

# LF Edge TAC

Technical Advisory Council

 LF EDGE

27 February 2019

 THE **LINUX** FOUNDATION

# LF Edge TAC - What do we need to get started?



## LF Edge Technical Mission

1. LF Edge Charter document is very high level
2. Need Board and TAC approved LF Edge Technical Mission (this is important to avoid confusions)
3. TAC can develop a version and send it to the board for review and approval.
4. This could be a section under TAC PLD??
5. Action Item:- TAC develop a version. Additional volunteers needed from each existing project



## TAC PLD Document

Proposed content & Approach on Next steps

1. Board approved LF Edge's mission sets the vision to the TAC
2. TAC to improve and baseline the PLD
  1. Goals (Sets the priority)
  2. Existing project & what is it is addressing (Clear multi- dimensional view)
  3. Standards driven by LF Edge
  4. Problem space that needs work (within existing projects vs. new area)
  5. Evaluation criteria of new & incoming projects

# LF Edge Mission

What we have now in Technical Charter about the LF Edge Technology?

Mission and Scope of the LF Edge Foundation. a) The primary mission of the LF Edge Foundation (the “Directed Fund”) is to raise, budget and spend funds in support of various open source projects relating to development of an edge computing software stack, including infrastructure and support initiatives related thereto (each a “Technical Project”) in accordance with the provisions of this charter (the “Charter”). The governance of each Technical Project is as set forth in the applicable charter for each Technical Project.

What additions we would need to articulate the Technical mission?

1. How LF Edge would encourage open standards (e.g., APIs) for the industry?
2. What are the Edge use cases and Industry vectors it would focus?
3. What are the gaps in industry it would address?
4. How it would encourage collaboration within LF Edge and across the industry?
5. What are governed within each project vs. across the projects?
6. How each project should share the fund/resources?
7. Vetting process for the incoming projects?

**Action Item:** - Each existing project’s representative to participate + Sub-group (volunteers) to develop the initial draft. We will repurpose the TAC call to discuss the changes. Additional calls are setup by the sub-group.

# TAC PLD

Areas of improvement (in addition to adding Technical mission)

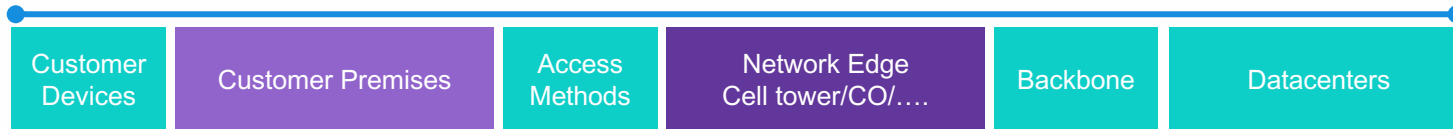
1. LF Edge mission in picture for ease of understanding (multi-dimensional view)
  1. Show how each existing projects are fit-in within the mission ( this would avoid duplication/overlap)
  2. Where the standards are developed
  3. Industry sector
  4. Etc.,
2. Existing project & what is it is addressing (Clear multi- dimensional view)
3. Standards driven by LF Edge (where it needs contribution)
4. Problem space that needs work (within existing projects vs. new area)
5. Evaluation criteria of new & incoming projects
  1. Each incoming project to map where they fit in with in LF Edge Mission
    1. Industry sector
    2. Use cases
    3. Standards
    4. Etc.,
  2. Mapping of each projects by Functionality
  3. Incubation review & code demo
  4. Project represented Sub-committee review to understand the overlap.

