



Using Akraino to Simplify Edge Stack

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LF Edge – New Umbrella for Edge Projects

Drivers

- › Complementary and aligned vision on multiple LF projects
- › Fuels faster adoption and deployment
- › Edge market is fragmented and creating a larger entity provides leadership

Anchor Projects



EDGE X FOUNDRY™



OPEN GLOSSARY
OF EDGE COMPUTING



Incubation Projects

Fledge

OpenEdge

Premier Members



General Members

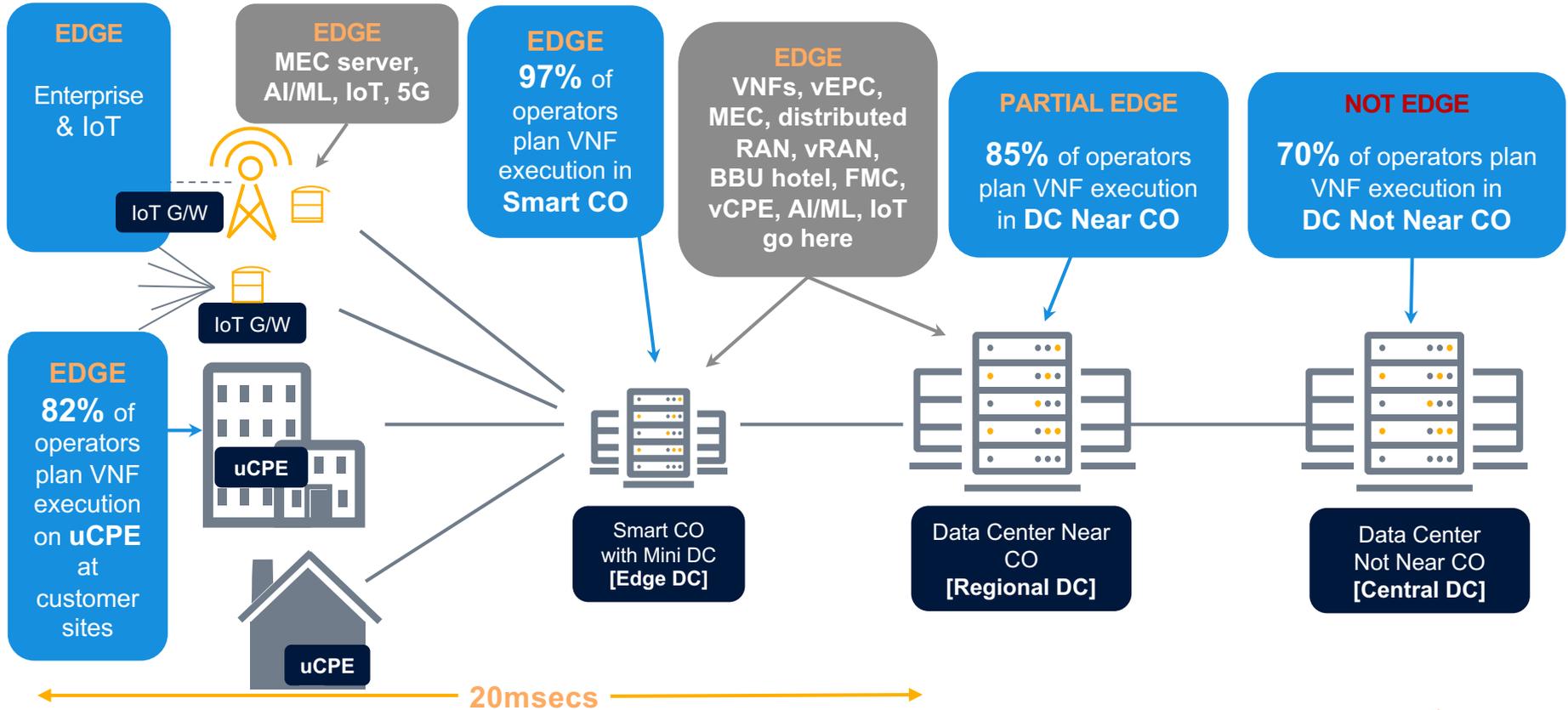


Associate Members and Liaisons



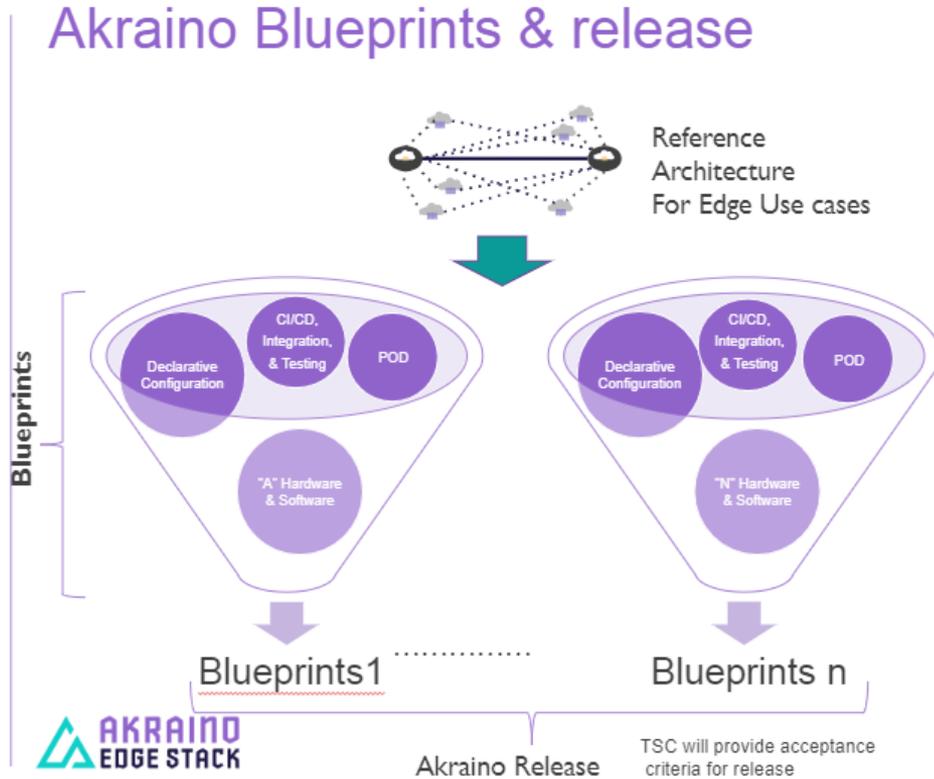
Where are the edges?

Distributed cloud, edge compute, AI/ML, IoT, 5G, VNFs/NFV, FMC



Source: IHS Markit. *NFV Strategies: Global Service Provider Survey*, June 2017; Respondents control 61% of global telecom capex

Akraino R1: Tested & Validated Blueprints



- 11+ Blueprint families, 20 Blueprints under development
- Community-tested & validated on real hardware, Akraino Labs by members and community.

Blueprints - approved & tested declarative configuration based on use cases, set of hardware, POD & software

Reference Architecture - defines Akraino building blocks

Declarative Configuration - hides lower layer complexity to user

CI/CD, Integration & Testing Tools - drive product quality

Why Akraino Blueprint?

