Technical Advisory Council (TAC) Meeting

9 January 2024

LF ENERGY

Meeting information

- Meeting to begin at 5:00 pm Central European Time
- Join the meeting by going to https://zoom-lfx.platform.linuxfoundation.org/meeting/95214651568?password=eda16f17-bdd1-4a9f-a594-0947a1433153
- Any problems with connectivity, you can contact John Mertic from the Linux Foundation at +1 234-738-4571
- Previous TAC Meeting notes, deck, and recording, at https://wiki.lfenergy.org/display/HOME/Technical+Advisory+Council#TechnicalAdvisoryCouncil-MeetingMinutes

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Antitrust Policy Notice

Linux Foundation meetings involve participation by industry competitors, and it is the intention of the Linux Foundation to conduct all of its activities in accordance with applicable antitrust and competition laws. It is therefore extremely important that attendees adhere to meeting agendas, and be aware of, and not participate in, any activities that are prohibited under applicable US state, federal or foreign antitrust and competition laws.

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Agenda

All Times in Central European Time Zone

- 5:00 pm - 5:20 pm - Opening and General Updates
  - TAC member updates and project review date reminders
  - General updates
  - Project Security Focus updates
- 5:20 pm - 5:40 pm - Synthetic Energy Data Project Proposal
- 5:40 pm - 6:00 pm - EVerest Annual Review
- 6:00 pm - 6:20 pm - RTDIP Annual Review
- 6:20 pm - 6:25 pm - Marketing/PR/Events updates
- 6:25 pm - 6:30 pm - Closing and Next Meeting

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Opening and General Updates

5:00 pm - 5:20 pm

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TAC Voting Members

You can update your headshot/title at openprofile.dev.

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Antonello Monti

Chair

Professor

RWTH Aachen University

Anne Tilloy

Project manager

RTE (Reseau de Transport dElectricite)

Art Pope

Member of Technical Staff at Google LLC

Avi Allison

Program Manager, Energy, Sustainability

Microsoft Corporation

Boris DOLLEY

Director of Sustainable IT Strategy

RTE (Reseau de Transport dElectricite)

Bryce Bartmann

Chief Digital Technology Advisor

Shell International Petroleum Company

Jonas van den Bogaard

Open Source Office Lead

Alliander

Maarten Mulder

PO Field Device Platforms

Alliander

Travis Sikes

Senior Data Scientist

Recurve

LF Energy Hosted Project Leads

Project	Project Lead(s)
PowSyBl	Anne Tilloy, RTE
OperatorFabric	Frederic DIDIER, RTE
OpenEEmeter	Travis Sikes, Recurve
GXF	Maarten Mulder, Alliander
SOGNO	Antonello Monti, RWTH Aachen University
CoMPAS	Aliou Diaite, RTE & Sander Jansen, Alliander (TAC Representative)
FledgePOWER	Akli Rahmoun, RTE
Hyphae	Asimenia Korompili, RWTH Aachen University
openLEADR	Lonneke Driessen & Stan Janssen, OpenADR
SEAPATH	Éloi Bail, Savoir-faire Linux
Grid Capacity Map	Per Lysemose Hansen, Energinet
Shapeshifter	Robben Riksen, Alliander
OpenSTEF	Frank Kreuwel, Alliander

Project	Project Lead(s)
EVerest	Marco Möller, PIONIX
OpenGEH	Nicolas Bernhardi, Energet
FlexMeasures	Nicolas Höning, Seita Energy Flexibility B.V.
Arras	David Chassin, SLAC
Dynawo	Marco Chiaramello, Benoît Jeanson, RTE
OpenFIDO	David Chassin, SLAC
Power Grid Model	Tony Xiang, Alliander
Real Time Data Ingestion Platform (RTDIP)	Bryce Bartmann, Shell
TROLIE	Christopher Atkins, MISO Energy
Battery Data Alliance	Gabe Hege, AMPLabs
GRIP (Grid Resilience and Intelligence Platform)	Alyona Teybar, MASc
Open Sustainable Technology	Tobias Augspurger, Protontypes
CitrineOS	Thana Paris, S44
covXtreme	Sachin Bhakar, Shell

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Working Group Leads

Working Group	Work Group Lead(s)
AI Working Group	Jonas van den Bogaard, Alliander
Archimate Working Group	Alexandre Pariost

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Project Review Cycle

Upcoming Reviews

Project	Current Level	Initially Accepted	Last Review Date	Next Review Date
~~*EVerest*~~	~~*Early Adoption*~~	~~*October 12, 2021*~~	~~*December 6, 2022*~~	~~*January 9, 2024*~~
~~*RTDIP*~~	~~*Sandbox*~~	~~*October 25, 2022*~~		~~*January 9, 2024*~~
Dynawo	**Sandbox**	**December 6, 2022**		**January 30, 2024**
OpenFIDO	**Sandbox**	**January 17, 2023**		**January 30, 2024**
Hyphae	Incubation	December 8, 2020	February 7, 2023	February 20, 2024
Power Grid Model	Sandbox	February 7, 2023		February 20, 2024

