

An abstract graphic composed of numerous thin, light green lines that swirl and curve together to form a central, irregular shape. The lines are more densely packed in some areas, creating a sense of depth and movement. The background is a solid, deep blue.

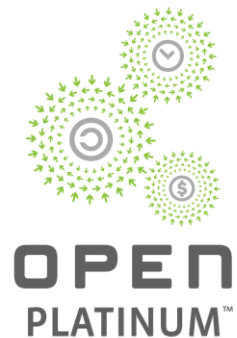
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OCP
SUMMIT

Converged Access Switch (CAS)

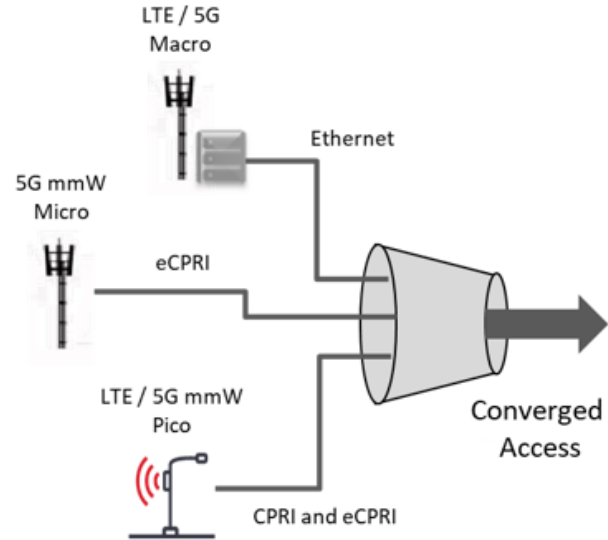
Mike Meche
Principal Member of Technical Staff
AT&T



Converged Access Switch Introduction

Objective: Consolidate multi-protocols into a common transport solution

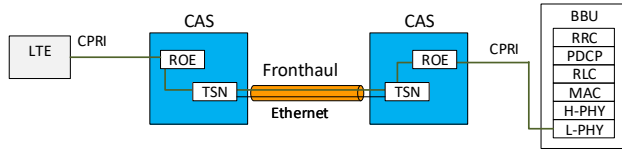
- **Interoperable without vendor lock-in**
 - Standards based open interfaces
- **Agility via modular, μ s-latency, flexible architectures**
 - Ethernet based aggregation
 - Converged protocols
- **Customized model and policy driven automation**
 - SDN controlled
- **White Box Solution**
 - Open Compute Project (OCP) design



CAS Requirements

Radio over Ethernet (RoE)

- Transport CPRI per IEEE 1914.3 Standards

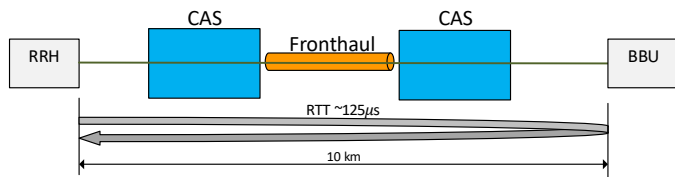


Time Sensitive Networking (TSN)

- TSN Preemption (802.1CM)

Latency

- Low Latency ($\sim 125\mu\text{s}$ RTT max for 10km distance)



Synchronization (1588)

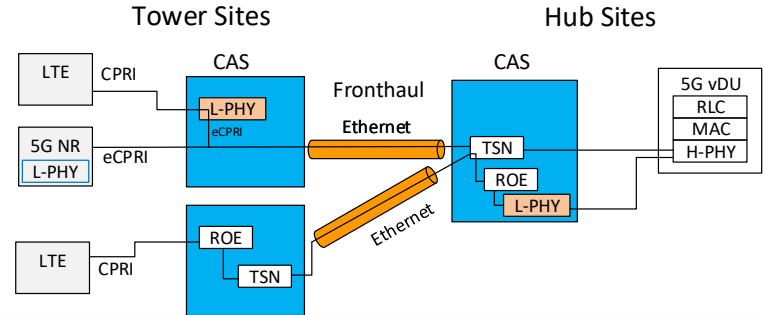
- Boundary Clock (class B) or Edge Grand Master

