

# Existing Project Taxonomy

The below is a snapshot of where the existing projects under LF Edge currently sit. Updates to the taxonomies should be requested through the Project's TAC representative. The Glossary Project will further define the terminology as outlined below.

Last Updated:

- Akraino (May 16, 2019)
- Alvarium (September 7, 2022)
- Baetyl (OpenEdge) (July 22, 2019)
- EdgeX Foundry (September 19, 2022)
- eKuiper (June 8, 2021)
- Fledge (FogLAMP) (June 27, 2019)
- Home Edge (October 14, 2022)
- Open Horizon (April 9, 2020)
- Project EVE (April 3, 2023)
- Fido Device Onboard (August 9, 2023)
- Fledge (July 28, 2021)

## Existing Projects by Function (Provide, Consume, Facilitate, or N/A; Add context as needed)

| Functions                         | Akraino | Baetyl                        | EdgeX      | eKuiper                   | Fledge                                                                                                            | Home Edge         | Open Horizon                 | Project EVE                               | FDO                                                                                                     |
|-----------------------------------|---------|-------------------------------|------------|---------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------|
| APIs                              | Provide | Provide                       | Provide    | Provide                   | Provide, Consume, Facilitate - Microcontroller Example - South Microservice ( <a href="#">esp8266</a> )           | Provide           | Provide, Consume             | Provide                                   | Provides                                                                                                |
| Cloud Connectivity                | Provide | Provide, not only Baidu Cloud | Provide    | Provide                   | Provide, Consume and Facilitate - North repos, GCP, O SI-OMF, Azure                                               | Provide           | Consume                      | Provide                                   | Consumes                                                                                                |
| Container Runtime & Orchestration | Provide | Consume                       | Consume    | Consume                   | Consume - ( <a href="#">debian</a> , <a href="#">rpm</a> , <a href="#">docker</a> , <a href="#">Project Eve</a> ) | Consume -(Docker) | Provide, Consume, Facilitate | Provide for Edge Container                | Consumes                                                                                                |
| Data Governance                   | NA      | Provide                       | N/A        | N/A                       | Provide and Facilitate - Auditing logs and asset tracking.                                                        | In Future         | N/A                          |                                           | Provide and Facilitate                                                                                  |
| Data Models                       | Provide | N/A                           | Provide    | Provide                   | Provide, Consume and Facilitate                                                                                   | In Future         | Consume, Facilitate          | Provide for Edge Container (not app data) | N/A                                                                                                     |
| Device Connectivity               | Provide | Provide, MQTT protocol        | Provide    | Consume                   | Provide, Consume and Facilitate                                                                                   | Provide           | Consume                      | Provide (incl LTE, WiFi, serial)          | Consumes – HTTP, HTTPS, with architectural support for other connectivity protocols not yet implemented |
| Filters/Pre-processing            | Provide | Provide                       | Provide    | Provide                   | Provide and Facilitate                                                                                            | In Future         | N/A                          |                                           | N/A                                                                                                     |
| Logging                           | Provide | Provide                       | Provide    | Provide                   | Consume                                                                                                           | In Future         | Consume                      | Provide for its own runtime               | Provides                                                                                                |
| Management UI                     | Provide | Provide, not determined yet   | Facilitate | Provide, not open sourced | Provide, Consume and Facilitate                                                                                   | In Future         | N/A                          | Provide for its own runtime               | Provides (some use cases)                                                                               |
| Messaging & Events                | Provide | Provide                       | Provide    | Consume                   | Provide, Consume and Facilitate                                                                                   | In Future         | N/A                          |                                           | Provides                                                                                                |
| Notifications & Alerts            | Provide | Provide, under developing     | Provide    | Consume                   | Provide, Consume and Facilitate                                                                                   | In Future         | N/A                          |                                           | Provides                                                                                                |
| Security                          | Provide | Provide                       | Provide    | Consume                   | Provide, Consume and Facilitate                                                                                   | Provide           | Provide, Consume, Facilitate | Provide                                   | Provides                                                                                                |
| Storage                           | Provide | Provide                       | Provide    | Facilitate                | Provide, Consume and Facilitate - Buffering                                                                       | Provide           | Consume                      | Provide (local virtual disks)             | N/A                                                                                                     |