Develop Standard pictures to show where each projects fit within the mission

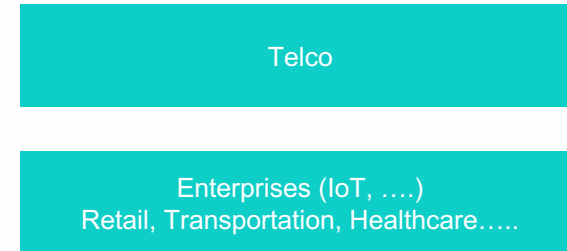
Next few slides are samples only

# Multi- dimensional view of LF Edge Projects

## Deployment types

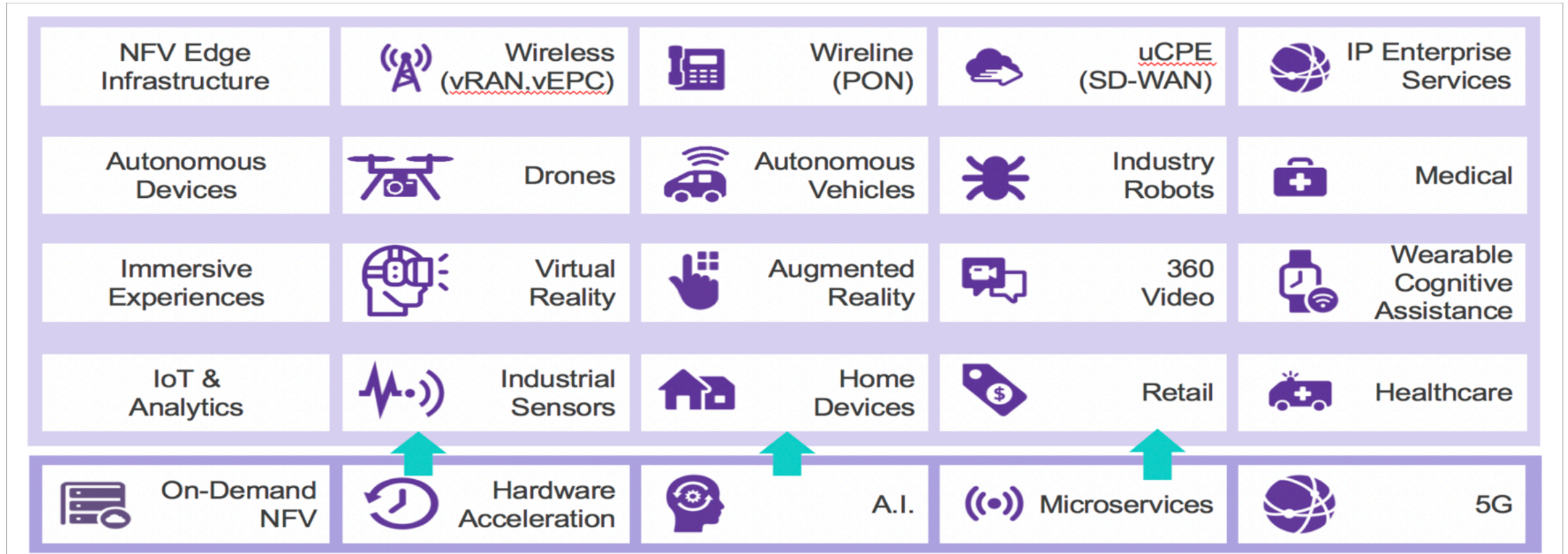


## Industry Vectors



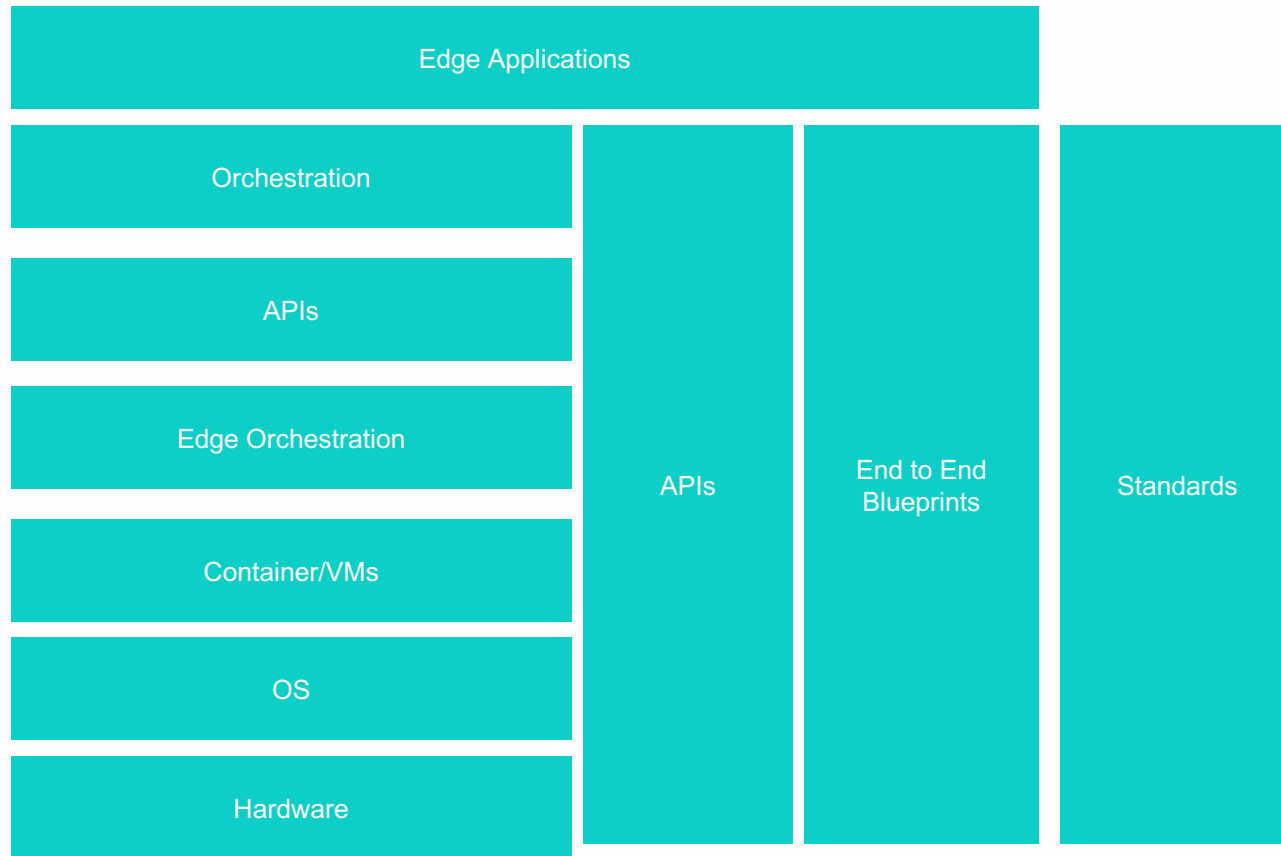
# Multi- dimensional view of LF Edge Projects

