Open. Together.
Abdellah Tazi
Director Member of Technical Staff
AT&T
OCP Adoption in Telco Ecosystem

Abdellah Tazi, Director, AT&T
Christopher Winslow, SVP, Flex Cloud Solutions
Saurav Das, VP of Engineering, ONF
Open Access of Tomorrow

**OPEN**
- Open Hardware
- Open Access Software
- Open Interfaces/APIs

**Technology Standards**
- ITU-T, 3GPP, IEEE, BBF, FSAN

**Automation**
- Zero Touch, SON, CI/CD
- Analytics – AI, ML

**Access Technology**
- xPON, G.fast, xHaul

**Disaggregate**
- Software/Hardware
- Control/Data Plane
- Network Functions

**Open Standards Community**
- AKRAIN, OCP, ONF, ORAN, ONAP-Linux Foundation

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What’s Driving AT&T’s Whitebox Strategy?

Access Aggregation
Central Office/HUB

Regional DC
MTSO

Central DC
Core

Fronthaul Wireline Access Transport

Midhaul/Backhaul

Backhaul

OCP White Box
CAS
Cell Site Gateway Router
Fiber Distribution Hub
G.Fast DPU
GPON OLT
XGS-PON OLT
Universal CPE

NEW

OCP Volume
Closer to Edge

$ CAPEX / OPEX

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AT&T Transformation Journey

Closed Solution
Rigid Model

DISAGGREGATE

Software

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Open Solution - Broadband Service

- Disaggregated PON OLT Solution
- OCP based PON OLT, ToR, Compute
- Open Source Software - SEBA from ONF
- Orchestration and Management
- Community Collaboration
Saurav Das
Vice President of Engineering
Open Network Foundation
SEBA

SDN Enabled Broadband Access

SDN Controller - ONOS

Network Edge Mediator (NEM)

ONAP
Op X OSS/BSS

Abstract OLT

Dockers K8s Helm

OLT

ONU

SEBA POD

SWITCH

SERVER

External BNG

QuantaGrid D51B-1U

EdgeCore 7712

EdgeCore ASFvOLT16

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SEBA: Open. Together.
White-Box XGS-PON OLT

- VOLTHA core
- OpenOLT Adaptor

White-Box = Open-Hardware Specs (OCP) + Open-Source Software (ONF & OCP)

- Edgecore ASFvOLT16
- Whitebox OLT

- OpenOLT Driver
- ONL Chip Driver
- ONIE SDK(s)

OpenOLT

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White-Box ToR Switching

Fabric Control
- SDN Controller

White-Box =
- Open-Hardware Specs (OCP)
- Open-Source Software (ONF & OCP)

Indigo OF Agent
- BRCM OF-DPA
- SDK
- ONL
- ONIE
- BRCM ASIC
- OCP Bare Metal Switch

Edgecore
- 5712, 6712, 7712

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Trellis: Open. Together.
The ONF Ecosystem
Vibrant Operator Led Consortium  160+ Members Strong

www.opennetworking.org

CORD
SEBA  Trellis
VOLTHA  ONOS
XOS  Stratum
OMEC  COMAC
ODTN  P4
Chris Winslow
Senior Vice President & General Manager
Global Cloud & Data Center Business Unit, Flex
Across the Entire Network

**Cellular**
- Microwave & RF
  - 4G/4.5G Radio Modules
  - PTP Backhaul Units

**Edge Compute**
- IoT Edge Computing Platforms
- Automotive Network Switch Modules

**Edge Data Center and Central Office**
- Open Standard Mechanical Racks
- Open19 Compute & Networking Modules
- CRAN Optical Systems
- Edge Router Modules

**Cloud Data Center**
- Custom Compute Motherboards
- Open Standard Mechanical Racks
- OCP Storage Systems
- Storage Appliances

**Enterprise Data Center**
- Systems, Storage and Networking

**SOHO**
Open Ecosystem Initiatives

**Build Open Hardware**

Participate in open hardware foundations by contributing designs and providing specific feedback.

**Validate Open Software Platforms**

Collaborate with software consortium partnerships to test SDDC solutions driven by customer requirements.

**Deliver Integrated Solutions**

Combine HW / SW design experience with automated validation framework to deliver robust platform solutions.
Open Standards Engagement Lab

Integration Requirements

- Multiple technology Partners
- Established worldwide supply chain
- Sketch-to-Scale technology enablement
- Distribution, service, repair, and reverse logistics

Validation Requirements

- Stack Validation
- Performance Testing
- Latency reduction
- No Vendor Lock-In
- New applications

https://flexcloudlabs.com
ONF Reference Designs Validation on OCP Platforms

• Flex currently deploying multiple integrated stacks for telco use cases
• Running on multi-vendor OCP hardware
• Validating with partner tools & Flex FAST

For more details:
Friday @ 2pm in 212 CD

Telco & openEdge Validation of SEBA CORD
- Siddharth Gogar