Akraino Blueprints



Use Case Based



Fully Integrated End to End Solution (CI / CD)



Proven and Tested by Community



Community Life Cycle Support



Production Quality

Benefits:

Low Cost



Large Scale



Zero Touch Provisioning



Industry Adoption



OCP Whitebox/OEM H/W

Akraino Executive Summary

Akraino is an Edge project targeted to

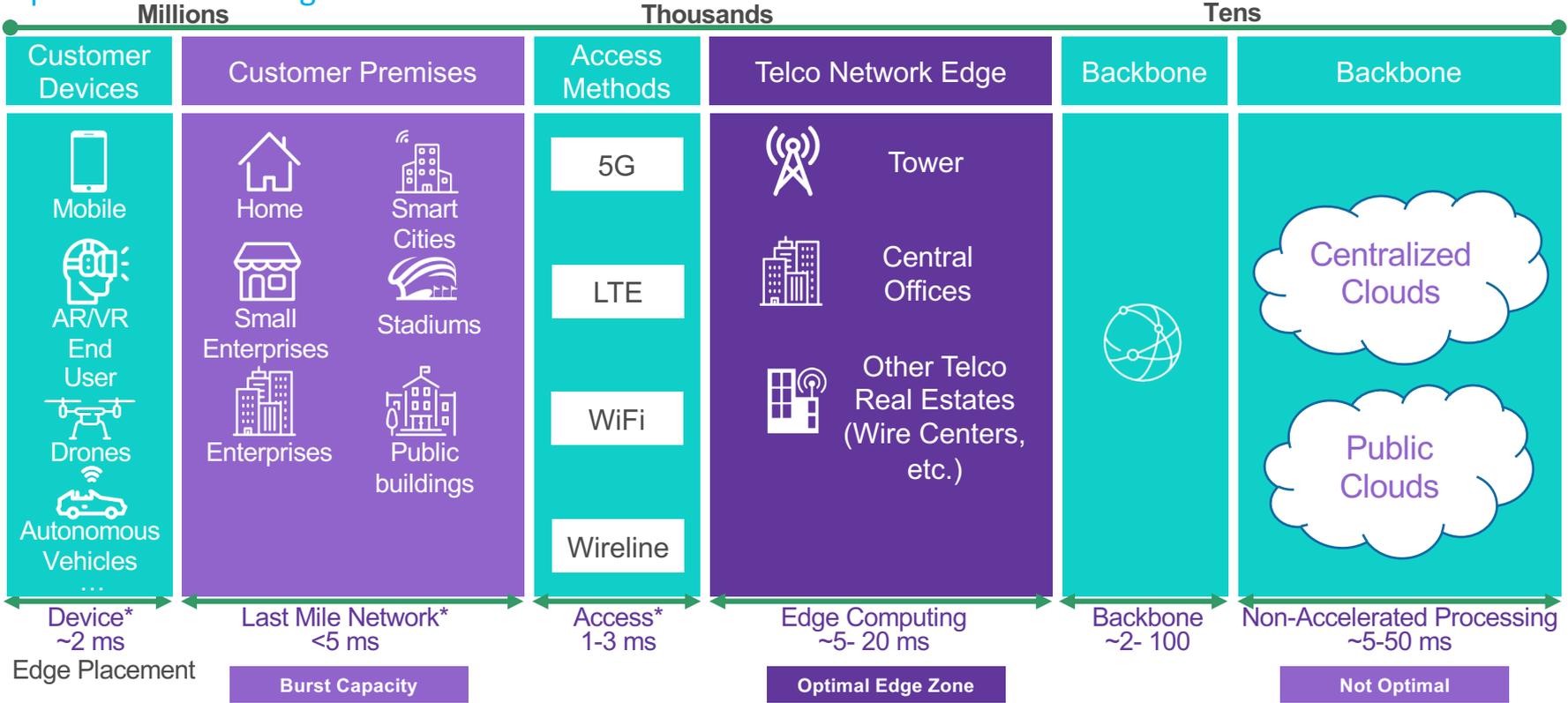
- › Address Telco, Enterprise and Industrial IoT use cases

Mission:

1. Create end to end configuration for a particular Edge Use case which is complete, tested and production deployable meeting the use case characteristics {Integration Projects - Blueprints}
2. Develop projects to support such end to end configuration. Leverage upstream community work as much as possible to avoid duplication. {Feature Projects}
3. Work with broader edge communities to standardize edge APIs {Upstream Open Source Community Coordination - For example, Socialization, so community tools and Blueprints can interoperate. This work can be a combination of an upstream collaboration and development within the Akraino community [i.e. a feature project]}
4. Encourage Vendors and other communities to validate Edge applications and VNFs on top of Akraino blueprints {Validation Project - ensures the working of a Blueprint}

Use Case 1: Operator's Owned Network Edge

Optimal Zone For Edge Placement



* Estimates

Use Case 2: IOT Driving the New Edge for Enterprise

Retail, Transportation, Healthcare...