Use Cases: (example only)



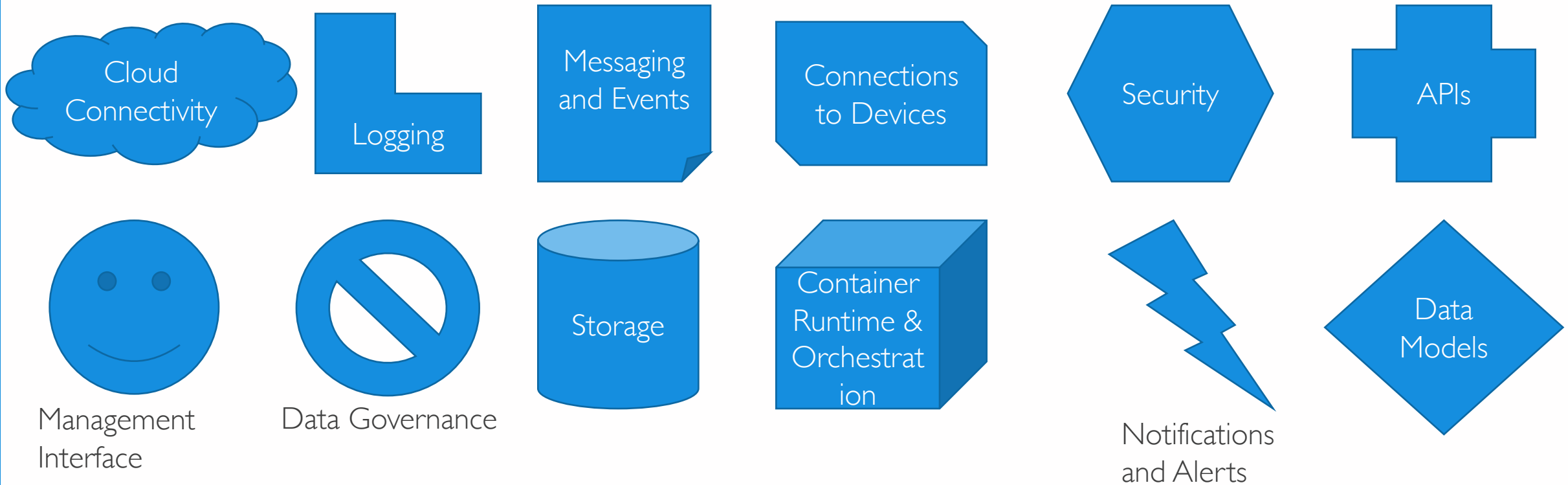
# Multi- dimensional view of LF Edge Projects

