



CORD - SEBA - Akraino

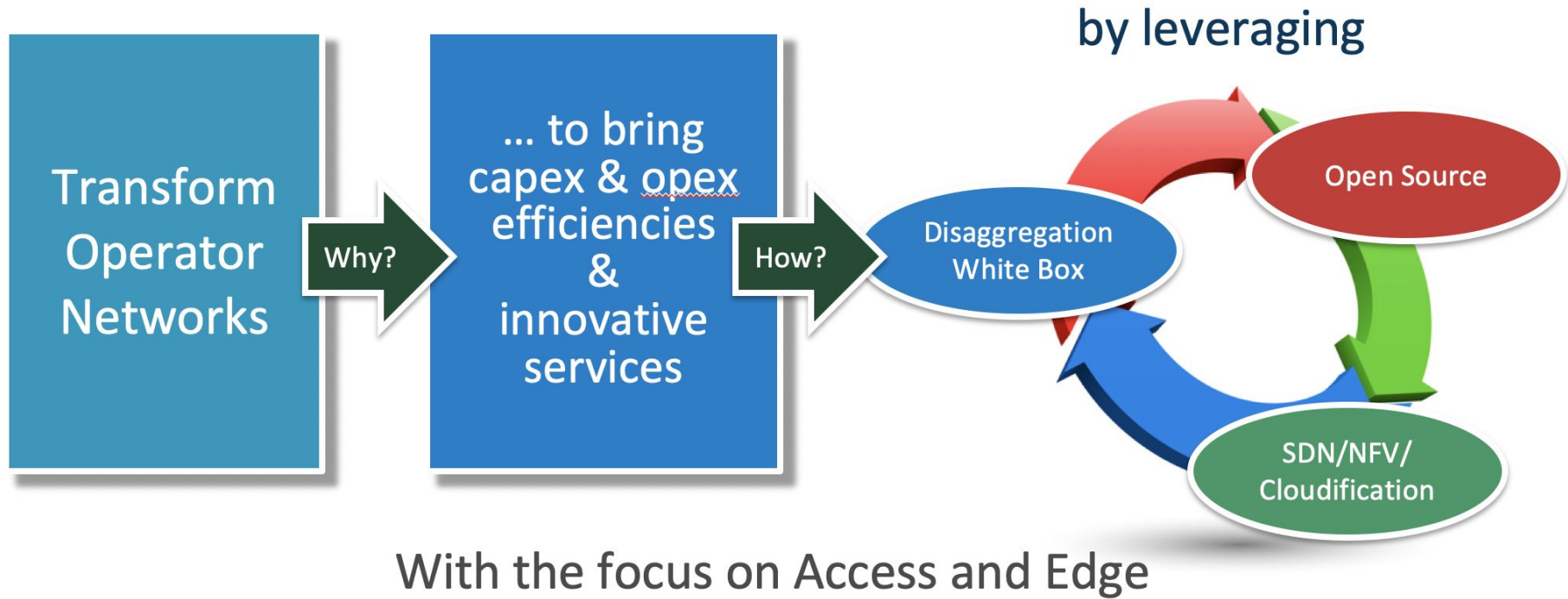
2020-03-03

Zack Williams (MTS, ONF)