Working Groups

Group	Current Level	Initially Accepted	Last Review	Next Review
Archimate Working Group	Active	October 4, 2022	11/28/2023	11/05/2024
AI Working Group	Active	September 26, 2023		9/17/2024

Past Reviews

Project	Current Level	Initially Accepted	Last Review Date	Next Review Date
FledgePOWER	Incubation	February 11, 2021	March 21, 2023	March 12, 2024
SOGNO	Early Adoption	October 27, 2020	March 21, 2023	March 12, 2024
Shapeshifter	Incubation	April 6, 2021	April 11, 2023	April 23, 2024
CoMPAS	Incubation	May 5, 2020	July 13, 2022	June 25, 2024
OperatorFabric	Early Adoption	April 30, 2019	July 25, 2023	July 16, 2024
Arras	Sandbox	July 12, 2022	July 25, 2023	July 16, 2024
TROLIE	Incubation	September 5, 2023		September 3, 2024
Battery Data Alliance	Incubation	September 5, 2023		September 3, 2024
GXF	Early Adoption	February 4, 2020	September 26, 2023	September 24, 2024
Open Sustainable Technology	Sandbox	October 17, 2023		October 4, 2024
Grid Capacity Map	Incubation	April 27, 2021	October 17, 2023	October 4, 2024
OpenEEmeter	Incubation	June 4, 2019	October 17, 2023	October 4, 2024
OpenSTEF	Incubation	September 21, 2021	October 25, 2022	November 5, 2024
FlexMeasures	Incubation	November 2, 2021	November 28, 2023	November 19, 2024
PowSyBl	Early Adoption	April 30, 2019	November 28, 2023	November 9, 2024
CitrineOS	Sandbox	November 28, 2023		November 19, 2024
SEAPATH	Early Adoption	October 6, 2020	December 19, 2023	December 10, 2024
covXtreme	Sandbox	December 19, 2023		December 10, 2024
OpenLEADR	Incubation	September 15, 2020	December 6, 2022	TBD
OpenGEH	Sandbox	October 12, 2021	October 4, 2022	TBD

TAC Sponsors for Projects

As part of the benefit for LF Energy projects, the TAC has a sponsor for each project.

"Appointment of an existing TAC member by the TAC that will act as a sponsor of the project and provide recommendations regarding governance best practices."

ACTION: Review assignments, let John or Yarille know if there are issues

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Project	Current Level	TAC Sponsor
Archimate Working Group	Working Group	Maarten Mulder
Arras	Sandbox	Antonello Monti
Battery Data Alliance	Sandbox	
CitrineOS	Sandbox	
CoMPAS	Incubation	Bryce Bartmann
Dynawo	Incubation	Art Pope
EVerest	Early Adoption	Bryce Bartmann
FledgePOWER	Incubation	Jonas van den Bogaard
FlexMeasures	Incubation	Maarten Mulder
Grid Capacity Map	Incubation	Boris Dolley
GRIP (Grid Resilience and Intelligence Platform)	Sandbox	
GXF	Early Adoption	Jonas van den Bogaard
Hyphae	Incubation	Antonello Monti
OpenEEmeter	Incubation	Travis Sikes
OpenFIDO	Sandbox	Avi Allison
OpenGEH	Sandbox	Avi Allison
OpenLEADR	Incubation	Anne Tilloy
OpenSTEF	Incubation	Jonas van den Bogaard
Open Sustainable Technology	Sandbox	
OperatorFabric	Early Adoption	Boris Dolley
PowSyBl	Early Adoption	Anne Tilloy
Power Grid Model	Sandbox	Jonas van den Bogaard
Real Time Data Ingestion Platform (RTDIP)	Sandbox	Art Pope
SEAPATH	Early Adoption	Boris Dolley
Shapeshifter	Incubation	Jonas van den Bogaard
SOGNO	Early Adoption	Antonello Monti
TROLIE	Sandbox	Boris Dolley

General Updates

- Yarille will be reaching out to project/working group leads to update slide in HL overview deck. (https://github.com/lf-energy/tac/issues/91)
- We'd like to schedule guest speakers/topics that would be of interest to TAC members and TSC leads.
  - **ACTION: Let us know what would be of interest at https://github.com/lf-energy/tac/issues/31.**
- Plan to move all projects to using LFX PCC Meeting Management by end of Q1; current status at https://github.com/lf-energy/tac/issues/39
  - **ACTION: Projects lead to work with John on transitioning: FledgePOWER, Grid Capacity Map, Grid eXchange Fabric, Hyphae, OpenEEmeter, PowSyBl, openLEADR, Archimate WG**
- Future of Slack; Zulip being trialed by EVerest (https://github.com/lf-energy/tac/issues/48)