## Stack being addressed





# Mapping of Edge Projects by Functionality



# Mapping of Edge Projects by Functionality ( example)

Functionality	Akraino Blueprints	EdgeX Foundry	Project EVE	Home Edge
Cloud Connectivity				
Security & Identity				
Notifications & Alerts				
Messaging & Events				
Data Governance				
Storage & Persistence				
Management UI				
Container Runtime & Orch				
Data Models				
APIs & SDK				
Device Connectivity				
ML Model Management				
Application Layer				

# Additional details about the project (example)

Mission & Scope statement

User community

Code details (current progress)

Community

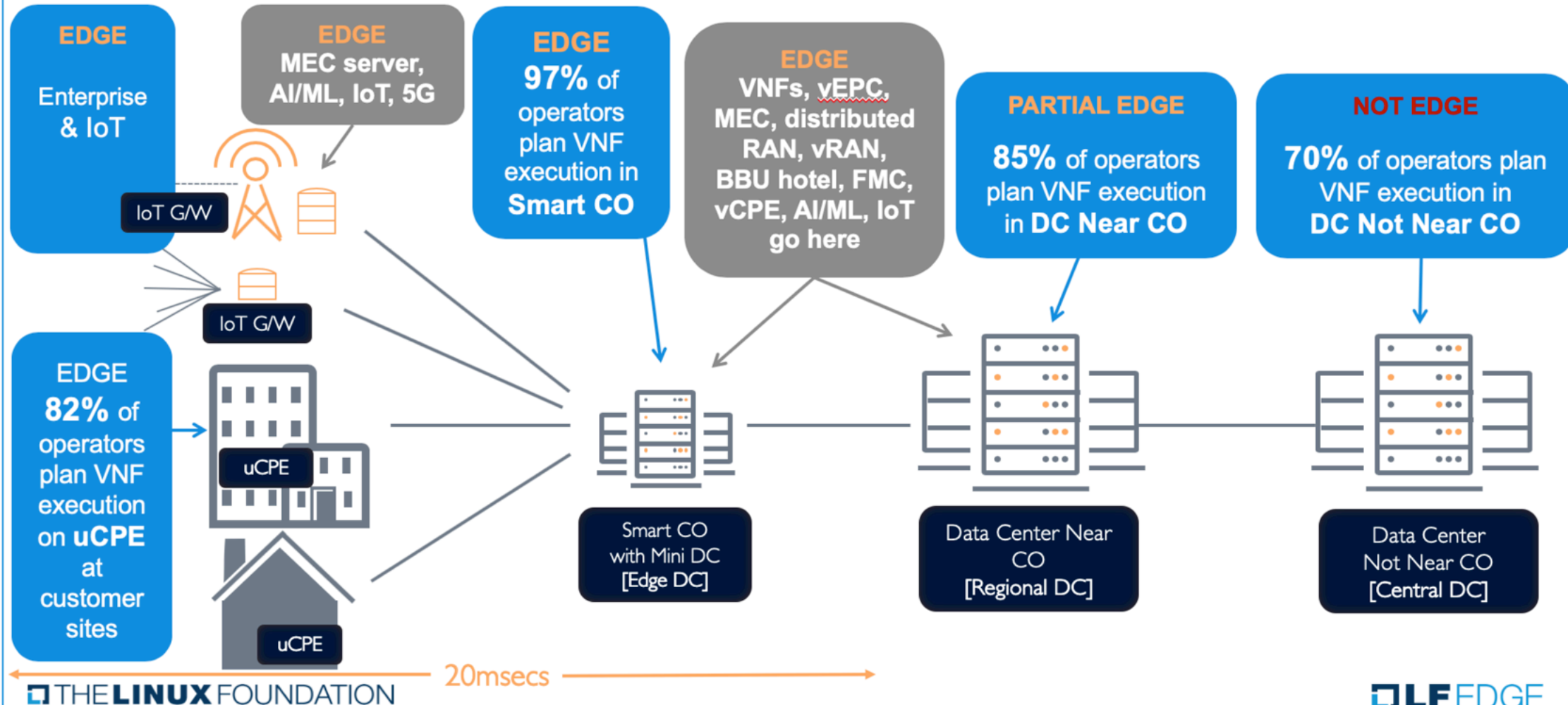
Committers

Existing slides which requires changes

# Definition of the Edge(s)

## Where are the edges?

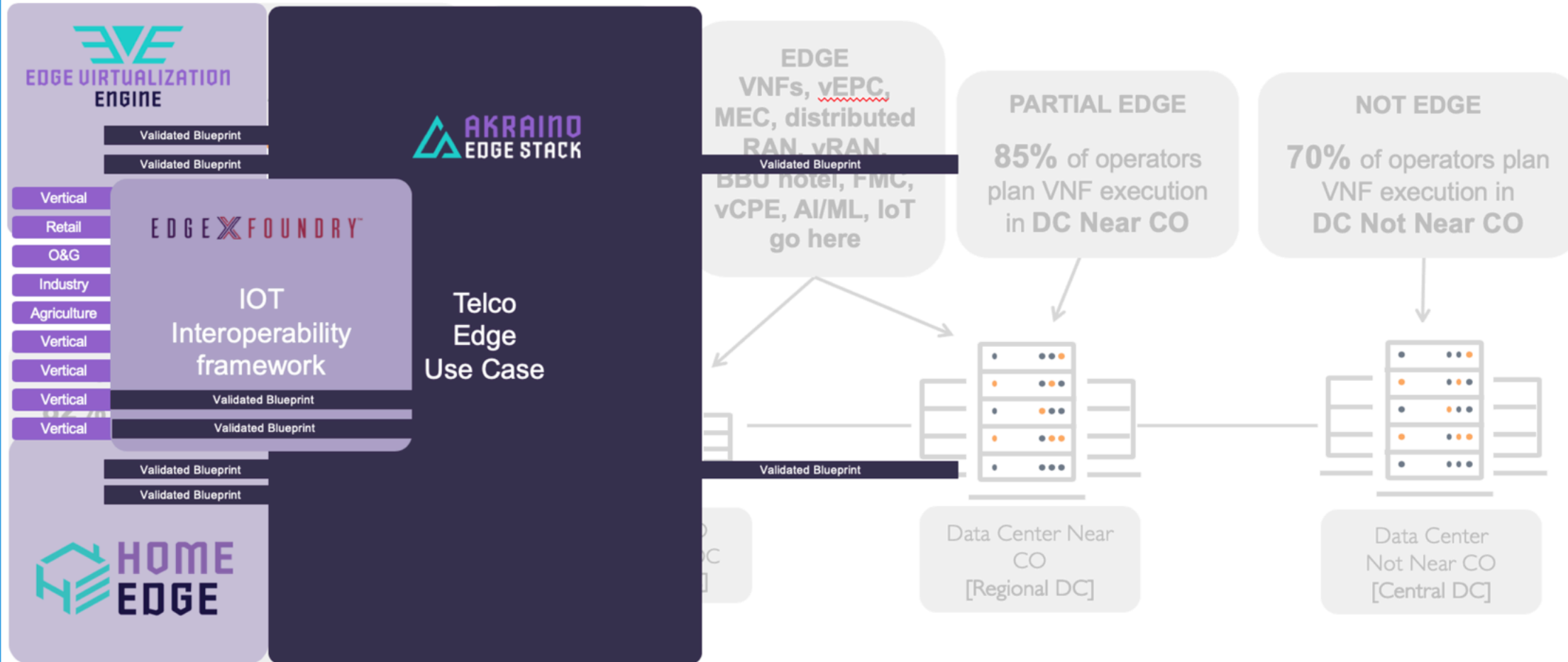
Distributed cloud, edge compute, AI/ML, IoT, 5G, VNFs/NFV, FMC