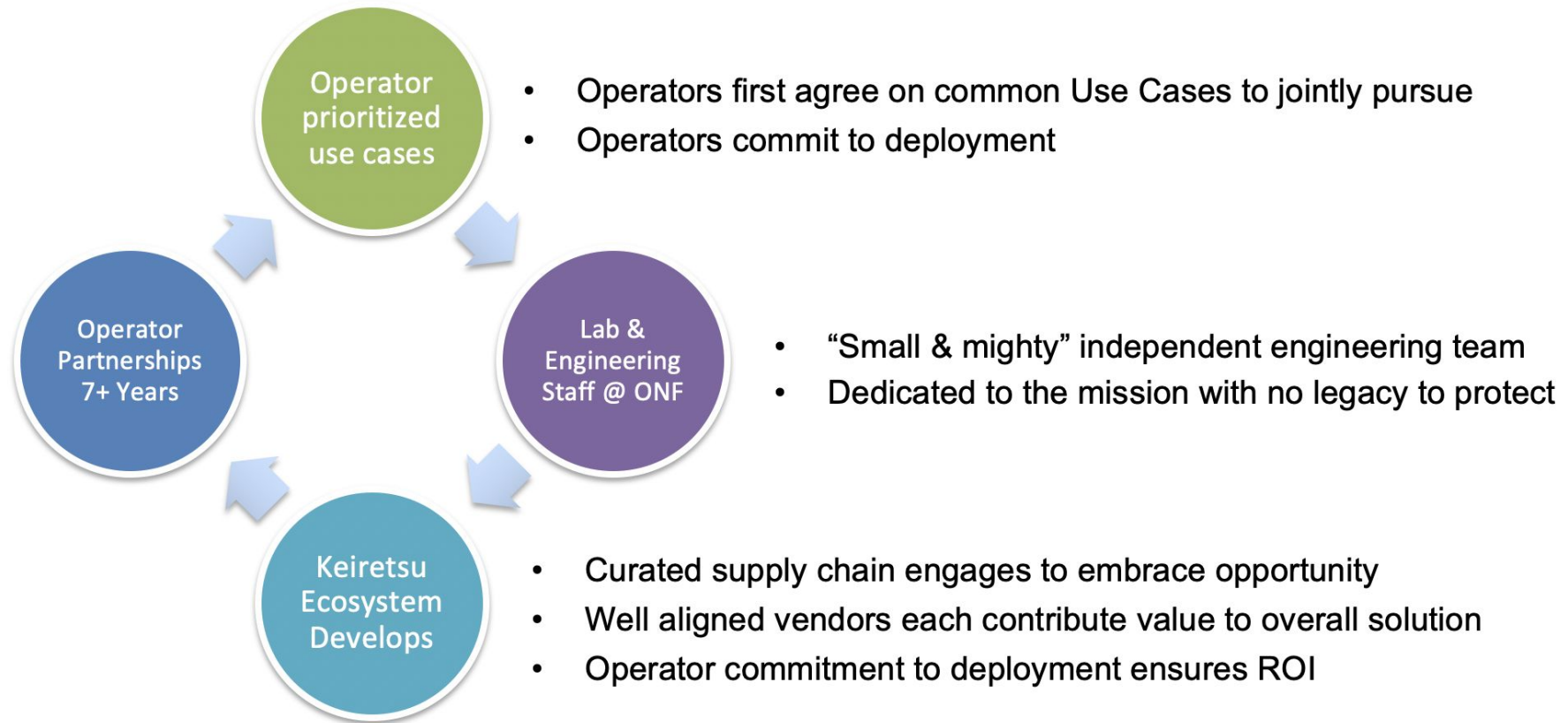


ONF Intro

ONF's Operator Led Mission

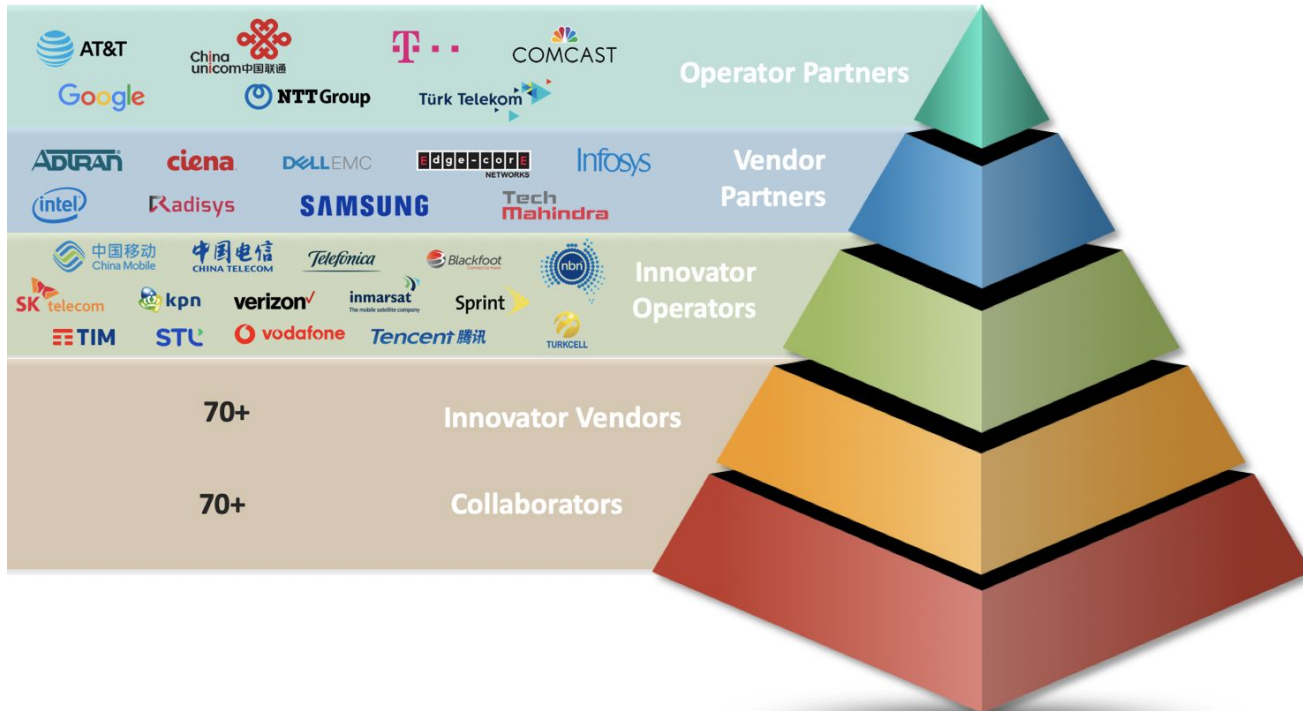


ONF Unique Approach – Operator Led Curated Open Source









ONF: Operator Led, Curated Open Source Community

Partners committed to disaggregation, open source and SDN/NFV/Cloudification



ONF BOARD

-  **AT&T** Andre Feutsch – CTO & ONF Chair
-  **T..** Jochen Appel - VP
-  **Google** Amin Vahdat - Fellow
-  **NTT Group** Dai Kashiwa - VP
-  **COMCAST** Rob Howald - VP
-  **China unicom 中国联通** Tang Xiongyan – Chief Scientist
-  **edgecore NETWORKS** George Tchapanian - CEO
-  **Türk Telekom** Yusuf Kirac - CTO
-  **STANFORD** Nick McKeown - Prof
-  **ONF STANFORD** Guru Parulkar, Exec Dir



