

Meeting with the ONNX Foundation WG

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 THE **LINUX** FOUNDATION

 **LF AI**

Executive Summary

- › The Linux Foundation is setup to act as a foundation of foundations, supporting the operational programs that enable collaboration but allowing each project to operate under their community's own governance structure - [what works for you](#) generally works for us
 - › We aim to have the governance documented somewhere and that there are clear terms around the licensing as well - we put that into a charter format
 - › We provide a neutral home for trademark ownership, domains, GitHub/social accounts and then let the community decide how to use them

Executive Summary

- › LF AI is an umbrella structure setup to support a community of AI projects and each project is slightly different but usually finds opportunities to work together on integration opportunities to allow combined use as part of a reference ML workflow (e.g. Acumos, Angel, Horovod)
- › LF AI project doesn't disrupt the day to day project operations and often the community likes to evolve how they work over time and that's great too - but it comes from the community
- › LF AI is excited about ONNX and its potential - we invited ONNX and others communities to present options for solving this problem area at the outset. LF AI projects chose to add support for ONNX - our community is eager to work with ONNX

LF AI Project General Hosting Requirements

LF AI New Project Requirements

1. Use an approved OSI open source license (Done)
2. Be sponsored by a LF AI member (Done)
3. Fit within the mission and scope of LF AI (Done)
4. Allow neutral ownership of project assets such as a trademark, domain or GitHub account (the community can define rules and manage them)
5. Have a governance structure documented that allows anyone to participate in the technical community, whether or not a financial member or supporter of the foundation (Done)

Process

1. Prepare a 2 pages proposal following our [template](#)
2. Present the proposal to the LF AI Technical Advisory Counsel (meets every 2 weeks)
3. TAC vote occurs on the same call
4. Onboard the project

Perhaps target October 10 for a TAC review and vote discussion if ONNX will be ready

Discussion, Q&A

The LF AI Foundation

Web site: <https://lfdl.io>

Landscape: <http://l.lfdl.io>

GitHub: <https://github.com/LFDLFoundation>

Wiki: <https://wiki.deeplearningfoundation.org>

What is the LF AI Foundation?

- LF AI is a an LF umbrella foundation founded in March 2018 to support collaboration and open source innovation in the AI, ML, and DL domains
- LF AI members are collaborating to create a neutral environment with an open governance for harmonization and acceleration of separate technical projects focused on AI, ML, and DL technologies

Governance

- › LF AI is a single funding effort to support technical projects hosted under the Foundation
- › Technical projects have their own technical governance following our principle of separation of technical governance from funding governance
- › The Foundation's Charter is available from <https://lfai.foundation>