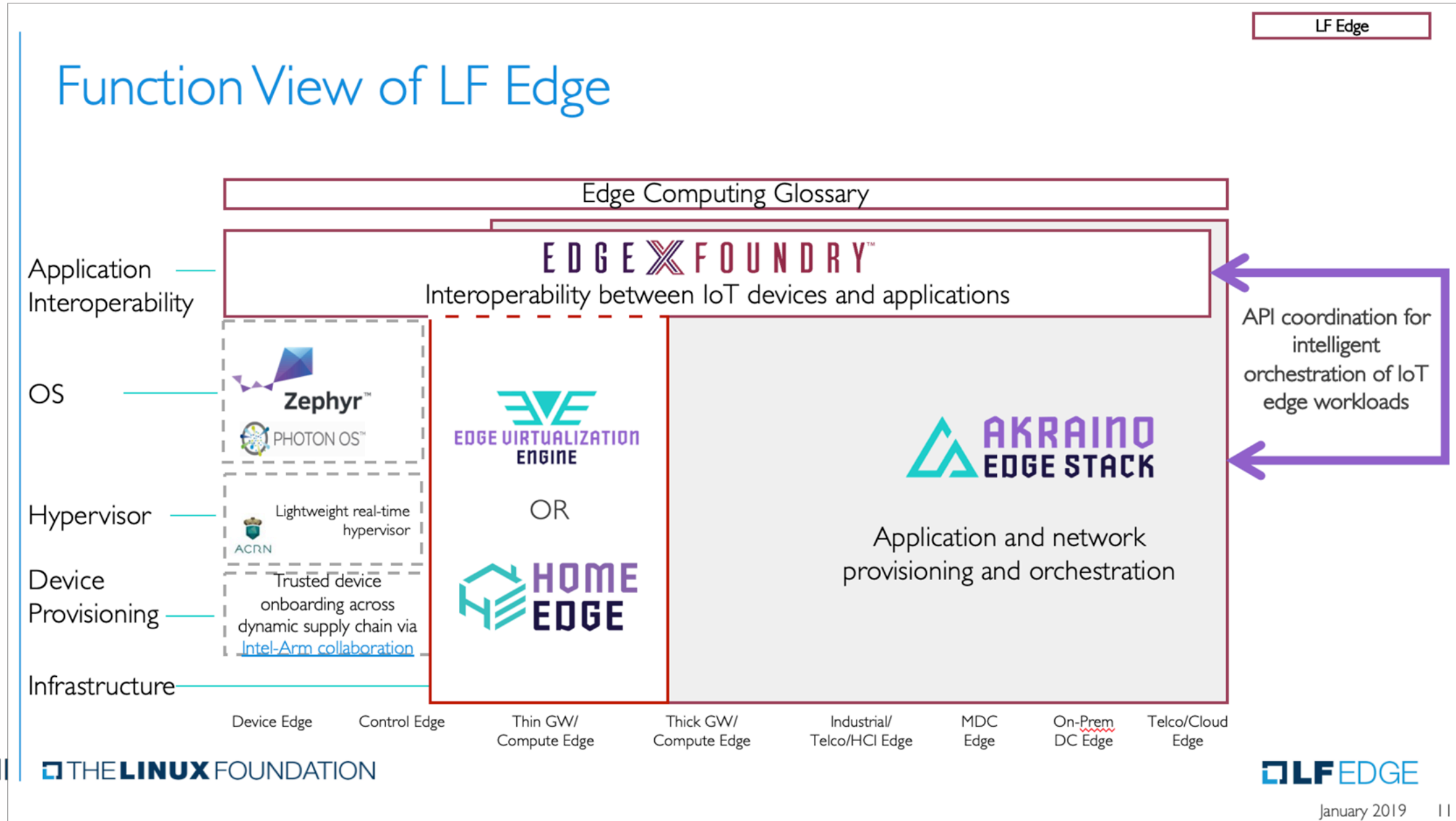
# Mapping of Projects to Edge Location Types

## LF Anchor projects for Edge

Akraino and EdgeX Foundry are complementary open source projects addressing Telecom, Enterprise and IOT edge

