The New Open "Edge"
IOT+Telecom+Cloud+Enterprise+Industrial
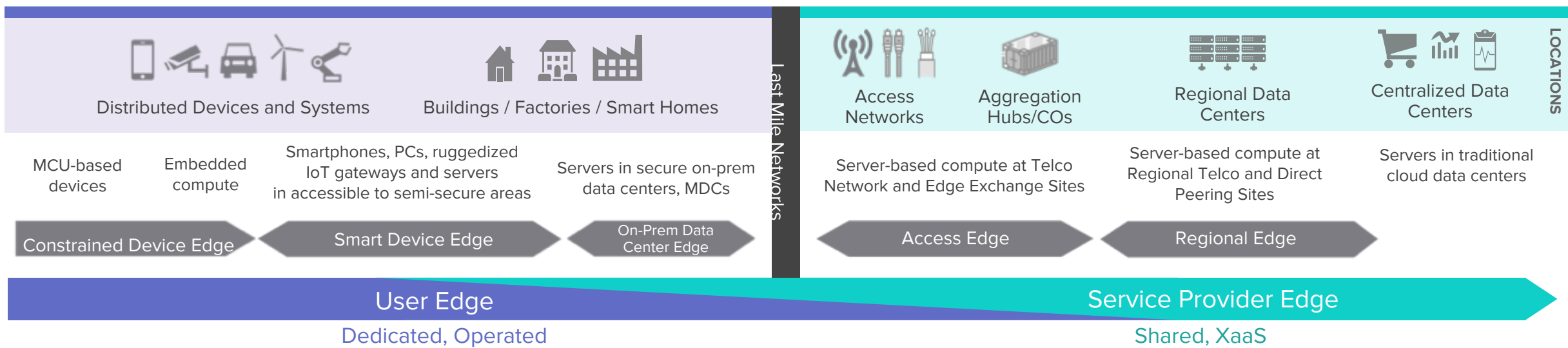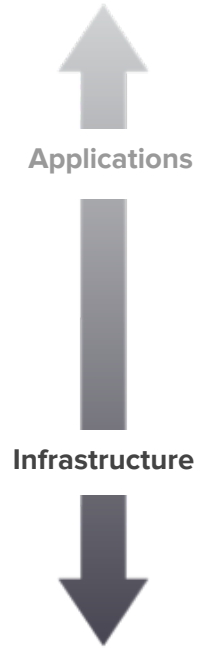
LF EDGE

Arpit Joshipura
GM/SVP Networking & Edge/IOT

May 2022

THE LINUX FOUNDATION

LF Edge Projects

EDGE X FOUNDRY™

PROJECT ALVARIUM

EDGE GALLERY

BAETYL

FLEDGE

HOME EDGE

eKuiper

EVE

OPEN HORIZON

SECURE DEVICE ONBOARD

AKRAINO

Applications

Infrastructure

STATE OF THE EDGE

Research and Reports

| Distributed Devices and Systems | Buildings / Factories / Smart Homes | | Access Networks | Aggregation Hubs/COs | Regional Data Centers | Centralized Data Centers |

LOCATIONS

Last Mile Networks

MCU-based devices

Embedded compute

Smartphones, PCs, ruggedized IoT gateways and servers in accessible to semi-secure areas

Servers in secure on-prem data centers, MDCs

Server-based compute at Telco Network and Edge Exchange Sites

Server-based compute at Regional Telco and Direct Peering Sites

Servers in traditional cloud data centers

Constrained Device Edge

Smart Device Edge

On-Prem Data Center Edge

Access Edge

Regional Edge

User Edge

Service Provider Edge

Dedicated, Operated

Shared, XaaS

Vertical Market Adoption of End to End Open Source Software

OPEN NETWORKING, EDGE AND IOT MARKET ADOPTION

Industrial Manufacturing | Energy (Oil, Gas Utilities) | Commerce & Retail | Home | Automotive | Fleet & Transportation | Logistics | Building Automation | Cities & Government | Healthcare

ENTERPRISE NETWORKING
1. Private Networks 5G/LTE
2. Workloads across Multi-clouds
3. End to end visibility and monitoring

SERVICE PROVIDERS
1. Built on end to end open source 5G & edge
2. Developing countries with 5G and edge
3. Global connectivity