Members

Premier Members



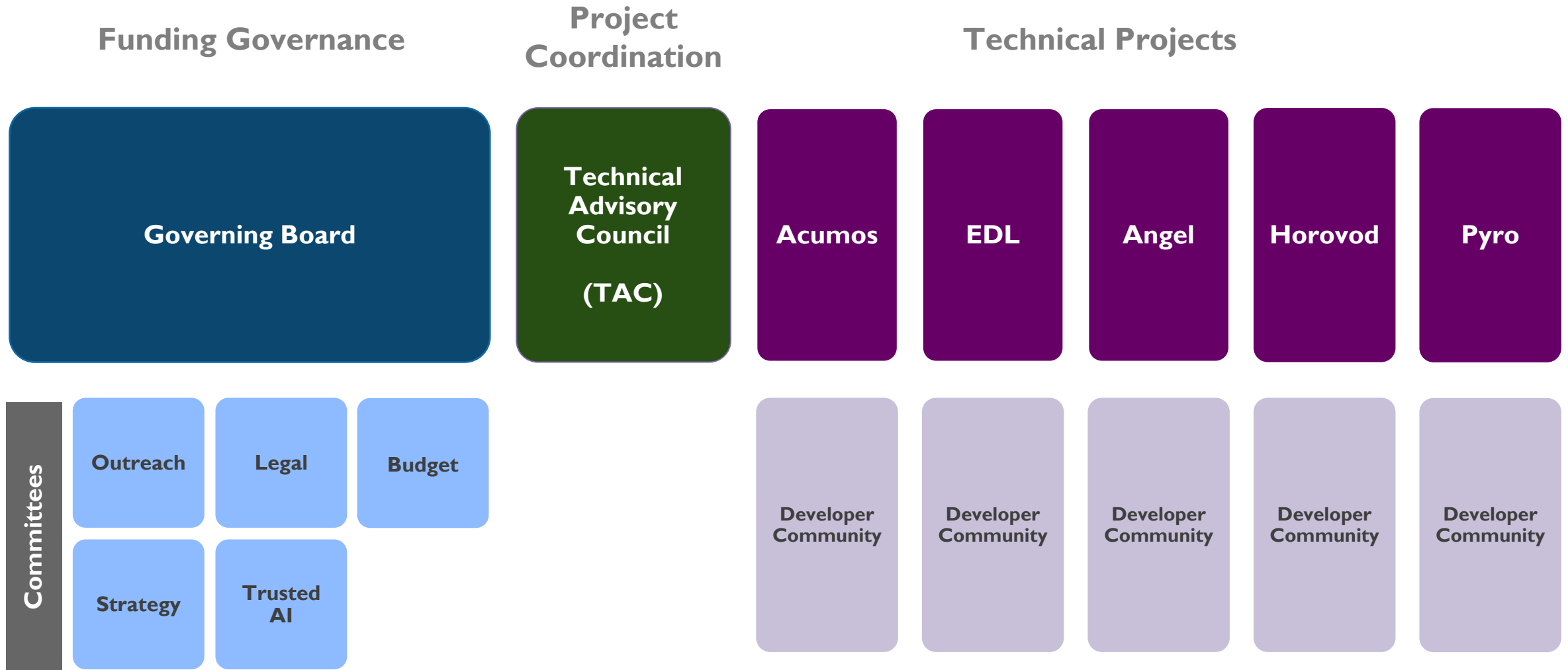
General Members



Associate Members

The Associate membership category is limited to academic and nonprofit institutions respectively and requires approval by the Governing Board.

Structure



Hosted Projects



Machine learning platform and distributed marketplace for ML models.

Support onboarding ONNX models since Boreas release



A high-performance distributed ML platform based on Parameter Server, running on YARN and Apache Spark.



A framework designed to help DL cloud service providers to build cluster cloud services using different DL frameworks.



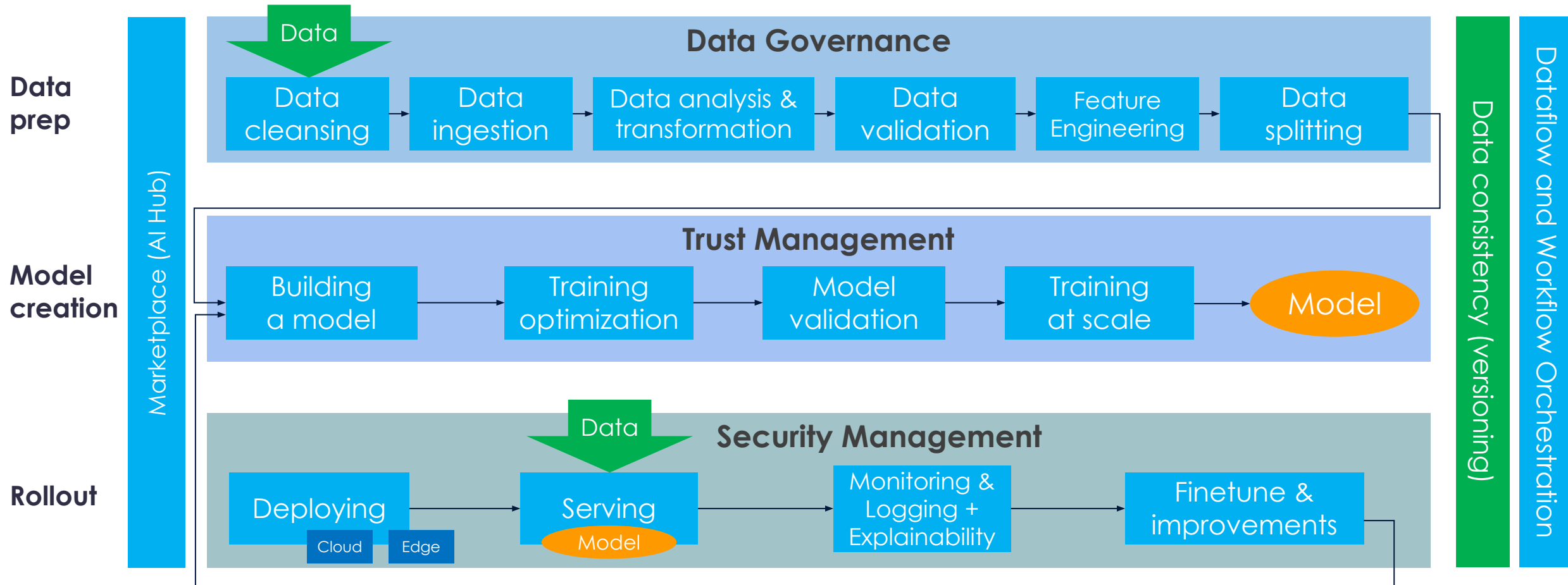
Distributed training framework for TensorFlow, Keras, and PyTorch.