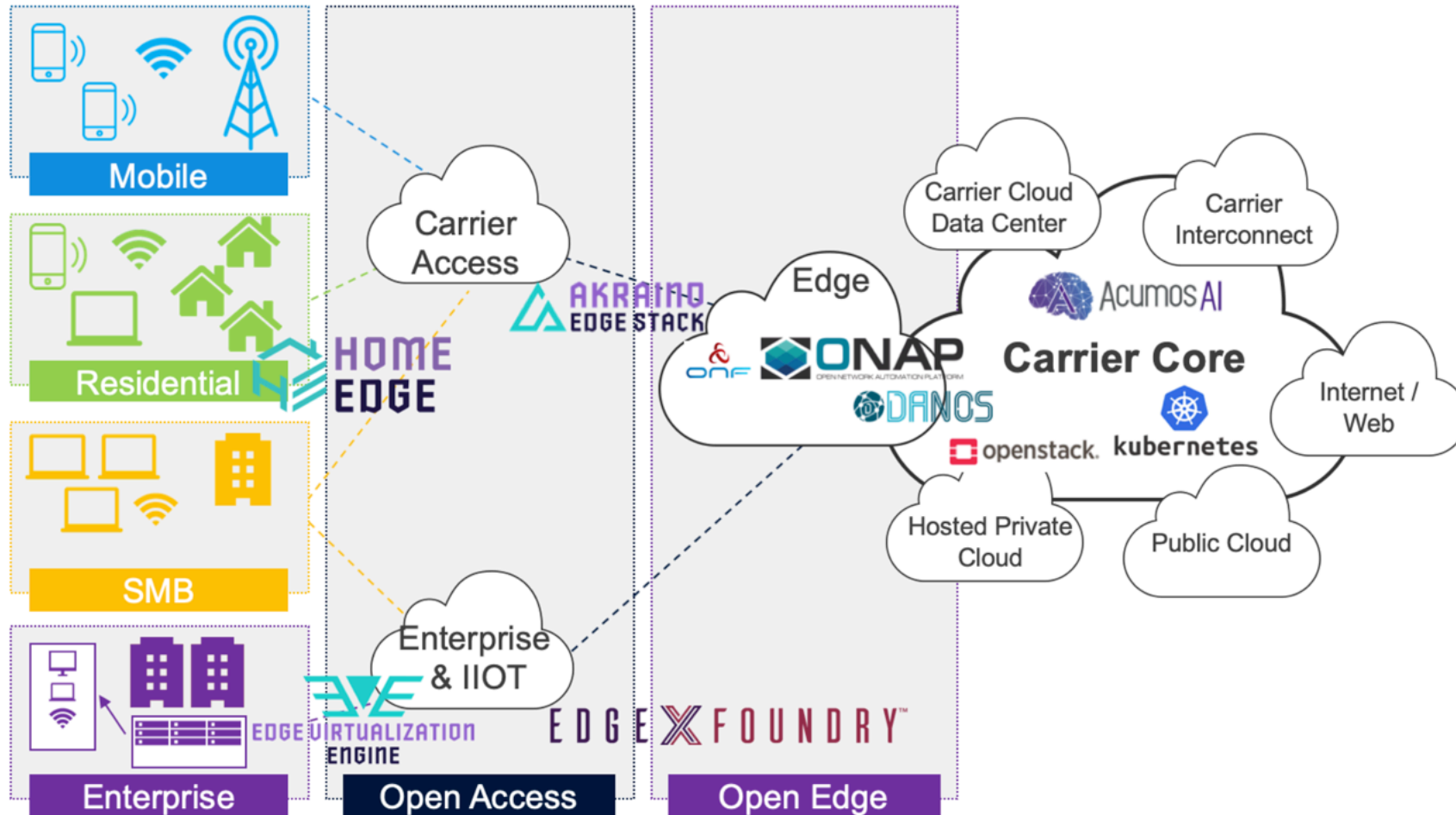


# Mapping of Edge Projects by Functionality



# Mapping of Edge Projects to Standards

Bringing It All Together – LF Open Source Edge  
With Complementary Standards, Ref Arch and Ref Implementations



## Standards & Orgs for Edge



IoT Alliances & Consortiums



## Other Edge Activities





# Akraino Example

# Akraino Edge Stack - Mission

## Mission and Scope of the Project – Technical Charter

- a. The mission of the Project is to foster an open source community at the Edge of the Network to enable new services, ecosystems and applications that rely on the power of accelerated processing to bring the edge of the cloud closer to end users and devices.
- b. The scope of the Project includes software development under an OSI approved open source license supporting the mission, including documentation, testing, integration and the creation of other artifacts that aid the development, deployment, operation or adoption of the open source software project.