Switching / Routing Software

- Support NOS of operator's choice

Low PHY

- CPRI to eCPRI Conversion



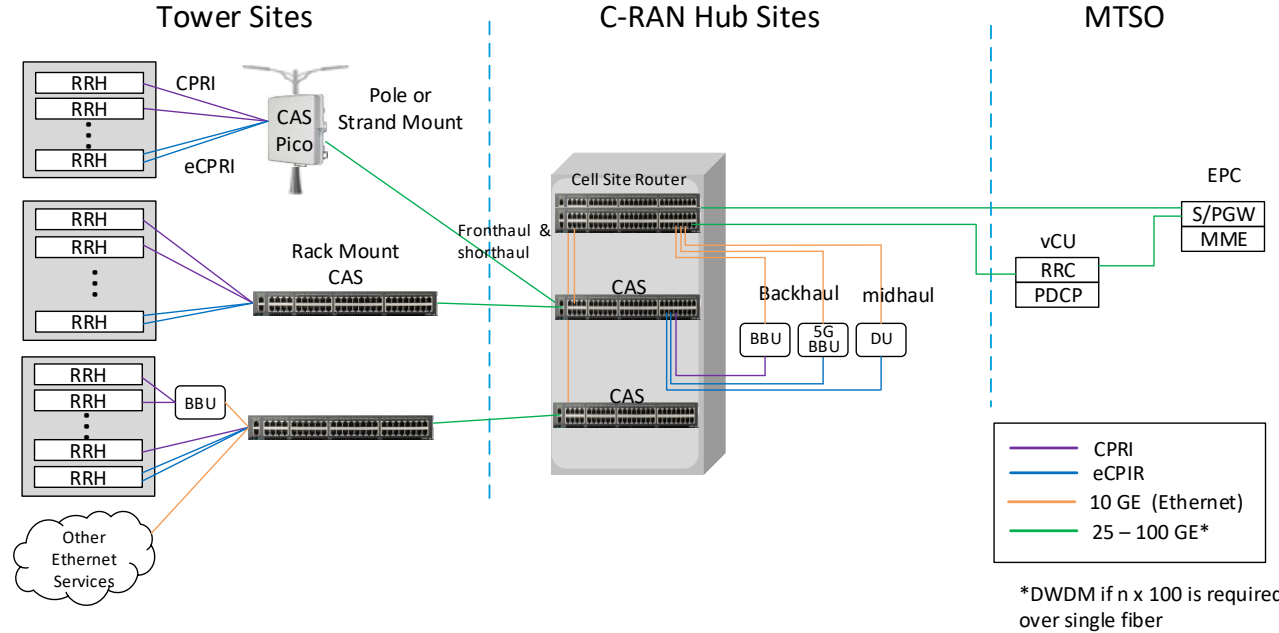
Use Cases

CAS Pico

- Outdoor Hardened
- Pole or Stand mounted
- Supports Fronthaul, Backhaul & Midhaul

CAS

- 1-2 RU Rack Mounted
- Deployed at CRAN Hub or Tower Sites
- Supports Fronthaul, Backhaul & Midhaul



