Demonstrating 5G Virtual RAN with NVIDIA Aerial SDK and OAI

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INTRODUCING NVIDIA AERIAL SDK

➤ NVIDIA Aerial™ Accelerated 5G Virtual Radio Access Networks (vRAN)
➤ Interoperable in ORAN 7.2 configuration with commercial RUs and UEs
➤ COTS Server hosted GPU, CPU, NIC
➤ Software defined and containerized workload
➤ Complete access to C/C++ source code for algorithm development and optimization
NVIDIA AND OAI INTEGRATED 5G NETWORK

- Complete inline L1 acceleration - no HW accelerators needed
- C/C++ programmable L1
- ORAN 7.2 split

OAI Core Network
- Backhaul
- OAI-RAN (Split 7.2x)
- Fronthaul

OAI Core Network
- OAI MAC + SCH
- RLC
- MAC + Sched
- cuPHY: PHY - Upper

Centralized Unit (O-CU)
- RRC, RRM
- PDCP, GTP-U

Distributed Unit (O-DU)
- OAI-NVIDIA gNB (CU+DU+CN)

Radio Unit (O-RU)
- O-RU

COTS Server

NVIDIA GPU
- NVIDIA NIC

- ORAN 7.2x FH IF with eCPRI
- SyncE, G.8273.2 Slave/GM Clock
## Demo Configuration

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