## Existing Projects by Deployment & Industry Verticals (Support, Possible, N/A; Add context as needed)

| Deployment Type                          | Akraino | Baetyl  | EdgeX    | eKuiper | Fledge   | Home Edge | Open Horizon                       | Project EVE | FDO      |
|------------------------------------------|---------|---------|----------|---------|----------|-----------|------------------------------------|-------------|----------|
| Customer Devices (Edge Nodes)            | Support | Support | Support  | Support | Support  | Support   | Support<br>(Agent)                 | Support     | Support  |
| Customer Premises (DC and Edge Gateways) | Support | Support | Support  | Support | Support  | Support   | Support<br>(Agent, Management Hub) | Support     | Support  |
| Telco Network Edge (MEC and Far-MEC)     | Support | Support | Possible | Support | Possible | NA        | Support<br>(Management Hub)        | Possible    | Possible |
| Telco CO & Regional                      | Support | Support | Possible | Support | Possible | NA        | N/A                                |             | Possible |
| Cloud Edge & CDNs                        | Support | Support | Possible | Support | Possible | Possible  | N/A                                |             | Support  |
| Public Cloud                             | Support | Support | Possible | Support | N/A      | Possible  | N/A                                |             | Support  |
| Private Cloud                            | Support | Support | Possible | Support | N/A      | Possible  | N/A                                |             | Support  |

## Existing Projects by Deployment & Industry Verticals ( or X; Add context as needed)

| Directly applicable Industry/Verticals use cases                                                                                                         | Akraino | Baetyl | EdgeX               | eKuiper | Fledge                                    | Home Edge | Open Horizon | Project EVE | FDO |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|---------------------|---------|-------------------------------------------|-----------|--------------|-------------|-----|
| Automotive / Connected Car                                                                                                                               |         |        | x                   |         | X                                         | X         |              |             |     |
| Chemicals                                                                                                                                                |         | X      |                     |         |                                           | X         |              |             | X   |
| Facilities / Building automation                                                                                                                         |         |        |                     |         |                                           |           |              |             |     |
| Consumer                                                                                                                                                 |         | X      |                     |         | X                                         |           | X            |             | X   |
| Manufacturing                                                                                                                                            |         |        |                     |         | - Production deployments                  | X         |              |             |     |
| Metal & Mining                                                                                                                                           |         |        |                     |         | - PoCs                                    | X         |              |             |     |
| Oil & Gas                                                                                                                                                |         |        |                     |         | - PoCs                                    | X         |              |             |     |
| Pharma                                                                                                                                                   |         | X      |                     |         | - PoCs                                    | X         |              |             | X   |
| Health Care                                                                                                                                              |         | X      | X                   |         | X                                         |           | X            |             | X   |
| Power & Utilities                                                                                                                                        |         |        |                     |         | - Production deployments                  |           |              |             |     |
| Pulp & Paper                                                                                                                                             |         | X      |                     |         |                                           | X         | X            |             | X   |
| Telco Operators                                                                                                                                          |         |        | X                   |         | X                                         | X         |              |             |     |
| Telco/Communications Service Provider (Network Equipment Provider)                                                                                       |         |        | X                   |         | X                                         | X         |              |             |     |
| Transportation (asset tracking)                                                                                                                          |         |        |                     |         | X                                         | X         |              |             |     |
| Supply Chain                                                                                                                                             |         |        |                     |         | X                                         | X         |              |             |     |
| Preventative Maintenance                                                                                                                                 |         |        |                     |         | - Production deployments (Not a vertical) |           |              |             |     |
| Water Utilities                                                                                                                                          |         | X      |                     |         | - PoCs                                    | X         |              |             | X   |
| Security / Surveillance                                                                                                                                  |         |        |                     |         | X                                         |           |              |             |     |
| Retail / Commerce (physical point of sale with customers)                                                                                                |         | X      |                     |         | X                                         | X         |              |             | X   |
| Other - Please add if not listed above (please notify <a href="mailto:TAC-subgroup@lists.lfedge.org">TAC subgroup@lists.lfedge.org</a> when you add one) |         |        | Energy, Smart venue |         |                                           |           |              |             |     |