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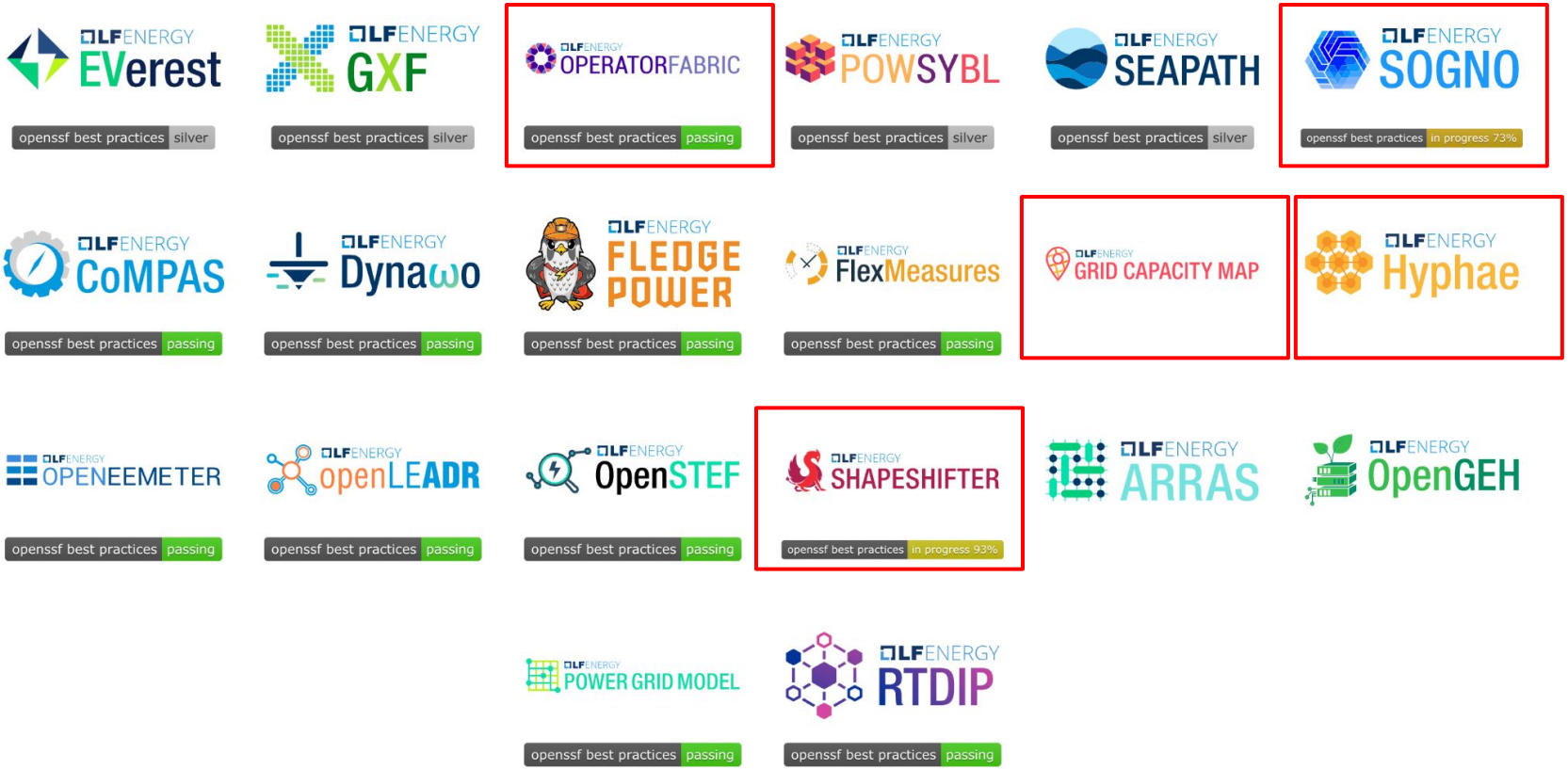
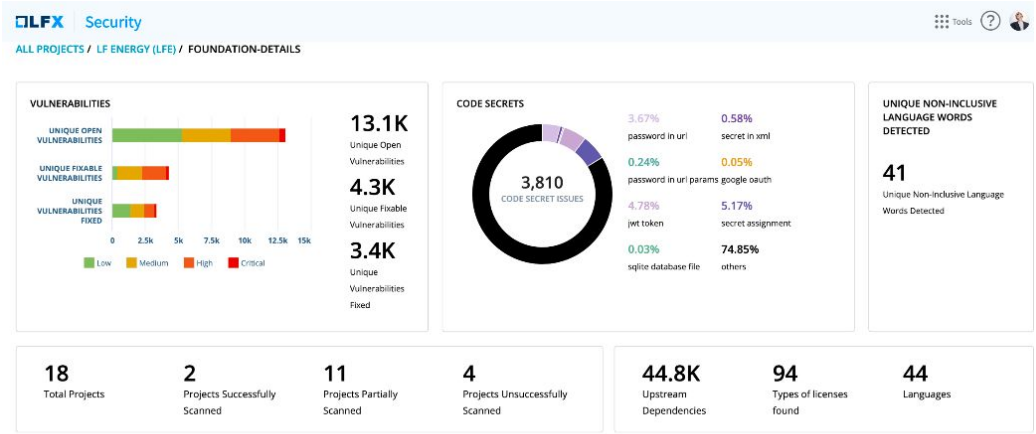
Project Security Focus updates

