End-to-End 5G Demo featuring Lookaside Acceleration of LDPC Encode/Decode and O-RAN F1 and 7.2 Splits

This demo showcases the integration of the O-RAN 7.2 Fronthaul, the AMD T2 Accelerator card, and the 3GPP F1 midhaul splits in the OpenAirInterface (OAI) stack. A LITEON O-RU is connected to the OAI O-DU which leverages the open fronthaul interface (FHI) library (E-release) from the O-RAN Software Community. LDPC encoding at the DU during the DL processing and decoding during the UL processing is offloaded to the T2 HW accelerator card. The DU is further connected to the OAI O-CU via F1. Tests were done using 100MHz bandwidth, SCS 30kHz, and MIMO 2x2 in a TDD mode 2.5ms DDSDSU slot format, reaching a throughput of up to 700 Mbps and 150Mbps in DL and UL, resp. This reference implementation creates the opportunity for a wide range of O-RAN compatible radio units to be tested and deployed with OAI, such as LITEON, Benetel and VVDN.