Cloud Automation

Network Automation

IOT Automation



Retail



Hospitality



Healthcare



Manufacturing



Transportation & Logistics



Enterprises



Enterprise & Data Centers



Public Buildings



"Southbound" Devices, Sensors and Actuators

Akraino R1: Unifying the Edge

NEWS

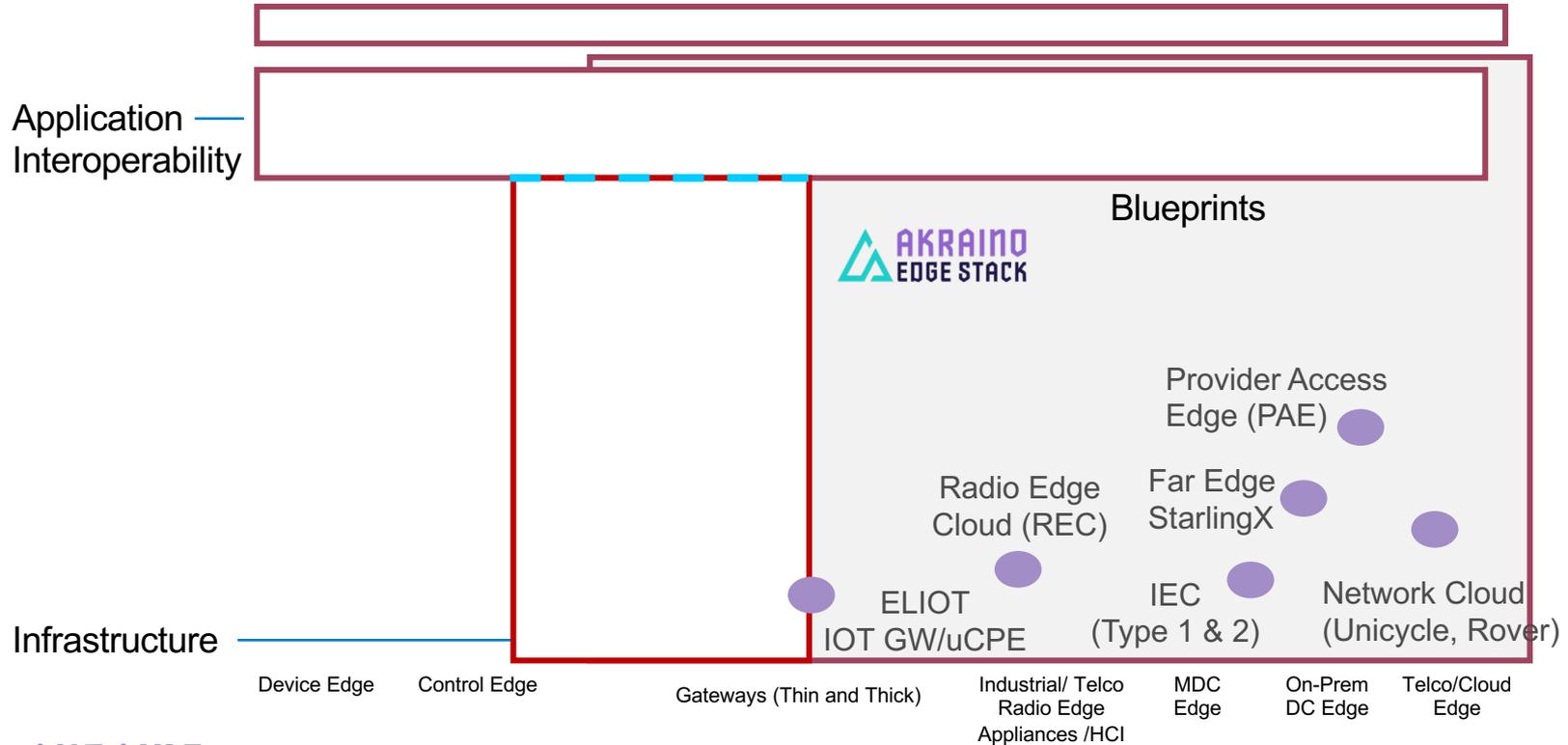
Akraino Edge Stack Issues Premier Release, Sets Framework to Enable 5G, IoT Edge Application Ecosystem