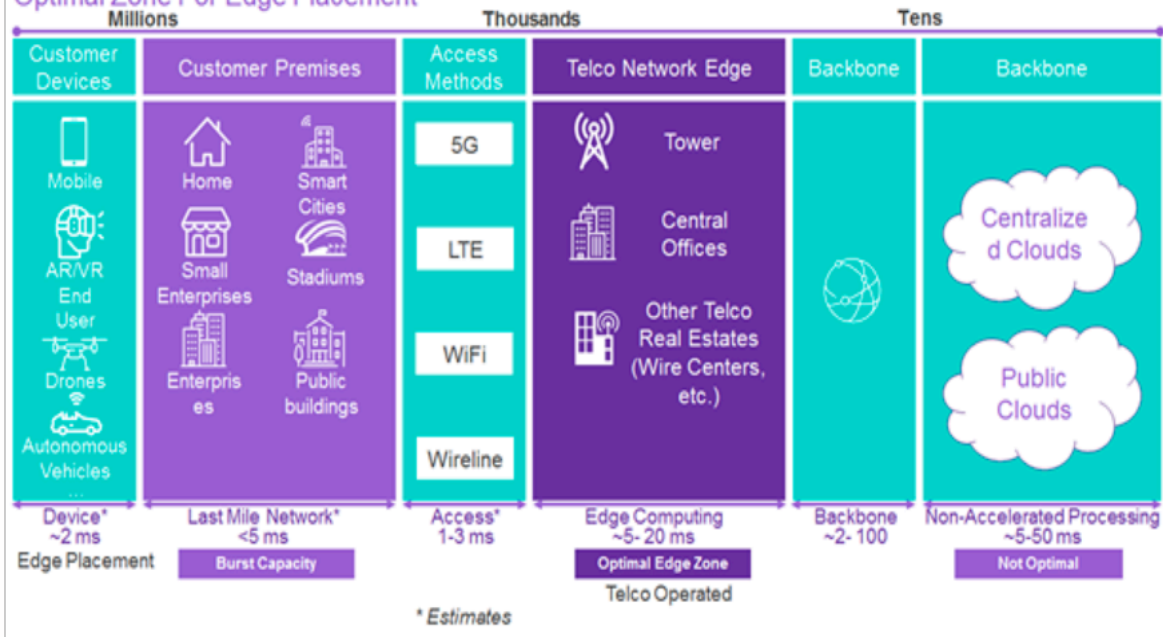
## The Akraino Edge Stack Technical mission to focus on following areas

- a) 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}.  
Production deployable means the blueprint has passed unit and integration testing and meets the blueprint's use case characteristics.
- b) Develop projects to support such end to end configuration. Leverage upstream community work as much as possible to avoid duplication. {Feature Projects}
- c) 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]}
- d) Encourage Vendors and other communities to validate Edge applications and Virtual Network Functions on top of Akraino blueprints {Validation Project - ensures the working of a Blueprint}
- e) In order to have focused work in support of initial releases, the Akraino community preference is to support Edge Blueprints related to enterprise and industrial IoT, and carrier edge network use cases. Board has the authority to define, modify, prioritize any additional industry sectors that need to be supported by the Akraino Edge Stack releases.
- f) The Edge cloud stack placement could vary between Telco Offices to Customer premise and anything in between. Akraino Edge Stack community blueprints should be capable to deploy and address different edge cloud placement options.
- g) As an example, the picture below illustrates the enterprise edge and carrier edge network Edge use cases and possible edge placement.

# Akraino Edge Stack – Use Case View

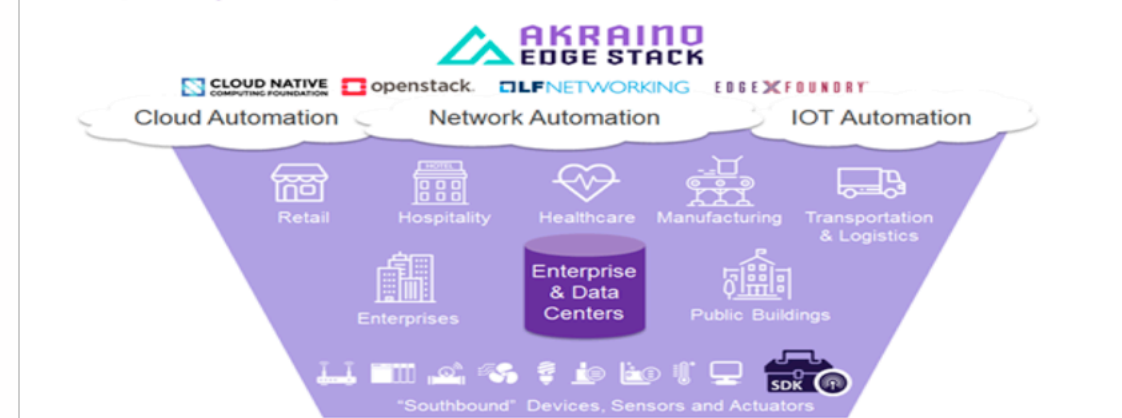
## Use Case 1: Operator's Owned Network Edge

Optimal Zone For Edge Placement



## Use Case 2: IOT Driving the New Edge for Enterprise

Retail, Transportation, Healthcare...



# Next Steps

# Next Steps

1. Continue to setup sub-group calls twice weekly
  1. Action owner: LF (Bret)
  2. Need existing Project representatives participation
2. Use the every Week TAC call to discuss the outcome
3. F2F meeting is very critical to bring a closure