- Ensure all projects up to date with OpenSSF Best Practices Badge per their maturity level
- Clean up LFX Security to ensure it's accurate
- Review license scans and remedy open issues
- Security Audits for all ‘Early Adoption’ stage projects
- Security strategy developed by TAC (response standards, CVE response)



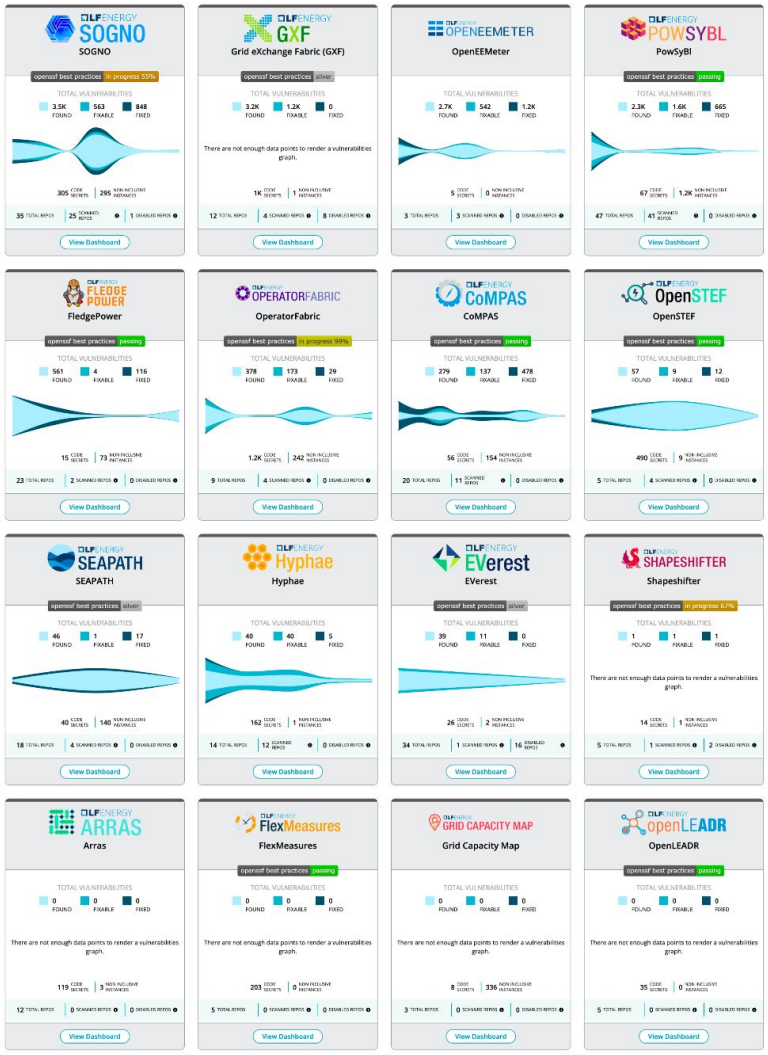
Current OpenSSF Best Practices Badge status (5 projects out of compliance)

ACTION: Projects in red boxes need review (source https://tac.lfenergy.org/projects_with_bestpractices)



- 16 of 20 projects on LFX Security
- 6 projects with no successful scans
- Only 2 projects with a full scan

ACTION: John to review and debug issues.



All current projects accepted before 12/1 had license scans done at the end of December

ACTION: Review latest license scans sent from Jeff Shapiro and address open issues

JS **Jeff Shapiro <jshapiro@linuxfoundation.org>** December 29, 2023, 10:19 PM
LF Energy - SEAPATH License Scan and Findings - Dec 2023
To: SEAPATH-TSC <SEAPATH-TSC@lists.lfenergy.org> Cc: & 1 more Details

Hi Team,

Here are the results from the December 2023 license scan of the SEAPATH project. The scan was performed using the Linux Foundation Fossology server. Licenses and copyrights were examined.

The key findings (if any) and license summary can be found in the HTML report, the list of files in the spreadsheet, and also find the SPDX file listed below:
NOTE: I recommend that SPDX license identifiers be added to ALL source file headers. [see https://spdx.dev/learn/handling-license-info for examples]
NOTE: There are high priority key findings, please address these as soon as possible:

Finding #1
Priority: High
These files have an Apache-2.0 notice, but they also contain a comment indicating that they contain code from a third-party GPL v2 project.
The GPL v2 license is generally understood as prohibiting GPL v2 code from being incorporated into another work under a different license. The GPL v2 code from the upstream project should likely be removed and rewritten without using that project's code.
4 files

Finding #2
Priority: High
These files indicate that they contain content (or refer to a 3rd party dependency) under a version of the LGPL, typically seen as a weak copyleft license. Although LGPL content can be used in compatible ways with Apache-2.0 projects, its code should not be intermingled with code that needs to remain Apache-2.0, and it imposes some requirements that users of an Apache-2.0 project may not expect. The project may want to remove these files and replace them with permissively-licensed alternatives if that is feasible.
4 files