- *Inaugural release unifies multiple sectors of the edge across disciplines, including IoT, Enterprise, Telecom, and Cloud*
- *Delivers tested and validated deployment-ready blueprints*
- *Creates framework for defining and standardizing APIs across stacks, via upstream/downstream collaboration*

SAN FRANCISCO – June 6, 2019 – [LF Edge](#), an umbrella organization within the [Linux Foundation](#) that aims to establish an open, interoperable framework for edge computing independent of hardware, silicon, cloud, or operating system, today announced the availability of [Akraino Edge Stack](#) Release 1 (“Akraino R1”). Created via broad community collaboration, Akraino’s premiere release unlocks the power of intelligent edge with deployable, self-certified blueprints for a diverse set of edge use cases.

Functional View: R1 Blueprints in Akraino Edge Stack

Telco Appliance/REC – SEBA Blueprint targeted for R2 (both Intel & Arm)



Akraino Community Lab

Lab Collaboration



- **Akraino blueprints are validated in the dedicated validation labs**



- **Akraino hosts community lab for additional validation of blueprints**



- **Automated testing of blueprints**

Akraino Edge Stack Technical Community

Technical Community Collaboration



- **Akraino Technical Community Calls: once a week to discuss:**
 - **New Project Proposals**
 - **Collaborate with other communities**



- **Calls scheduled Thursdays at 11:00am-12:00pm ET**

- **<https://wiki.akraino.org/display/AK/Akraino+TSC+Group+Calendar>**

How to get involved..

- Join Akraino Community Events and calls
- Join the projects' mailing lists and participate in the discussions

Key Links:

Website:

<https://www.lfedge.org/projects/akraino>

Wiki:

<https://wiki.akraino.org>

Gerrit:

<https://wiki.akraino.org/display/AK/documentation>

Mail Lists:

<https://lists.akraino.org/g/main>

Blueprints:

<https://wiki.akraino.org/pages/viewpage.action?pageid=1147243>

Calendar:

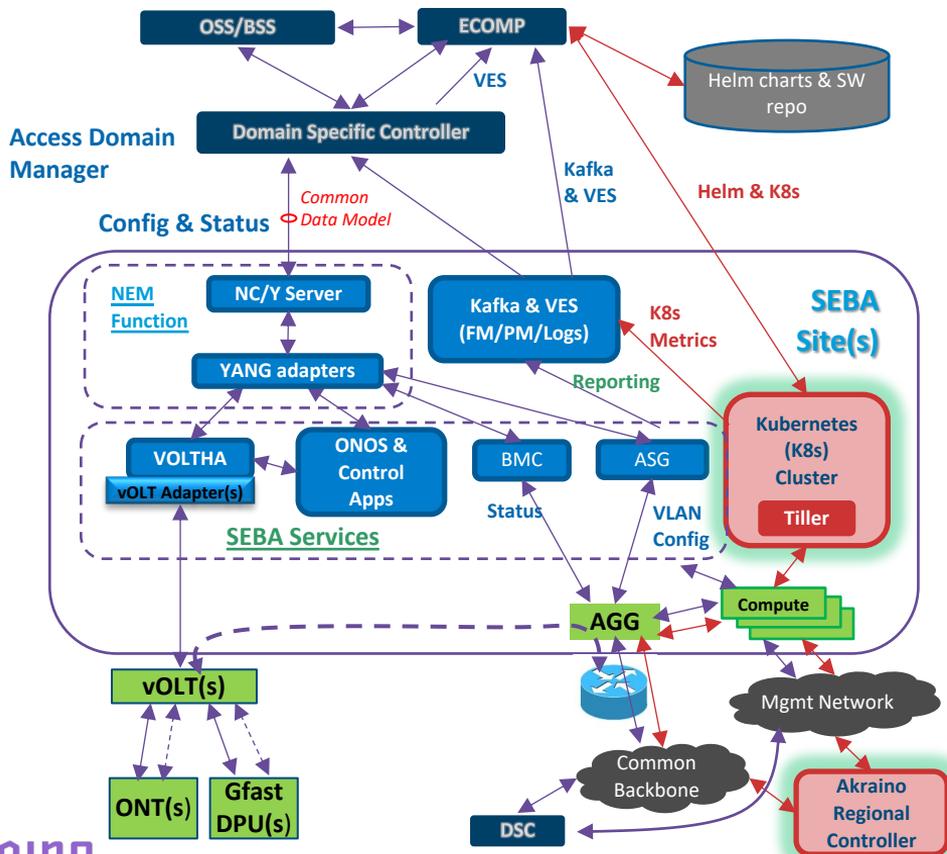
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Powering ONF Software at the Edge using Akraino