Pyro is a universal probabilistic programming language written in Python and supported by PyTorch on the backend.

LF AI - ML Workflow

Reference workflow and implementation; integration and harmonization



LF AI - Trusted AI Committee

- › **Focus** - Policies, guidelines and tooling
- › **Threads** - Fairness, robustness, explainability, and lineage
- › **Documentation** - Content that describes the basic concepts and definitions in relation to Trusted AI in an effort to standardize the vocabulary and terminology
- › **Badging Program** - Targeted for open source projects that meet the Trusted AI Ethics policies and guidelines as defined by LF AI
- › **Training** - edX courses in collaboration with the LF training organization

Cross Collaboration Opportunities

[LF Edge](#): Trusted AI is needed in edge devices, from driverless vehicles to smartphones to automated factories and farms. Industry fragmentation is a major challenge for edge development. LF Edge brings together projects across Internet of Things (IoT), cloud, and enterprises to increase unity across platforms, communities, and ecosystems. LF Edge fosters collaborations with end users, vendors, and developers to transform all aspects of edge technology and speed open source development.

[LF ODPi](#): Data is at the heart of building open source trusted AI systems – and data governance is especially needed. ODPi provides one of the only vendor neutral, open source standards to enable best practices for data governance, connectivity, business intelligence, analytics, and AI systems.

[LF Energy](#): The energy industry needs open source trusted AI across a wide range of business processes, from predicting demand to predictive maintenance of equipment and more. LF Energy provides a vendor-neutral, collaborative environment to “enable the electrification of everything to scale,” thereby transforming the world’s relationship to the important resource of energy.

[LF ONAP](#): Trusted AI embedded in the network is a priority for the communications industry. The Open Network Automation Platform (ONAP) is ready to be infused with AI to enhance real-time, policy-driven orchestration and automation of physical and virtual network functions. Communication industry providers and developers can use open source to rapidly automate new services and support complete lifecycle management.

[LF CNCF](#): The need for trusted AI In the cloud is the dominate way AI capabilities will be accessed for enterprise business processes. The Cloud Native Computing Foundation (CNCF) hosts critical components of the global technology infrastructure.

Backup: Overview of the Linux Foundation

Overview

- › The Linux Foundation is dedicated to building sustainable ecosystems around open source projects to accelerate technology development and industry adoption.
- › Founded in 2000, The Linux Foundation provides unparalleled support for open source communities through financial and intellectual resources, infrastructure, services, events, and training.
- › Working together, The Linux Foundation and its projects form the most ambitious and successful investment in the creation of shared technology.