Finding #3
Priority: High
These recipes appear to contain some patches and code files that are under GPL-2.0, a strong copyleft license which is typically seen as incompatible with Apache-2.0 in many instances.
This may be okay, to the extent that the recipe is patching a GPL-2.0 project. However, for the patches / files that are GPL-2.0, will these be interacting with the project's Apache-2.0 code?
14 files

Finding #4
Priority: High
These files are under a GPL license which may conflict withj your project license, especially if they are source code that is integrated with other code. Unless they are 100% separate and stand-alone, they need to be removed from your repo.
12 files

REPORTS:

lfenergy/seapath, code pulled 2023-12-23
- report: https://lfscanning.org/reports/lfenergy/seapath-2023-12-23-1eed5565-a64d-4d91-a21f-645536f1a512.html
- xlsx: https://lfscanning.org/reports/lfenergy/seapath-2023-12-23-1eed5565-a64d-4d91-a21f-645536f1a512.xlsx
- spdx: https://github.com/lfscanning/spdx-lfenergy/tree/master/seapath/2023-12/seapath-2023-12-23.spdx

Please feel free to contact me with any questions about the scan results. Be sure to reply to me directly as I may not get an email sent directly to the distribution list.

Thanks, Jeff

Security Audits through Open Source Technology Improvement Fund.

Priority Focus for ‘Early Adoption’ projects

In progress:

- EVerest
- SEAPATH

TODO:

- GXF
- OperatorFabric
- PowSyBL
- SOGNO

Next focus is on Incubation projects.

ACTION: Remaining ‘Early Adoption’ projects get lined up for scans; identify any ‘Incubation’ projects next.

The Open Source Technology Improvement Fund is a corporate non-profit dedicated to **securing open source apps** that we all depend on. Securing software isn’t easy, and we know what it takes to succeed. By facilitating security audits and reviews, OSTIF makes it easy for projects to significantly improve security.

Security Strategy

TAC take the lead on developing a common set of security expectations and infrastructure for all hosted projects.

Besides the aforementioned topics, the TAC should provide guidance on:

- Base security policy for projects
- Standards for security response and responsible disclosure (CVE)
- Anything else industry specific to consider

ACTION: TAC to discuss forming a group to focus on building out security strategy

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Synthetic Energy Data Project Proposal

5:20 pm - 5:40 pm

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ACCELERATING GLOBAL ENERGY SYSTEMS RESEARCH WITH OPEN ACCESS TO SYNTHETIC ENERGY DATA

Centre for Net Zero

Powered by **Octopus Energy**

INTRODUCTIONS

GUS CHADNEY

Data Lead

SHENG CHAI

Senior Data Scientist

CENTRE FOR NET ZERO

An impact-driven research unit founded by Octopus Energy

THE DEMAND-SIDE CHALLENGE

DEMAND FLEXIBILITY IS ESSENTIAL

The massive uptake of intermittent renewable energy sources will result in a need of **500 GW** of **demand flexibility** globally by 2030, according to the International Energy Agency.

HOUSEHOLD CONSUMPTION IS KEY

As heat and transport electrify, we need to understand **household consumption** intimately in order to predict **usage** and optimise **flexibility**

WE NEED SMART METER DATA

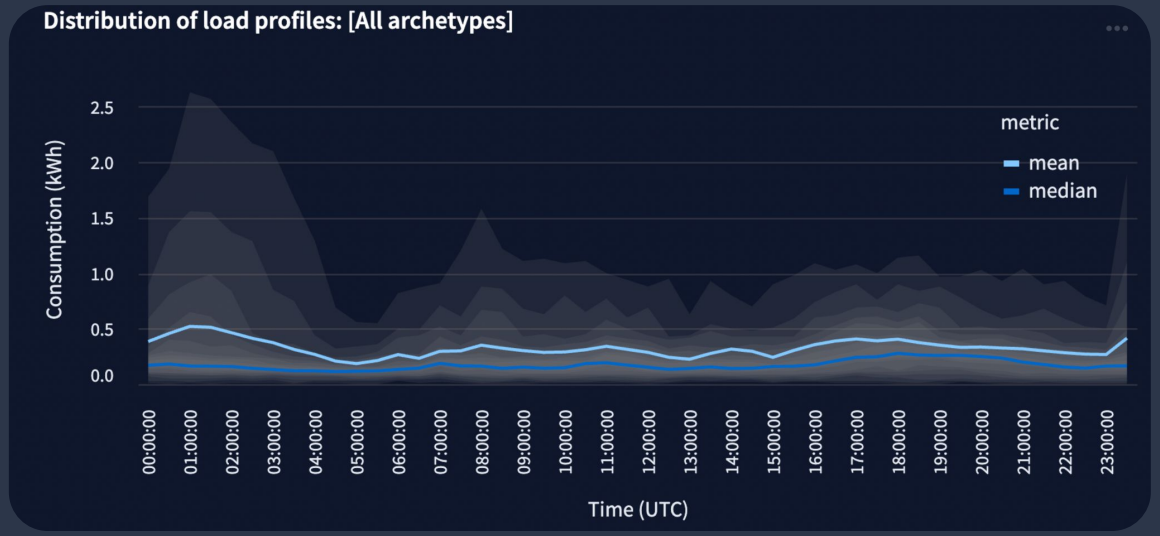
Granular **smart meter data** will unlock pioneering **research** and **innovative data products** to plan for electrification and unlock demand flexibility