SEBA/VOLTHA Deployed and Supported by Akraio

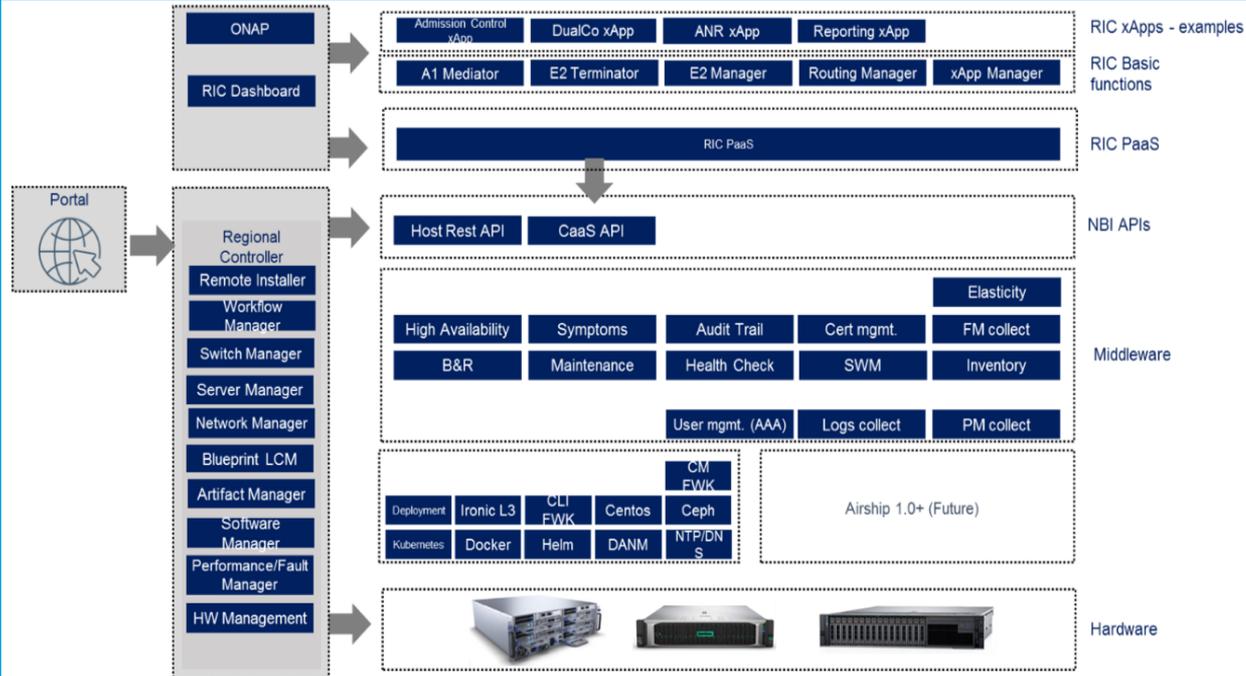
Cross-Domain Correlation & Automation



- **Akraio Regional Controller** – Infrastructure Orchestration of SEBA Site(s) - Install OS, K8s “bare-metal”, Helm server.
- **Akraio POD with Blueprint** – Provides common OS, Infrastructure, Kubernetes, and Helm charts that instantiate SEBA

COMAC / O-RAN Supported by Akraino

Telco Cloud Appliance – Radio Edge Cloud/ SEBA/ COMAC

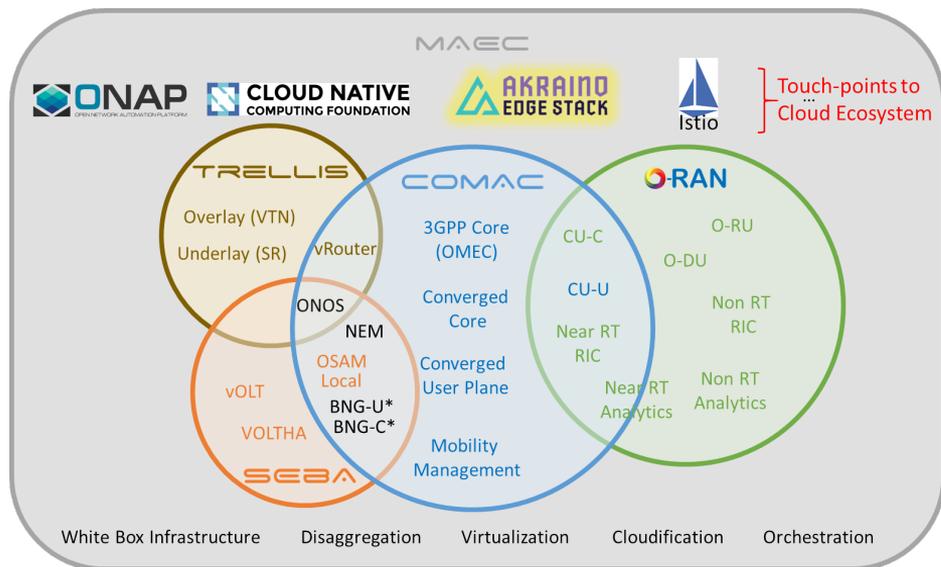


Purpose/Features

- Telco- grade edge cloud platform for near-real time container workloads.
- Automated CD pipeline testing the full software stack

* Target architecture shown here and the fully installable building blocks is in R I

Akraino as a Common Foundation for ONF Projects



- Akraino provides common, “cookie-cutter” method to deploy at scale with automation.
- Onboard bare metal,
- Blueprints instantiate a function, set of functions, or create a cloud instance for the global orchestrator to operate.
- Centralized control and telemetry allow managing many deployments in a unified way.
- Loosely coupled, no lock-in.
Use it or lose it – it’s up to you.

Call for collaboration between Akraino and ONF community

- › Establish stronger cross community collaboration between ONF and Akraino
- › Akraino to integrate ONF Software with Akraino Edge Stack to deliver ETE stack.
- › ONF community to use Akraino BP for ETE functionality testing and in to production deployment
- › Reduce cost by upfront integration, full CI/CD and functionality testing by the community
- › Adopt Whitebox hardware solutions to reduce cost and increase innovation



Thank You

Follow Up Link:
<http://akraino.org>