## Deployments (static v dynamic, connectivity, physical placement) - ( or X; Add context as needed)

| Use Cases                                | Akraino | Baetyl | EdgeX | eKuiper | Fledge | Home Edge | Open Horizon | Project EVE | FDO |
|------------------------------------------|---------|--------|-------|---------|--------|-----------|--------------|-------------|-----|
| Gateways (to Cloud, to other placements) |         |        |       |         |        |           |              |             |     |
| NFV Infrastructure                       |         | X      | X     |         | X      | X         | X            |             | X   |

|                                                                                                                                                                    |  |   |  |  |   |   |  |  |   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|--|--|---|---|--|--|---|
| Stationary during their entire usable life / Fixed placement edge constellations / Assume you always have connectivity and you don't need to store & forward.      |  |   |  |  | X |   |  |  |   |
| Stationary during active periods, but nomadic between activations (e.g., fixed access) / Not always assumed to have connectivity. Don't expect to store & forward. |  |   |  |  | X | X |  |  | X |
| Mobile within a constrained and well-defined space (e.g., in a factory) / Expect to have intermittent connectivity and store & forward.                            |  |   |  |  |   |   |  |  |   |
| Fully mobile (To include: Wearables and Connected Vehicles) / Bursts of connectivity and always store & forward.                                                   |  | X |  |  |   |   |  |  |   |

## Compute Stack Layers (architecture classification) - (Provide, Require, or N/A; Add context as needed)

| Compute Stack Layers | Akraino                 | Baetyl                    | EdgeX   | eKuiper | Fledge  | Home Edge | Open Horizon | Project EVE | FDO                     |
|----------------------|-------------------------|---------------------------|---------|---------|---------|-----------|--------------|-------------|-------------------------|
| APIs                 | Provide                 | Provide                   | Provide | Provide | Provide | Provide   | Require      | Provide     | Provide                 |
| Applications         | Deployed                | Provide                   | Provide | Provide | Provide | N/A       | Require      |             | Provide                 |
| Firmware             | Update and Configure    | Provide, OS as a Firmware | Require | N/A     | Require | N/A       | N/A          |             | Require                 |
| Hardware             | Provision and Configure | Require                   | Require | N/A     | Require | Require   | Require      | Require     | Require                 |
| Orchestration        | Require                 | Require                   | Require | N/A     | N/A     | Provide   | Require      | Provide     | N/A                     |
| OS                   | Require                 | Provide                   | Require | N/A     | Require | Require   | Require      | Provide     | Require                 |
| VM/Containers        | Require                 | Require, vm is optional   | Provide | Provide | Require | Require   | Require      | Provide     | Require, vm is optional |

## Cloud Stack Layers (architecture classification) - (Provide, Require, or N/A; Add context as needed)

| Cloud Stack Layers          | Akraino | Baetyl | EdgeX                                      | eKuiper | Fledge | Home Edge                       | Open Horizon | Project EVE                     | FDO |
|-----------------------------|---------|--------|--------------------------------------------|---------|--------|---------------------------------|--------------|---------------------------------|-----|
| Applications                |         | Yes    | Provide (services can live in cloud layer) | Provide | N/A    | Provide                         | Require      |                                 | Yes |
| Configuration (drive)       |         | Yes    |                                            | Provide | N/A    | N/A                             | Provide      |                                 | Yes |
| Content (management system) |         | Yes    |                                            | Provide | N/A    | N/A                             | Provide      |                                 | Yes |
| IaaS                        |         | No     |                                            | N/A     | N/A    | Provide (at Edge but not cloud) | N/A          | Provide (at Edge but not cloud) | No  |
| PaaS                        |         | Yes    |                                            | N/A     | N/A    | N/A                             | N/A          |                                 | No  |
| Physical Infrastructure     |         | No     |                                            | N/A     | N/A    | N/A                             | N/A          |                                 | No  |
| SaaS                        |         | No     |                                            | N/A     | N/A    | Provide                         | N/A          |                                 | No  |