ACCESS TO RAW SMART METER DATA IS ESSENTIAL FOR ENERGY RESEARCH

SYNTHETIC DATA ALLEVIATES CONSUMER PRIVACY ISSUES

AN OPEN COMMUNITY FOR SYNTHETIC SMART METER DATA WILL ACCELERATE RESEARCH EFFORTS

CNZ FARADAY



CUTTING-EDGE TECHNIQUES

Uses a combination of **Variational Autoencoders** (VAEs) and **Gaussian Mixture Model** (GMM) to provide best in class synthetic data

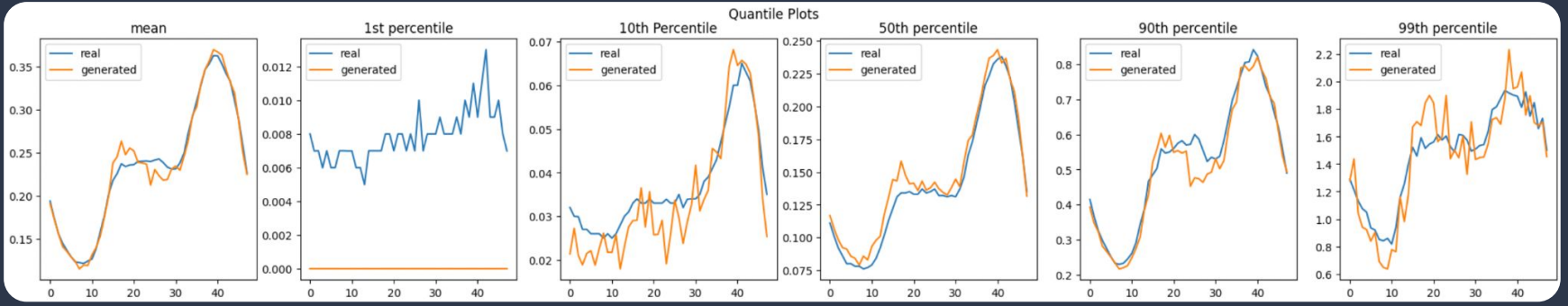
TRAINED ON REAL-WORLD DATA

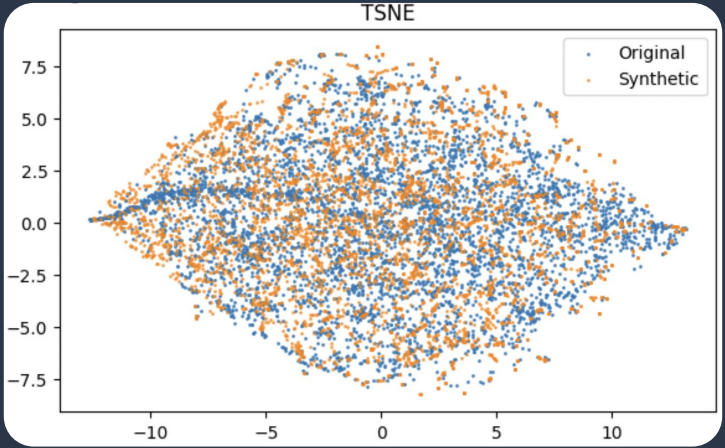
Faraday was trained on **7 million** day profiles over a **1 year** period from **20K** Octopus Energy UK households.

SUPPORTS ARCHETYPES

Household profiles can be generated with different **LCT** mixtures, **seasonality** and **EPC** ratings

CNZ FARADAY





Faraday Alpha V3

About Faraday Alpha V3

The latest version of Faraday Alpha is capable of generating synthetic household-level smart meter profiles given certain inputs. It works the same as earlier versions - user creates a population of archetypes and the tool returns synthetic smart meter profile of that population.

Note however that generating household level profiles is computationally expensive and there are several limitations in this version:

1. Only the following inputs are available:
   1. EPC ratings: [redacted] or [redacted]
   2. Property Type 1: [redacted] or [redacted]
   3. Property Type 2 (House subtypes): [redacted]
   4. LCT Ownership: [redacted] (which also includes other types of LCT e.g. electric radiators, electric heater storage, hot water storage etc) and [redacted]
   5. Seasonality: [redacted] vs [redacted], and Months of the year
2. You can only request a maximum of 1000 profiles at one go. If you need more than 1000 profiles, you have to fetch and download them one at a time.
3. Generating 1000 profiles may take up to 2 minutes (before timing out).

We'll be working up on scaling the tool to be able to generate more profiles simultaneously more quickly and hopefully release a V3.5 soon, along side with more inputs, so stay tuned. Meanwhile we thank you for your patience!

