

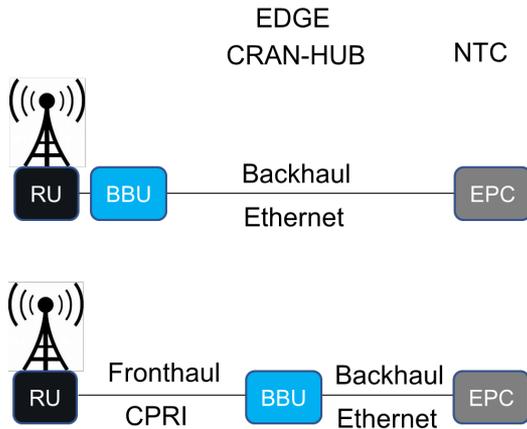


Emerging Wireless White boxes RAN Fronthaul

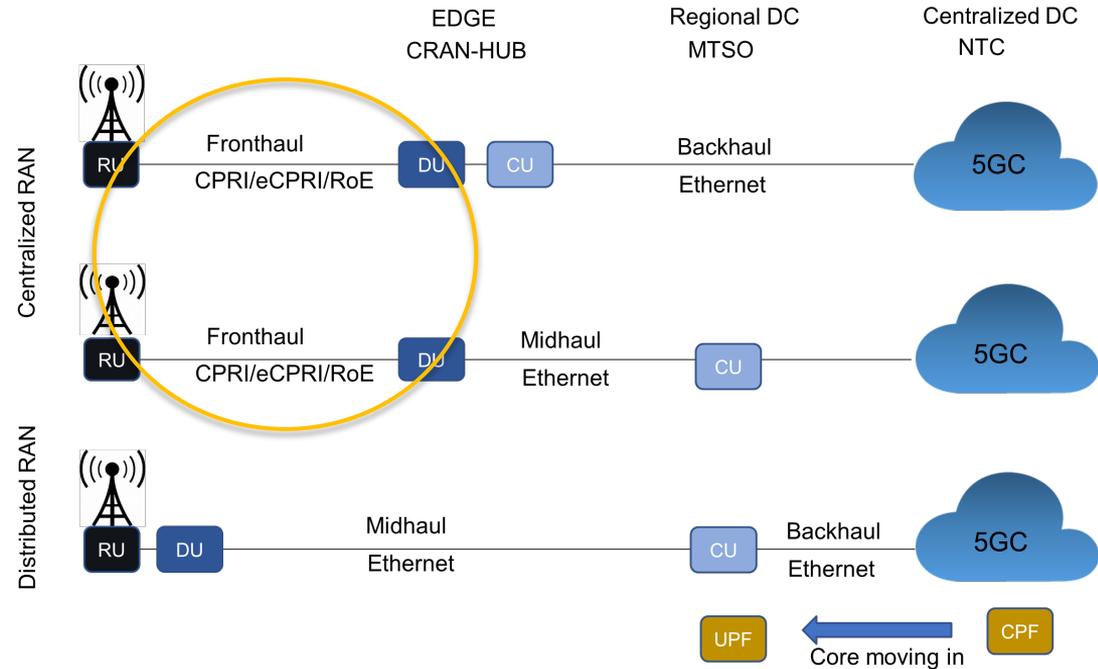
Sumithra Bhojan
AT&T

RAN Evolution

Current - LTE



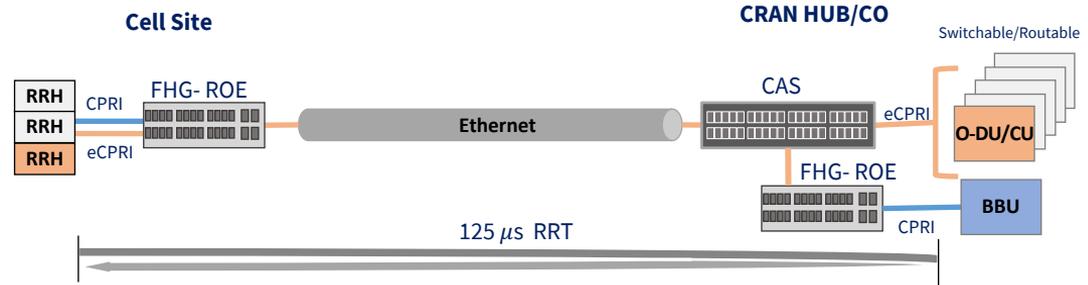
Future - Flavors of ORAN Architecture (Cloud based) for 5G & LTE



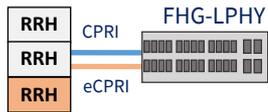
Use Case: Centralized RAN

Use Case 1: RoE

- ROE Tunneling mode (CPRI agnostic) – No BW savings
- ROE Line code aware
- ROE Structure aware
- Paired FHG deployment

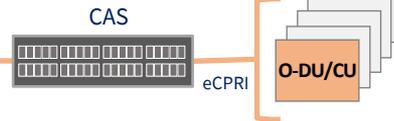


Cell Site



CRAN HUB/CO

Switchable/Routable



125 μs RRT