SEBA: SDN-Enabled Broadband Access with disaggregated OLT and BNG

SEBA Community



NETSIA



JABIL

ISKRATEL



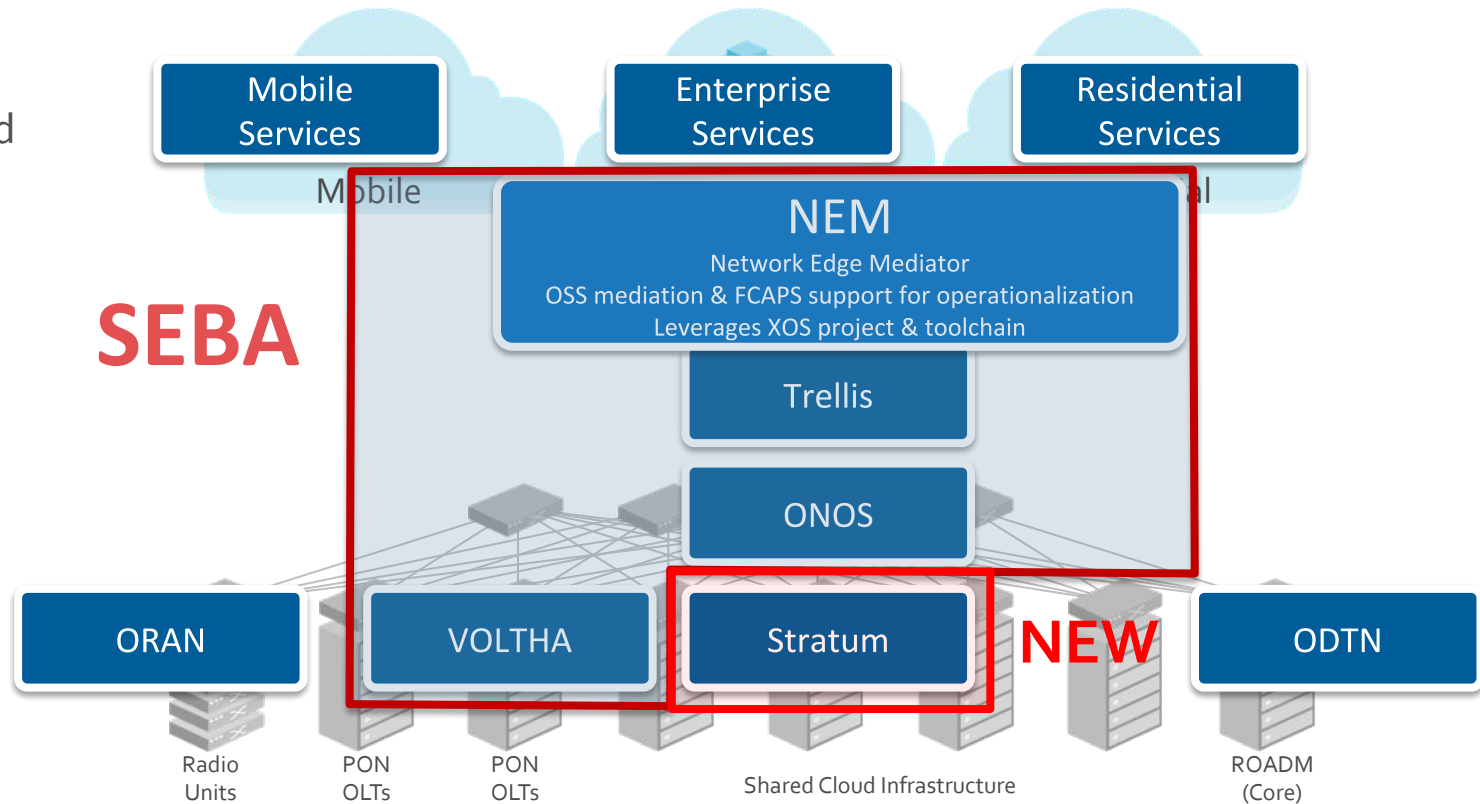
flex

CIG

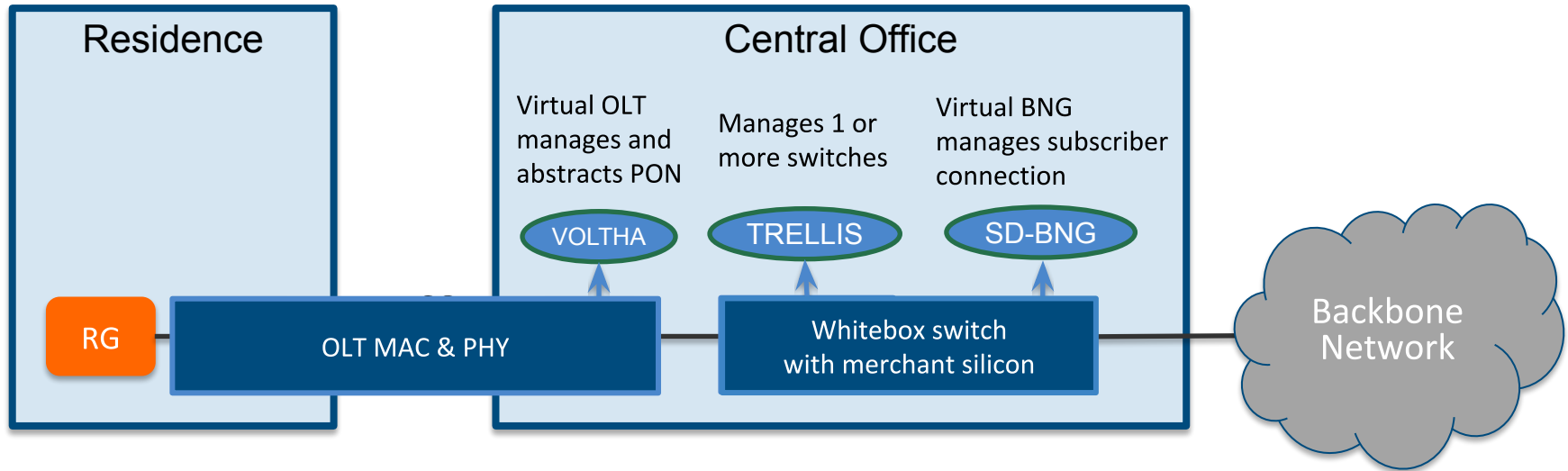


SEBA Exemplar (built on CORD platform)

SDN
Enabled
Broadband
Access