Any feedback or questions, please email us as [redacted]!

USE CASES

CURRENT

- TEED Digitisation Project by University of Birmingham
- Better Home Leeds Project by ARUP
- Commercial research projects by industry consultancies such as Parity Projects and Turley
- Other academic research projects by Phds and Postdocs from University of Manchester and King's College London

POTENTIAL

- Regional, national and global grid “digital twins”
- Future energy system simulations
- Designing smart tariffs
- Greenfield grid design
- Extreme weather resilience planning
- Scenario planning

WHY AN OPEN COMMUNITY?

STANDARDISATION

We would like to drive consensus on what “good” looks like for synthetic smart meter data, ensuring quality and privacy

COMPETITION

The performance and ability of the generative algorithms will increase massively if contribution is open

VARIABILITY

Consumption profiles vary globally, multiple contributors will ensure we capture all edge cases for research

VOLUME

Synthetic smart meter data needs to be generated at scale, open-sourcing the algorithms will encourage all holders of real data to do this

SYNTHETIC DATA ECOSYSTEM

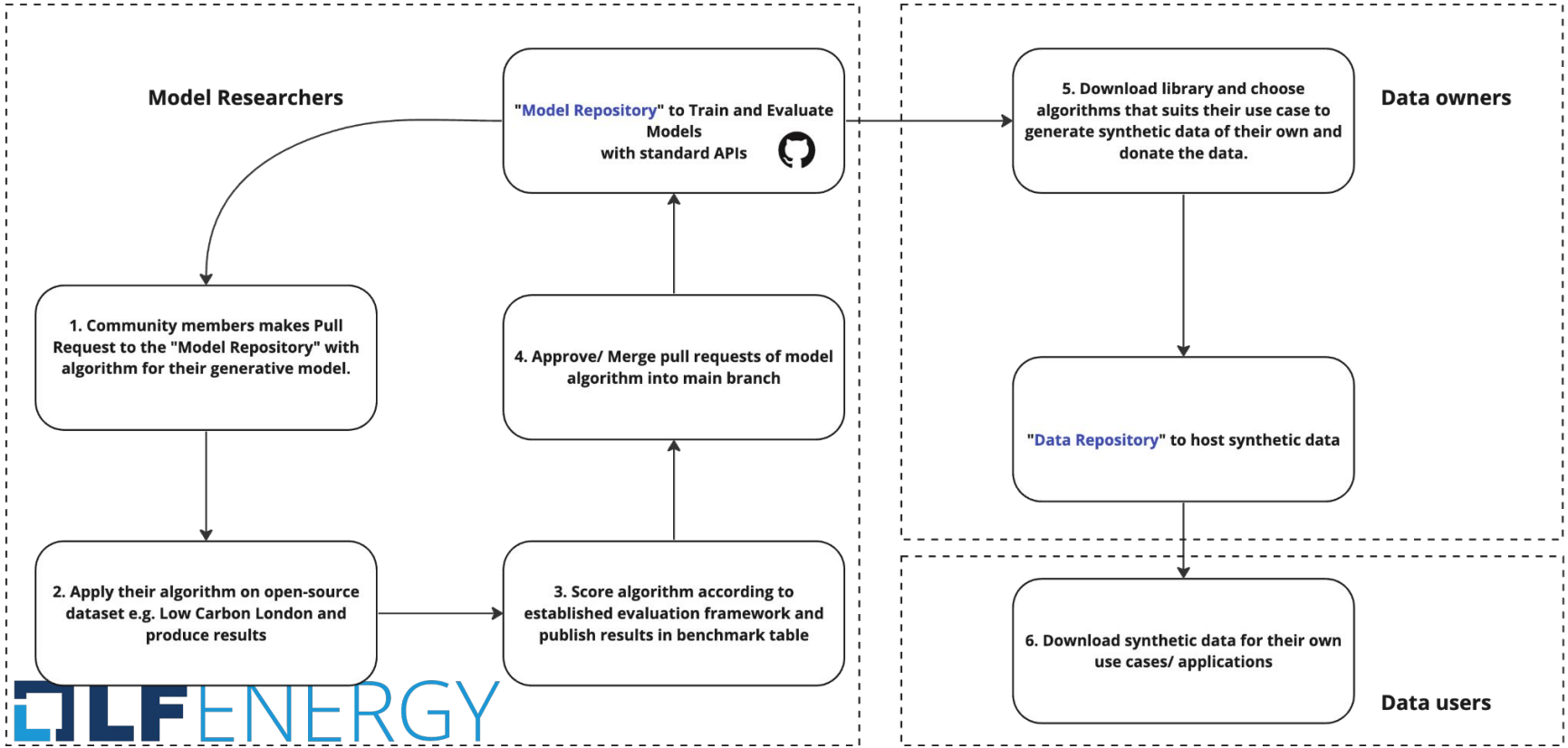
MODEL REPOSITORY

- Standardised APIs / framework to enable:
  - Model training with varied algorithms on arbitrary data sets
  - Evaluation of models to benchmark consistently and ensure quality
- Host algorithm / code for generative models that are vetted against a common evaluation framework
- Community can contribute towards algorithm / evaluation framework as research in the area progresses

DATA REPOSITORY

- Data owners can download algorithm/ code from “Model Repository” to train on their proprietary data to generate synthetic data
- Data owners can donate synthetic data to a Data Repository

SYNTHETIC DATA ECOSYSTEM



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WHY LF ENERGY?