END USERS GOVERNMENT
1. Built on Open Source projects
2. 5G Super Blueprints
3. Unified Cloud, Enterprise, Telco

BUILT ON END TO END OPEN SOURCE PROJECTS

O-RAN ALLIANCE | EVE | HOME EDGE | AKRAINO | EDGEXFOUNDRY | FLEDGE | Anuket

fd.io | ONAP | OPEN DAYLIGHT | kubernetes | DPDK DATA PLANE DEVELOPMENT KIT | tungsten fabric | magma

LF Edge Summary

Vision: Our software & projects enable rapid productization of Edge platforms by leveraging end user input to drive and supply the necessary building blocks (and/or frameworks, reference solutions) to facilitate integration and interoperability for Edge Computing across Telecom Service Providers, Cloud Providers, IOT & Enterprises

Projects

IMPACT - STAGE 3
GROWTH - STAGE 2
AT LARGE - STAGE 1

AKRAINO EDGE X FOUNDRY

EVE FLEDGE HOME EDGE OPEN HORIZON STATE OF THE EDGE

BAETYL SECURE DEVICE ONBOARD eKuiper PROJECT ALVARIUM

Premier Members

altran AMD AMERICAN TOWER arm AVEVA AT&T Baidu 百度 Charter COMMUNICATIONS DELL Technologies

DIANOMIC EQUINIX ERICSSON FUJITSU FUTUREWEI Technologies hp HUAWEI IBM intel NTT

Radisys redhat SAMSUNG Tencent 腾讯 vmware WD Western Digital ZEDEDA

LF Edge Accelerating Community Collaboration

Participation from Service Providers (Telco, Cloud, Cable), IOT, Enterprise ecosystem

25+%

New Member
Y/Y increase

80%

New Projects increase
SOTE, Open Horizon, SDO…

25+

Global Deployments &
Commercial Products

**8M+
/30+**

EdgeX Downloads and Akraino
Blueprints in development
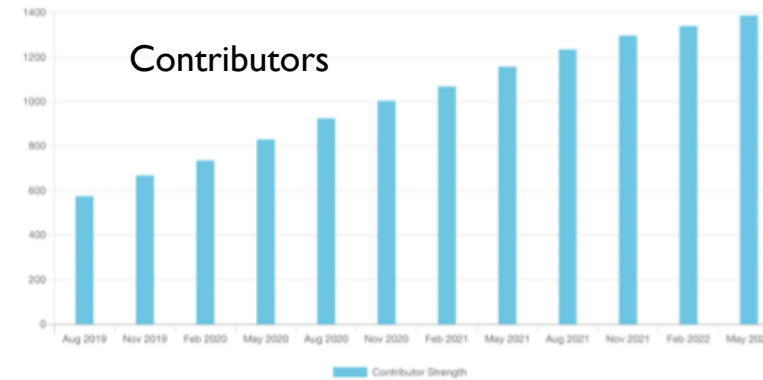
Contributors

The contributor strength **increased** by **140%** during the last 3 Years.

Commits

An average of **36.77K** commits were pushed by active code contributors during the last 3 Years.

26k global mentions since launch

THE LINUX FOUNDATION

LF EDGE

2021 State of the Edge Report

- Aspects of Edge Studied

  › Community Standardization of Edge Terminology

  › Market Size / Growth: A use case driven market forecast of the growth and value of edge infrastructure through 2028.

  › Critical Infrastructure: Edge data centers, wireless towers & cable head ends, traditional interconnection, and service providers.

  › Edge Hardware: Key trends, processor platforms, open hardware, virtual networking and storage.

  › Networks & Networking: The networking ecosystem, SD-WAN, edge exchanges, and the wireless edge.

  › Software at the Edge: The "new edge" stack, code at the edge, orchestration, serverless, hyperconverged, and marketplaces.