SEBA: SDN Enabled Broadband Access



RG – Residential Gateway

ONU - Optical Network Unit

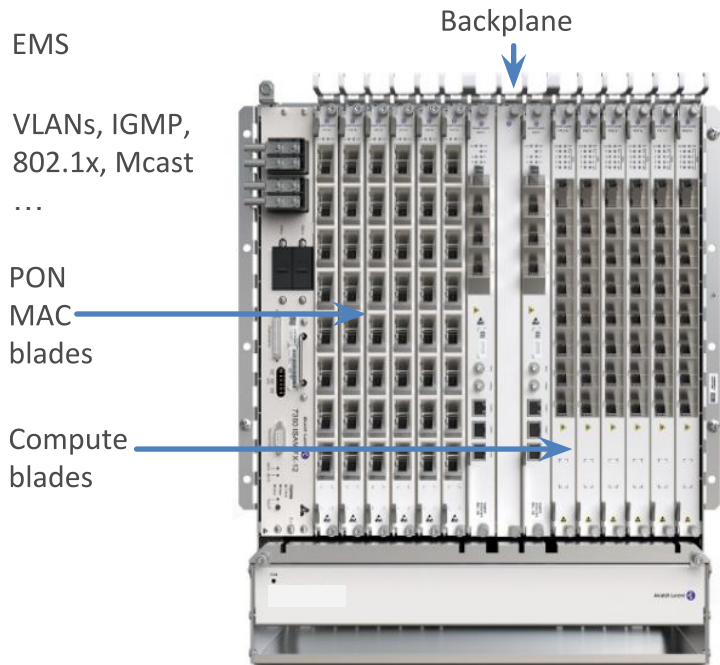
PON - Passive Optical Network

OLT – Optical Line Termination

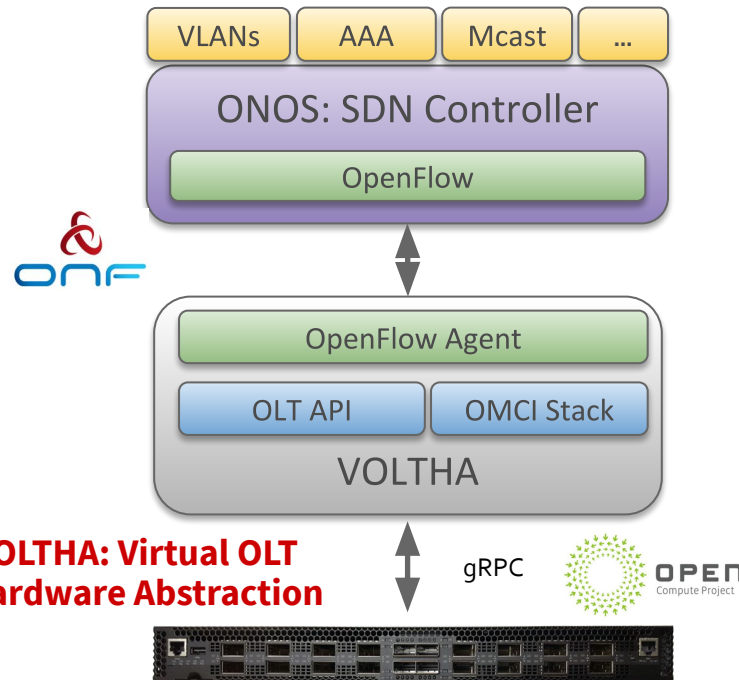
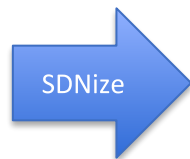
BNG – Broadband Network Gateway