The Linux Foundation continues to grow

1400+

Members From
41 Countries



80%

of Fortune 100
Tech & Telecom



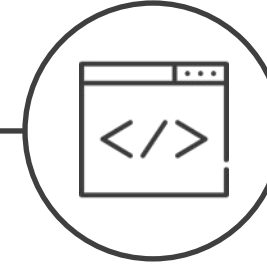
35,000+

Developers
Contributing Code



170+

Open Source
Projects



\$16B

Shared
Value



We have seen unprecedented growth in our projects

Today the Linux Foundation is much more than Linux



Security

We are helping global privacy and security through a program to encrypt the entire internet.



Networking

We are creating ecosystems around networking to improve agility in the evolving software-defined datacenter.



Cloud

We are creating a portability layer for the cloud, driving de facto standards and developing the orchestration layer for all clouds.



Web

We are providing the application development framework for next generation web, mobile, serverless, and IoT applications.



Blockchain

We are creating a permanent, secure distributed ledger that makes it easier to create cost-efficient, decentralized business networks.



Automotive

We are creating the platform for infotainment in the auto industry that can be expanded into instrument clusters and telematics systems.

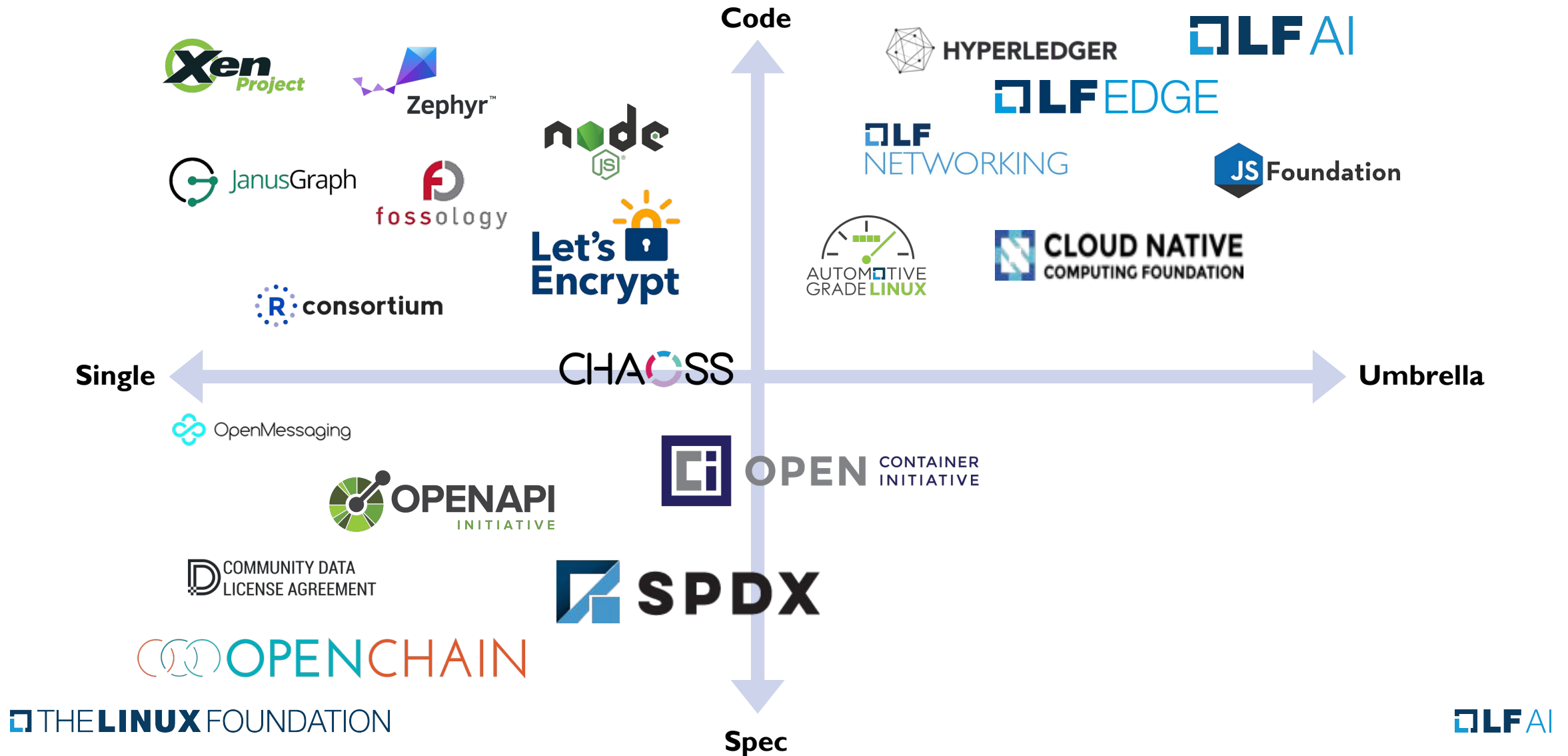


AI

We are creating a sustainable open source AI ecosystem that makes it easier to create AI products and services using open technologies.



Linux Foundation project types (examples)

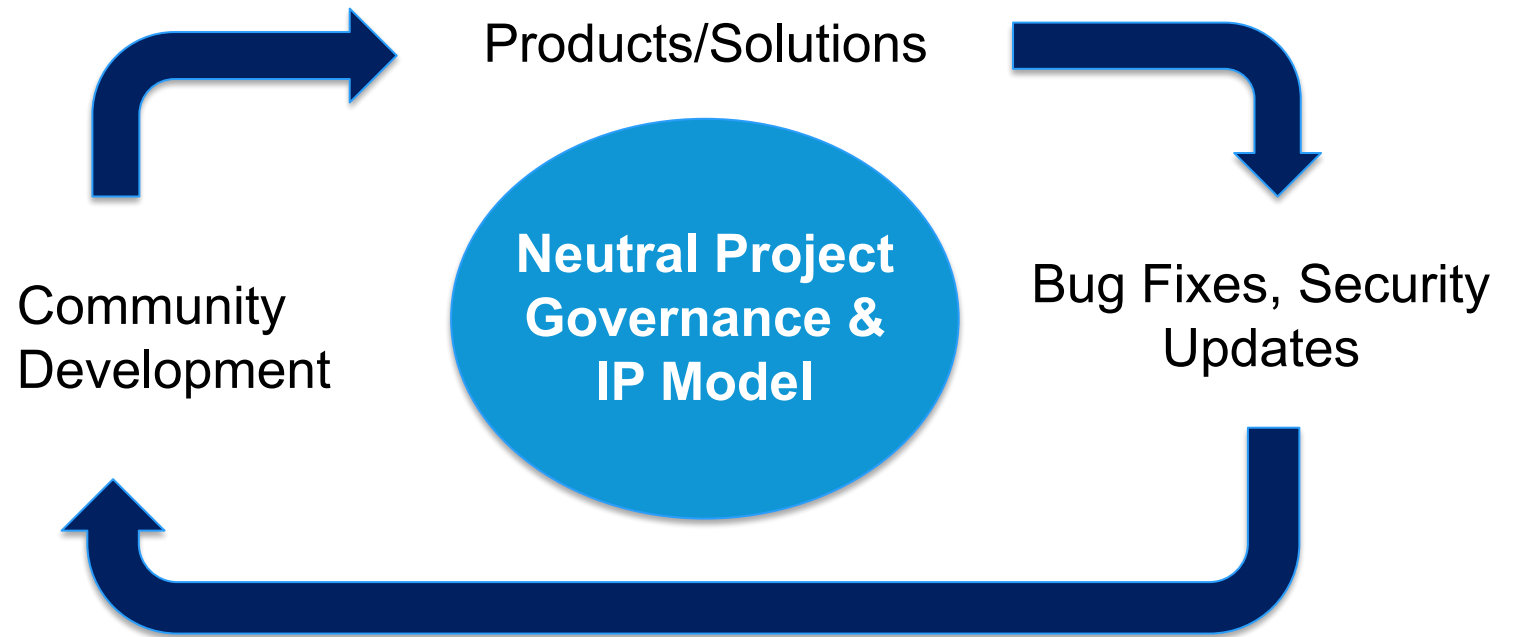


Building successful open collaboration ecosystems usually comes down to 4 core factors