Download Today

landscape.lfedge.org

Premier Members

General Members

Associate Members and Liaisons

THE LINUX FOUNDATION   LF EDGE

Edge is part of the end to end ecosystem through LF Networking 5G Super Blueprints

LF Edge projects are an Integral part of 5G Super Blueprints

LF NETWORKING →

LF EDGE →

〰 magma →

CLOUD NATIVE COMPUTING FOUNDATION →

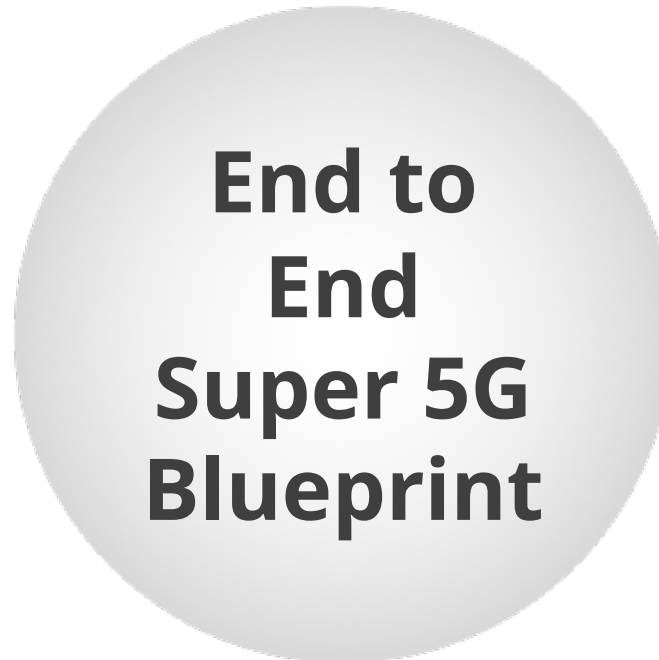**O-RAN** ALLIANCE **SOFTWARE COMMUNITY** →

