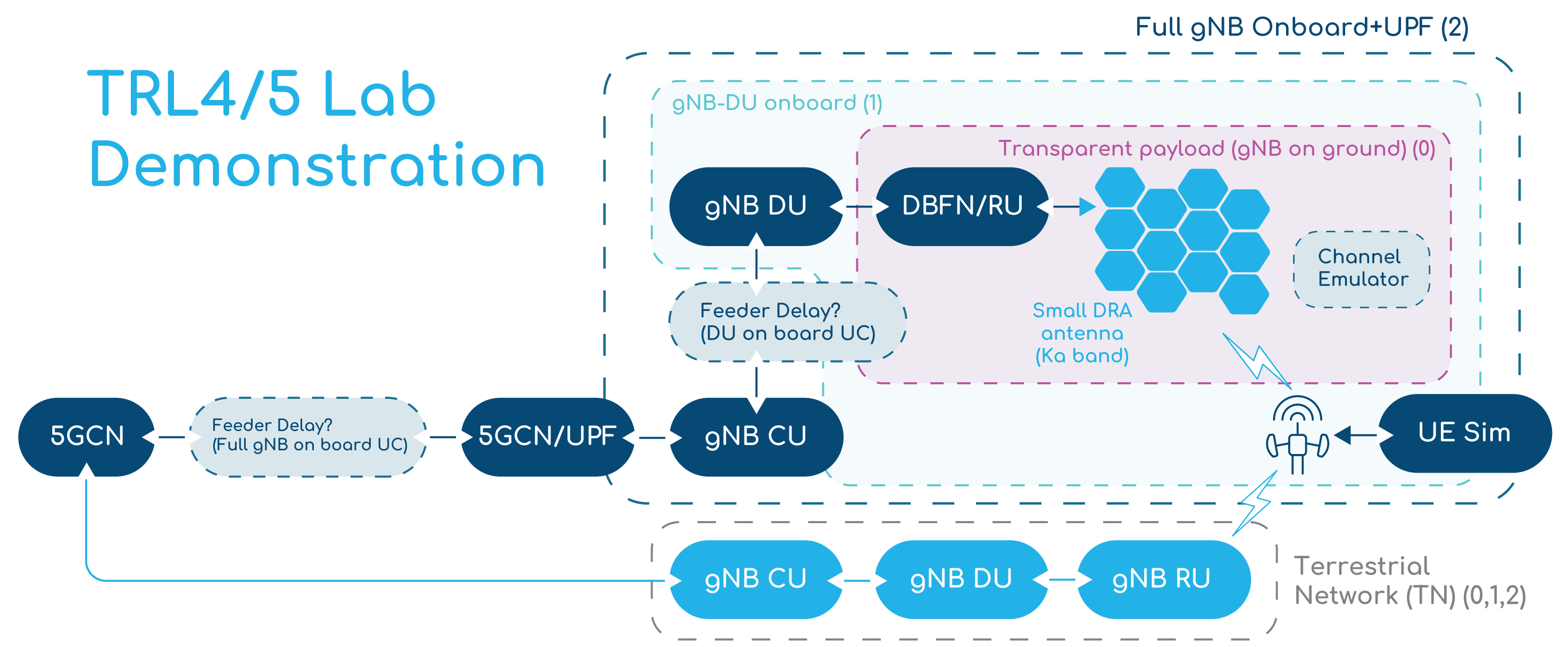
5G-STAR DUST is a Horizon Europe Research and Innovation project aimed at delivering a fully integrated 5G-NTN autonomous system with novel self-adapting end-to-end connectivity model for enabling ubiquitous radio access.

OUR OBJECTIVES

- Define a 5G-compliant integrated terrestrial-satellite network building on regenerative satellite payloads, enabling cost-effective connectivity in un(der)served areas
- Exploitation of user-centric approaches (i.e. cell-free strategies) towards more efficient use of the geographic coverage
- Define a self-organised e2e network architecture able to adapt to verticals' requirements and dynamic network operations
- Implement AI-based multi-connectivity and resource allocation strategies

OUTPUTS

TRL4/5 Lab Demonstration



USE CASES

Dual Connectivity

Maritime, railway, airway neutral host-cell



Residential Broadband



Architecture and Service Distribution Scenarios

Vehicle Connected



Broadband for Public Protection and Disaster Relief (PPDR)