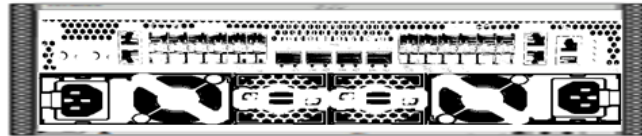
High Level Requirements

| Form Factor | Deployment Environment | Port Capacity | Power | Cooling | Environmental | Size | LPHY | RoE | Synch |
|-------------|--------------------------------------|---|---|---------------------------------|--|----------------------------------|-----------------------|----------|-------------------------------------|
| Pico CAS | Pole Mount Strand Mount | (6) X 10/25G CPRI/RoE/eCPRI (2) X 25G eCPRI (1) X 100G | AC (100 to 240 VAC) DC (-57 to -40VDC) | Passive | Outdoor Enclosure NEBS 3 OSP Class 4 -40C to + 70C Ambient IP65 | 10"x6"x4" < 35lbs | Optional (Desired) | Required | Boundary Clock |
| CAS | Tower-Cabinet Hub Site MTCO/CO | (18) X 10/25G CPRI/RoE/eCPRI (6) X 25G eCPRI (4) X 100G | AC (100 to 240 VAC) DC (-57 to -40VDC) | Redundant Fans Front to back | Rack Mount: 19" NEBS 3 OSP Class 2 -40C to + 65C Ambient IP54 Front access | 1-2 RU 19" Rack 11.8" Deep | Required | Required | Boundary Clock or Edge Grand Master |