End to End Super 5G Blueprint

← Cloud Native 5G Demo

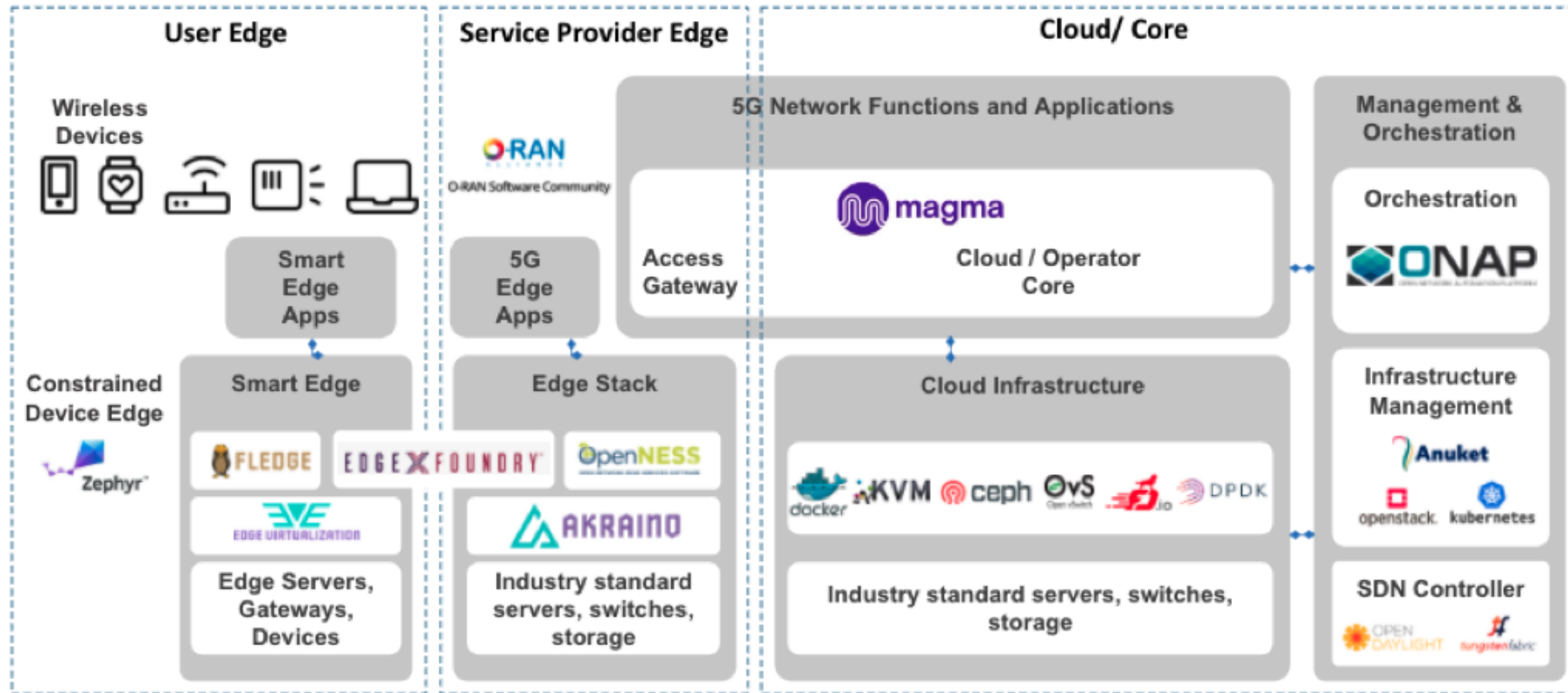← Private LTE/5G ICN Akraino

← ONAP 5G Use Case

THIS NEW BLUEPRINT is the community vehicle to collaborate and create end to end 5G solutions

⬛ THE **LINUX** FOUNDATION

LF EDGE

5G Super Blueprint

LF Open Source Component Projects for 5G

User Edge | Service Provider Edge | Cloud/ Core

Wireless Devices

5G Network Functions and Applications — magma — Cloud / Operator Core

Management & Orchestration — Orchestration — ONAP

Access Gateway

Smart Edge Apps | 5G Edge Apps

Constrained Device Edge — Zephyr

Smart Edge — FLEDGE, EDGEXFOUNDRY, OpenNESS, EDGE VIRTUALIZATION

Edge Stack — AKRAINO

Cloud Infrastructure — docker, KVM, ceph, OvS, .io, DPDK

Infrastructure Management — Anuket, openstack, kubernetes

Edge Servers, Gateways, Devices | Industry standard servers, switches, storage | Industry standard servers, switches, storage

SDN Controller — OPEN DAYLIGHT, tungstenfabric

O-RAN — O-RAN Software Community

Learn more: https://www.lfnetworking.org/5g-super-blueprint/

Read the FAQ: https://wiki.lfnetworking.org/display/LN/5G+Super+Blueprint+FAQ

THE LINUX FOUNDATION

LF EDGE

LF Edge: Key Takeaways

1. Harmonizing Open Source Edge Communities across IOT, Enterprise, Cloud & Telecom

2. Keeping LF Edge Open & Interoperable with
   › Hardware, Silicon, Cloud, OS, Protocol independence
   › Bringing the best of telecom, cloud and enterprise – location, latency & mobility
   › In collaboration with Consortiums/SDO (IIC, AECC, OEC, ETSI)

3. Hosted by the Linux Foundation similar to other Open Source Communities like CNCF (Kubernetes), LF Networking (ONAP) and many more.

Get Involved in the LF Edge Technical Communities

› Participation in LF Edge Projects is open to all

› Getting involved in the technical communities is the best way to learn

  › **Step 1:** Get a Linux Foundation ID Here: https://identity.linuxfoundation.org/

  › **Step 2:** Visit LF Edge Wiki (https://wiki.lfedge.org/)

  › **Step 3:** Join workflows for the projects and working groups, subscribe to maili contribute!

Way to participate:

November 15 – November 16

OPEN
NETWORKING
& EDGE
SUMMIT

NORTH AMERICA

We're excited to announce that the Open Networking & Edge Summit will be held November 15-16 in Seattle, WA USA. We hope to be seeing many of you in person at last! The event will be followed by a two-day LFN Developer & Testing Forum (Nov 17-18) in the same venue. We'll be sharing more information as it becomes available, but in the meantime: SAVE THE DATE!

› Attend project meetings	› Analyze requirements	› Provide feedback through VSFG
› Attend developer events	› Define tests / processes	› Host and staff a community lab
› Join approved projects	› Review and submit code patches	› Answer questions
› Propose a project	› Build upstream relationships	› Give a talk / training
› Write documentation	› Contribute upstream code	› Create a demo
› Contribute use cases		› Evangelize LFE and its projects