OLT disaggregation → VOLTHA

On path to production in 2020 at
AT&T, Deutsche Telekom, Türk Telekom



Traditional Chassis-based
Vendor OLT for PONs
(Passive Optical Networks)



**VOLTHA: Virtual OLT
Hardware Abstraction**

EdgeCore ASXvOLT16
(and others)



Fabric disaggregation → TRELIS

Carrier-grade SDN fabric for edge/NFV applications

Based on whitebox switches and merchant silicon

In production at Comcast

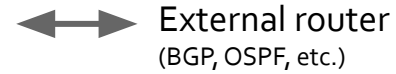
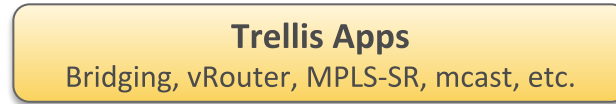
Extensive switch support

Vendors: EdgeCore, Delta, Inventec, Stordis, QCT

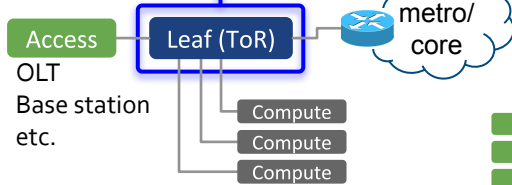
ASIC: Tomahawk, Tomahawk+, Trident2, Qumran, Tofino

Switch SW stack:

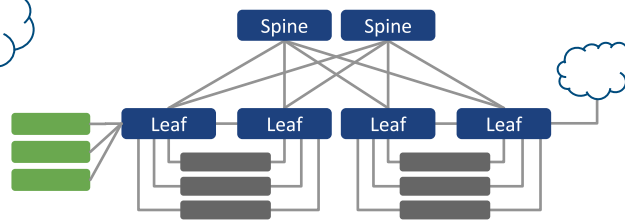
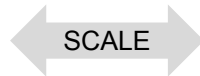
ONL, OF-DPA, Stratum