Pico CAS



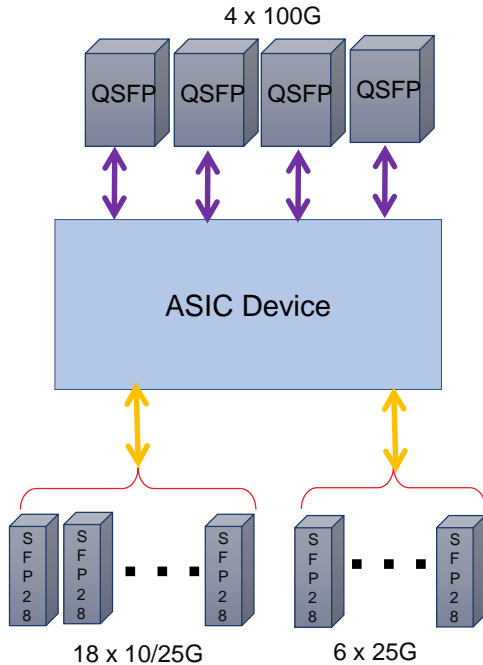
CAS



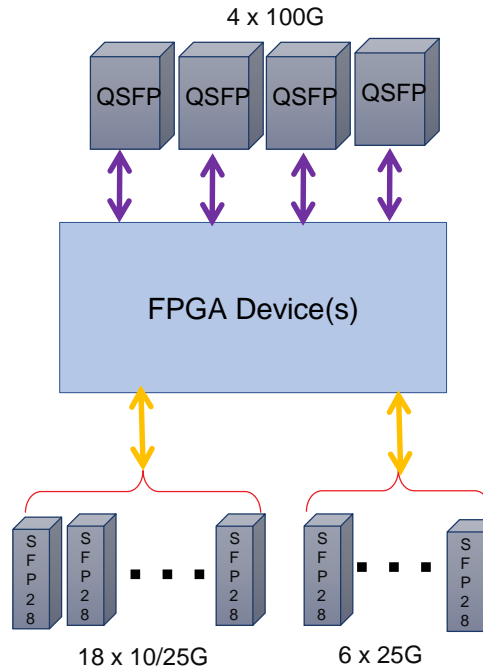
Concept Models

Rack Mount CAS Block Diagram Options

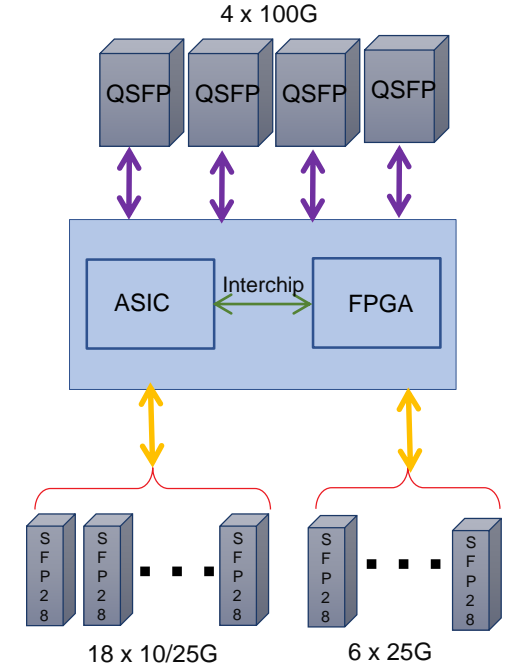
ASIC w/o LPHY Feature



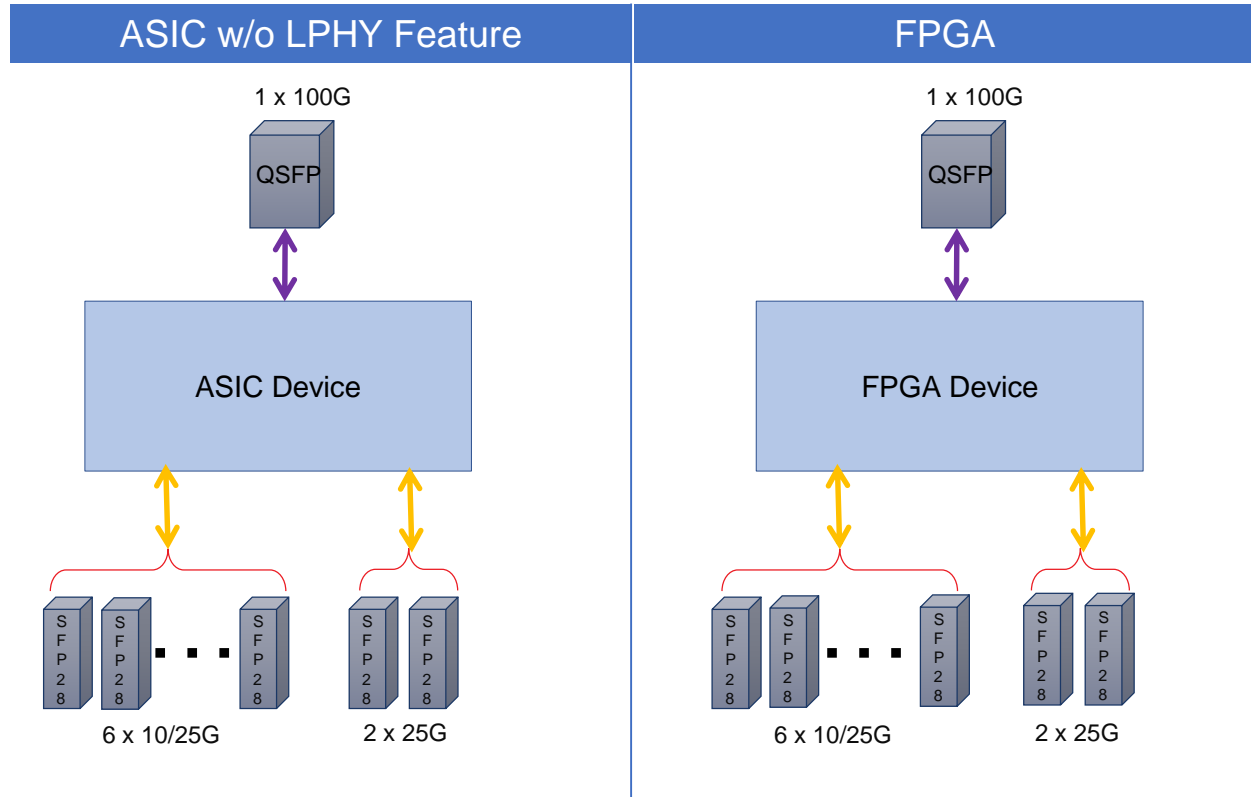
FPGA w/ LPHY Feature



ASIC + FPGA w/ LPHY Feature



CAS Pico Diagrams



Call to Action

Request Collaboration with Community to define detailed specification for CAS

Request Feedback from Operators and Suppliers by Mid April, 2019 to the OCP Mailing list:

<https://www.opencompute.org/projects/telco>

or contact Mike Meche mm477j@att.com





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OCP Global Summit | March 14–15, 2019