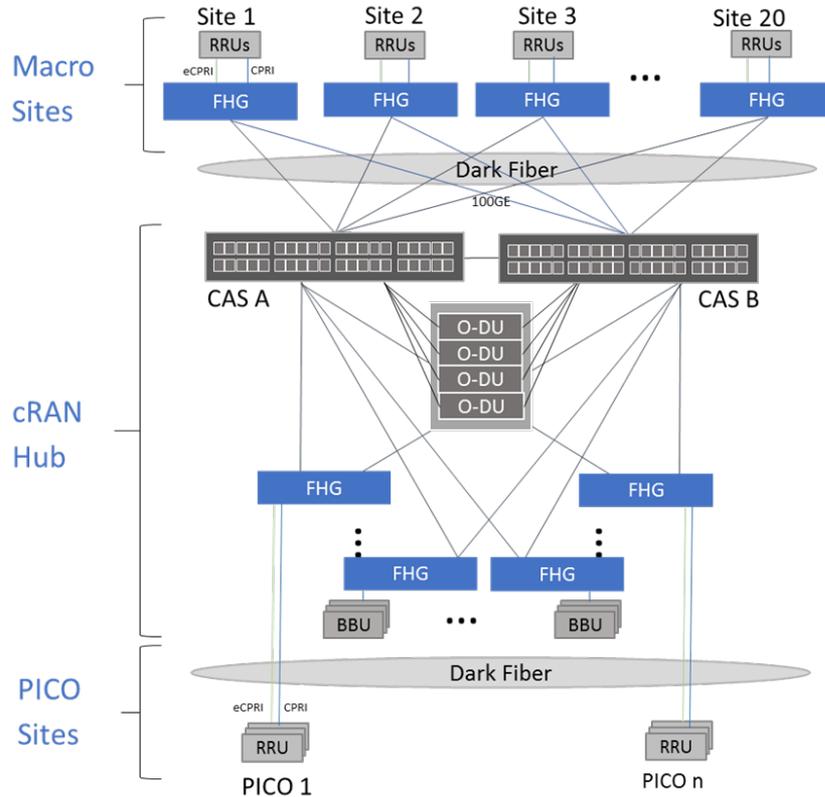
Use Case 2: Low PHY

- Offload BBU L-PHY processing to FHG
- ORAN 7.2x Split option
- FH BW saving
- Enable DU Pooling at the CRAN Hub

Reference Architecture



TELCO



- CRAN Architecture
- 125us roundtrip latency from RRH to BBU/O-DU

Fronthaul Gateway (FHG)



TELCO

- 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)



Specifications

Converged Access Switch (CAS)



TELCO

- 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)



Specifications

How to Engage with Community



TELCO

- 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