

5G stardust

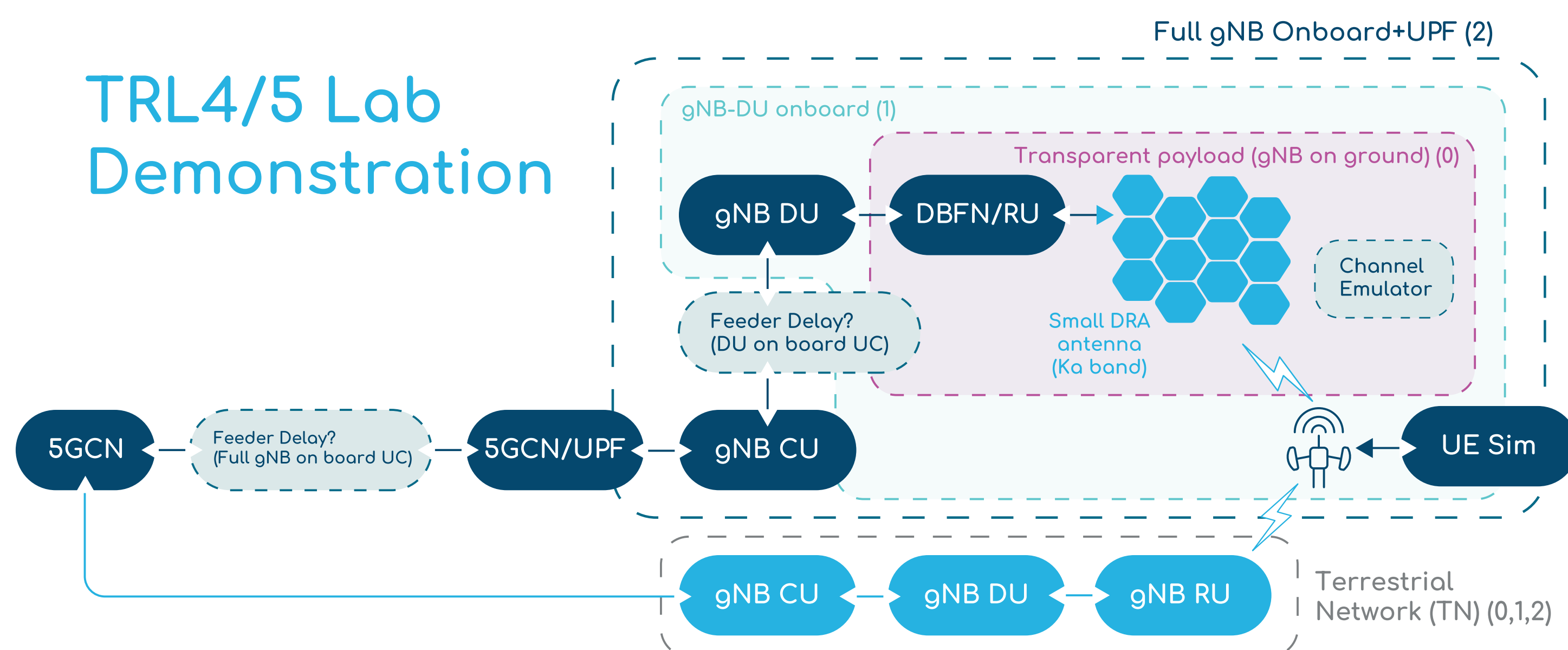
5G-STAR DUST is a Horizon Europe Research and Innovation project aimed at delivering a fully integrated 5G-NTN autonomous system with novel self-adapting end-to-end connectivity model for enabling ubiquitous radio access.

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)

 @5G_Stardust

 5G-STAR DUST

 5g-stardust.eu

OUR CONSORTIUM
























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