1. Neutrality
 - › No one company or organization can “take it away” from the community that forms around a project
2. Open Governance Do-ocracy
 - › The most successful projects that have stood the test of time have neutral, open governance models where those who do the work make the decisions in a defined governance model
3. IP Clarity
 - › Removal of IP uncertainty enables anyone to get involved as a contributor or implement as a user
4. Commercial Support Ecosystem
 - › Encouraging commercial engagement in the project leads to jobs, faster adoption, new contributions and features that address new use cases

When the 4 core factors are present the project becomes part of a continuous, sustainable ecosystem model

Sustainable projects have a developer community whose technology is used in commercial solutions that profit businesses, who in turn participate and reinvest back into the project and hire developers to work in the community.



Commercial dependency drives a virtuous cycle of commercial and community engagement based on accepted governance and IP models

Introduction

- › Projects considering the LF generally seek:
 - › A neutral host;
 - › Governance help
 - › Supporting programs and resources (e.g. community events, community CI/build resources);
 - › Build momentum within the LF community; and
 - › Ability to raise funds (optional).
- › Projects often start with individual developers seeking to elevate their project or companies interested in working together under a neutral home.
- › Regardless of how projects get started, the LF has supporting programs to help projects through their lifecycle

Core Support Programs

- › **Neutral Asset Ownership:** the Linux Foundation serves as the neutral owner of the core assets and accounts for projects including domains, online service accounts (e.g. GitHub, Twitter, etc), and trademarks
- › **Open Governance:** the Linux Foundation works with each project community to establish a transparent, open governance model for the technical community
- › **Clear IP terms:** the Linux Foundation engages with the key stakeholders to understand and document the intellectual property terms that will underpin the collaboration; contributors retain individual ownership of contributed code and license it to the project for redistribution under open source licenses or the terms of a project Contributor License Agreement
- › **Base Policies:** the Linux Foundation provides the base policies for organizations to collaborate including an antitrust policy, trademark policy, code of conduct, and more
- › **Entity Management:** the Linux Foundation maintains the core entity structures that enable our communities to operate and transact
- › **CommunityBridge Tools:** the Linux Foundation makes tooling available to its communities to address common challenges with fundraising, mentoring, security, and CLA management
- › **Community Event Engagement:** Linux Foundation projects receive complementary space at our OSS NA & OSS EU events to host workshops, meetups and discussions. Linux Foundation project participants receive discounts for attending LF events. Project-related meetups or event activities are highlighted in the Linux Foundation newsletter. Projects receive high priority for acceptance in our Project Highlights tracks at all Open Source Summits and Leadership Summit.
- › **Funding Support:** fundraise for your community through membership models or one-off contributions without having to worry about managing a legal entity, managing finances, audits or regulatory filings

Collaboration Support Programs

- › **General and Administrative Support:** the Linux Foundation handles all the backend operations associated with nonprofit fundraising and spending funds for the community
- › **Leadership and Community Management Support:** hire resources to lead, facilitate and guide the community moving forward
- › **Marketing and Communications Support:** gain visibility with your community's target audience through a strategy and message designed to grow your collaboration
- › **Release Engineering Support:** offload the burden of managing releases to neutral engineers
- › **Community Event Support:** we work with you to develop a strategy for community engagement face-to-face opportunities
- › **Training Support:** expand the ecosystem of skilled professionals able to use, implement and manage solutions based on your community's technology
- › **Funding Support:** fundraise for your community through membership models or one-off contributions without having to worry about managing a legal entity, managing finances, audits or regulatory filings
- › **License, Export Control and Security:** routinely scanning the project repository can help identify license and security issues before an official release spreads any issues to all downstream users

Joining LF AI Foundation is easy!

Web site	https://lfai.foundation
Email	info@lfai.foundation
Landscape	https://l.lfai.foundation
GitHub	https://github.com/lfai
Wiki	https://wiki.lfai.foundation
Mailing lists	https://lists.lfai.foundation/groups