Global Private Networks



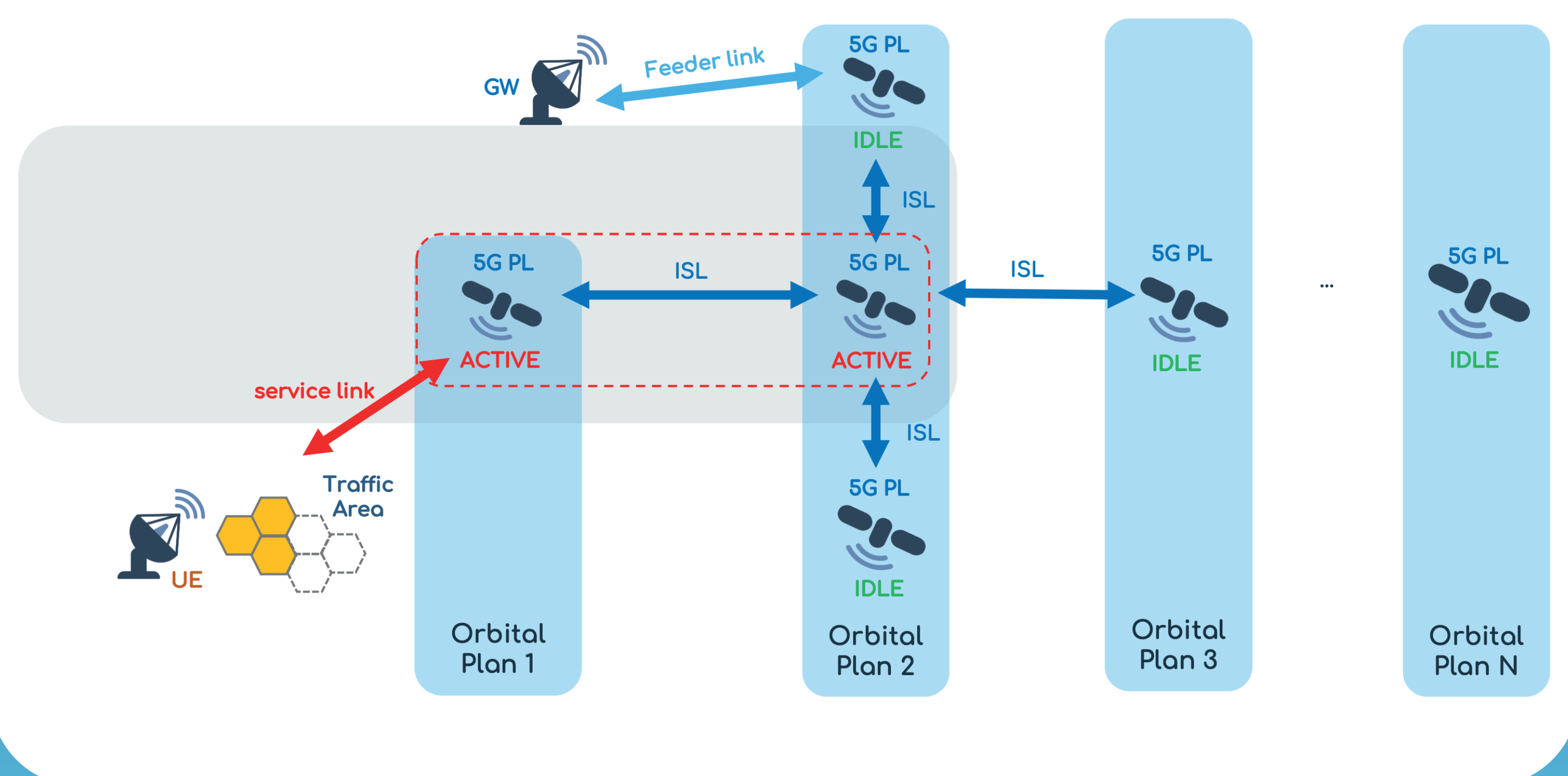
ARCHITECTURE

Reference satellite system

- LEO constellation according to 3GPP TR 38.821
- 1200 km altitude
- Ka-band
- 4 ISLs for each satellite
- OBP payload

5G Integration:

- Each satellite implements a 5G-enabled payload, that can be active or idle depending on the coverage area and the performed network functions
- Different functional splitting model considered (full gNB or CU/DU)



OUR CONSORTIUM



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