Emerging Wireless White boxes
RAN Fronthaul

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RAN Evolution

Current - LTE

Future – Flavors of ORAN Architecture (Cloud based) for 5G & LTE

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Use Case 1: RoE
- ROE Tunneling mode (CPRI agnostic) – No BW savings
- ROE Line code aware
- ROE Structure aware
- Paired FHG deployment

Use Case 2: Low PHY
- Offload BBU L-PHY processing to FHG
- ORAN 7.2x Split option
- FH BW saving
- Enable DU Pooling at the CRAN Hub
Reference Architecture

• CRAN Architecture
• 125us roundtrip latency from RRH to BBU/O-DU
Fronthaul Gateway (FHG)

- Transport packetized fronthaul from 4G LTE (CPRI) and 5G (eCPRI) Radios
- Support ROE (IEEE 1914.3 standard)
- Offload L-PHY function from 4G BBU for ORAN 7.2x split
- Time Sensitive Networking (TSN) and Class C timing (Boundary clock)
- 1 RU – 24x 10/25G Client/Radio ports and 4x100G Network uplink
- TP 76200/TP76450 Level 3 OSP/CELL-SITE Class 2; -40C to +65C Ambient
- Deployment location: Cell Site, CO
- Desired form factors: 1RU, EIA-19”, 300mm rack depth; Open Edge sled
- NPU capacity ~800G with integrated traffic manager and packet processor with no more than 3 micro sec switching latency
- Intel x86 CPU 4 core min with TPM; BMC
- Redundant and hot swappable Fans and AC or DC PSU (1+1)
Converged Access Switch (CAS)

• Aggregation of fronthaul traffic from multiple cell sites
• Low latency; non blocking switching capacity
• Time Sensitive Networking (TSN) and Class C timing
• (40 to 64)x100G Network Interface Ports
• TP 76200 NEBS Carrier grade Level 3
• Deployment location: Central Office / CRAN-HUB
• Desired form factors: 2 RU, EIA-19”, Max-Depth = 30 in
• NPU capacity range 4T to 6.4T with integrated traffic manager and packet processor with no more than 4 micro sec switching latency
• Intel x86 CPU 8 core min with TPM; BMC
• Redundant and hot swappable Fans and AC or DC PSU (1+1)
How to Engage with Community

- How to get involved in the project
  - Contribute New use cases
  - Additional requirements
- FHG and CAS draft Specs
  https://www.opencompute.org/wiki/Telcos
- Provide feedback
  Telco group Mailing list: OCP-Telco@OCP-All.groups.io
Thank You