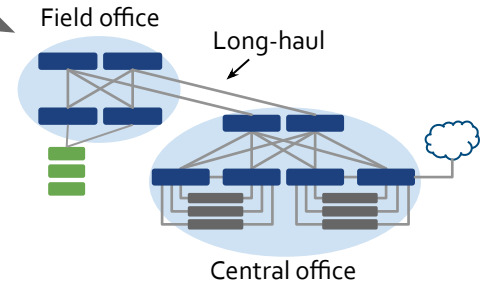
OpenFlow
P4Runtime
gNMI



Single Leaf

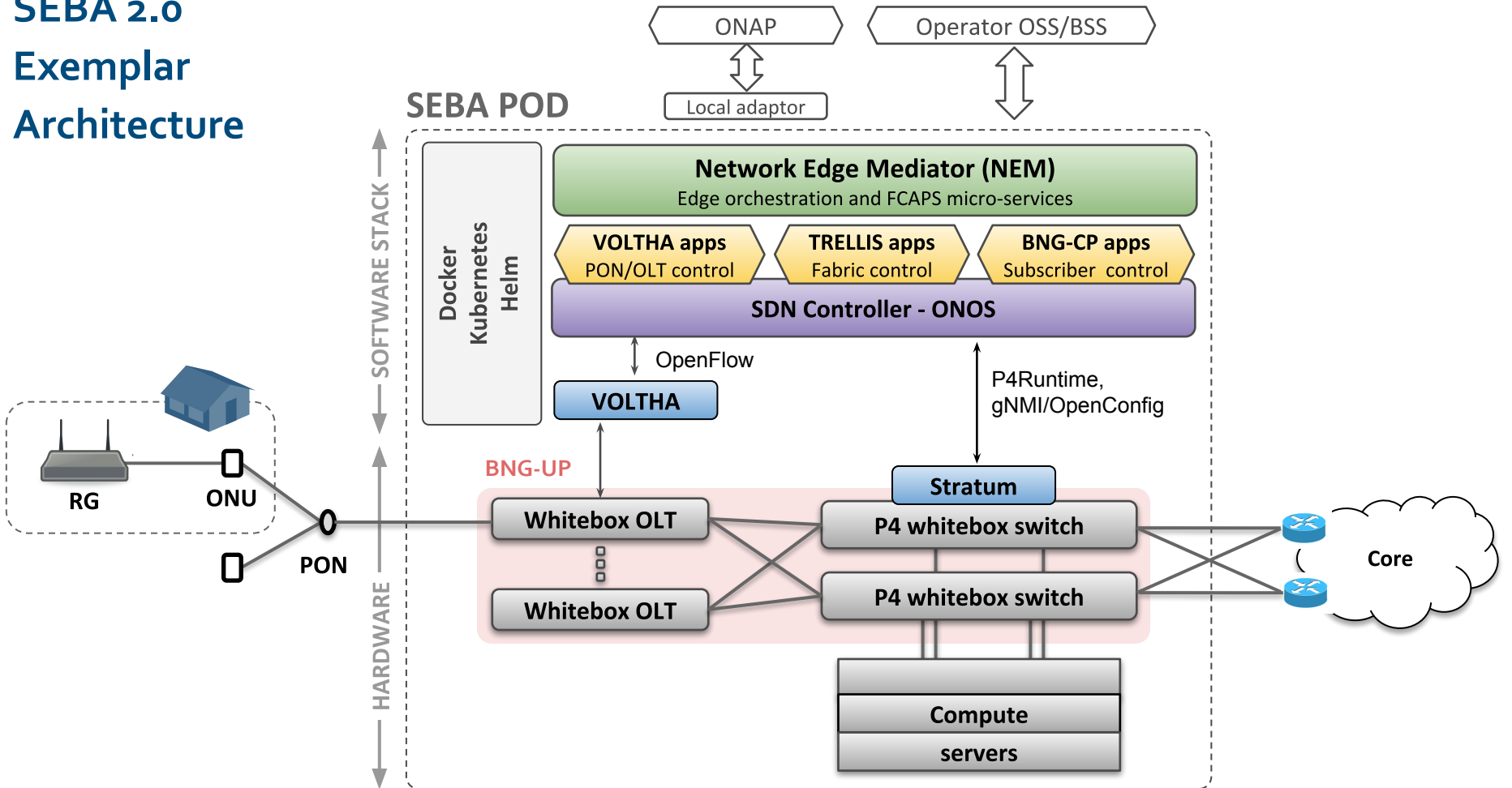


Leaf-Spine Fabric
With ECMP and N-way redundancy



Multi-Stage Leaf-Spine
For distributed access/edge networking

SEBA 2.0 Exemplar Architecture



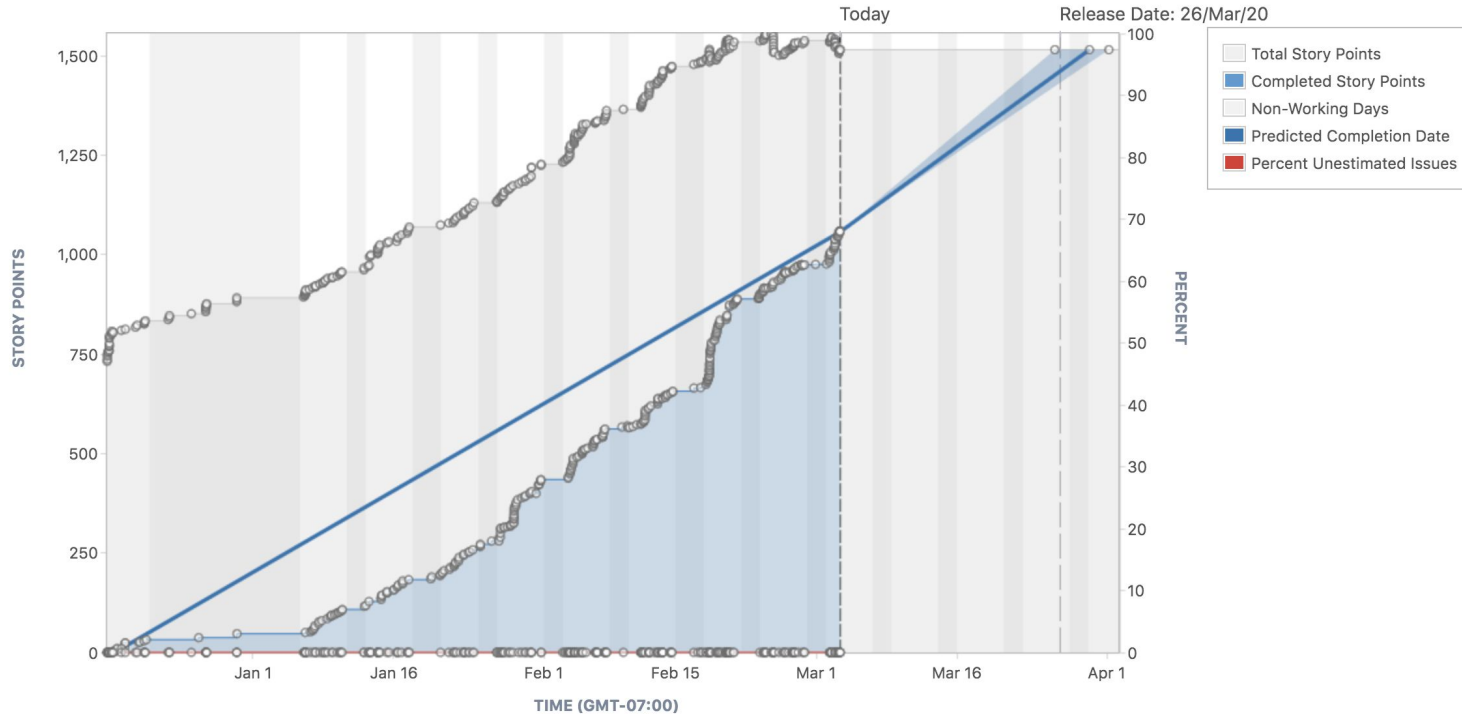
VOLTHA 2.3 release: March/April 2020

VOL: VOLTHA v2.3 ▾

Start Date: 17/Dec/19

Scheduled Release Date: 25/Mar/20

[View VOLTHA v2.3 in Issue Navigator](#)



Predicted completion date: 30/Mar/20

Optimistic completion date: 26/Mar/20

Pessimistic completion date: 01/Apr/20

SEBA Roadmap

SEBA 1.0

Inventory

Subscriber

management

SEBA 2.0

(alpha1)

VOLTHA 1.7

PON-level QoS

Bandwidth Profiles

SEBA 2.0 (Q2 2020)

VOLTHA 2.3

Dynamic Bandwidth Profiles (BAL 3.1)

Improved FCAPS

SD-BNG

PRODUCTION

Using ONF software in Akraino

- Keep up with our releases
 - ONFs first priorities are our Operator Partner deployments
 - Partners want the "Latest and Greatest", not old versions
- Help extend our projects
 - Working with ARM to port/integrate SEBA components
 - Development help is welcome, but needs to align with Operator Partner priorities