COMMUNITY

Leverage LF Energy's expertise creating and growing open-source communities

GOVERNANCE

Build the management framework to ensure quality controls and instil confidence

LICENSING

Navigate and implement correct licenses for usage of software and data

MARKETING

Outbound marketing support to grow community with workshops and events

NEXT STEPS

DEFINITION OF GOOD

We will be publishing a **technical paper** defining the **definition of good** that looks at fidelity, utility and privacy metrics

CONTINUED DEVELOPMENT

We will continue to improve our own generator **Faraday**, as well as lay the groundwork for the **synthetic data ecosystem**

OUTREACH

We will be building up our contact book of **interested parties**, and plan small, focused **workshops**

THANK YOU

Centre for Net Zero

Powered by **Octopus Energy**

EVerest Annual Review

5:40 pm - 6:00 pm

LF ENERGY

2024-01-09

TAC Everest Annual Review

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The Power of Together

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EVerest

2024-01-09

TAC Everest Annual Review

EVerest Review

Brief Description

The primary goal of EVerest is to develop and maintain an open source **firmware** stack for **EV charging infrastructure**. By digitally abstracting the complexity of multiple standards and use cases, EVerest will run on any device from AC home chargers to public DC charging stations. EVerest is developed with modularity and customizability in mind; it consists of a framework to configure several interchangeable modules which are coupled by MQTT with each other. This project will help to speed the adoption to e-mobility by utilizing all the open source advantages for the EV charging world. It will also enable new features for local energy management, PV-integration, grid friendliness, and many more.

TSC chairperson:

Dr. Marco Möller

TSC members

- (Chair) Marco Möller [Pionix] (@caller)
- Cornelius Claussen [Pionix] (@corneliusclaussen)
- Kai-Uwe Hermann [Pionix] (@hikinggrass)
- Anton Wöllert [Pionix] (a-w50)
- Moritz Barsnick [Chargebyte] (@barsnick)

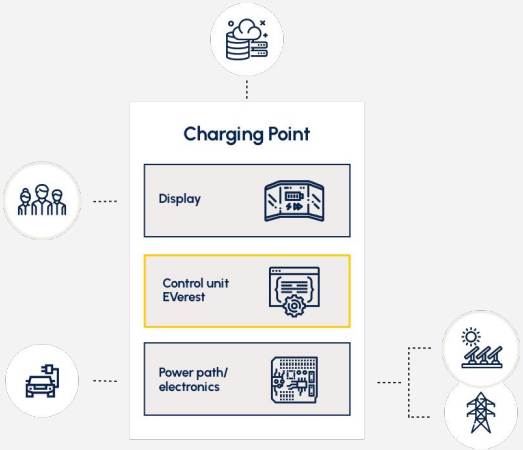
New:

- **Holger Rapp [qwello] (@SirVer)**
- **K. Shankari [Joint office of Energy and Transportation] (@shankari)**

Key ressources

- GitHub - Check out the code and other helpful things like our documentation
  https://github.com/EVerest
  https://everest.github.io
- EVerest Mailing list: Get updates about upcoming events and news and join the discussion about EVerest
  https://lists.lfenergy.org/g/everest
- ZULIP - Instant Messaging
  https://lfenergy.zulipchat.com
- Technical Steering Committee: Follow the evolution of EVerest closely, get involved, open to all! Announcement and links to the meeting sent via the mailing list
  Every 4th thursday of the month, next instance January 24th 5 pm CET
- Weekly Tech Sync - Join the developers circle and start contributing
  Every Tuesday 4pm -5pm CET
- ~~X / Twitter: @EVerestInCharge~~

Recap: What's EVerest



Fixing the ecosystem
Building (on) a shared base layer

LFENERGY EVerest

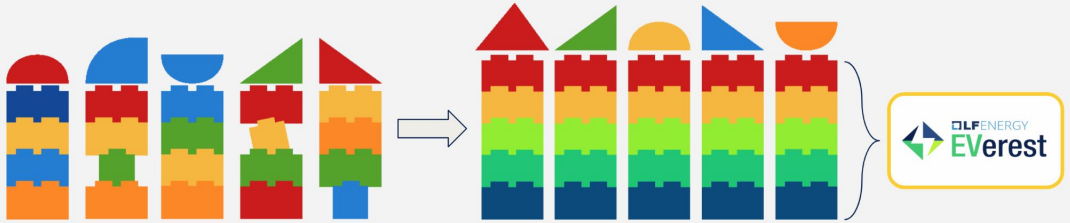
Replacing individual proprietary solutions with a shared base layer **accelerates the ecosystem**.

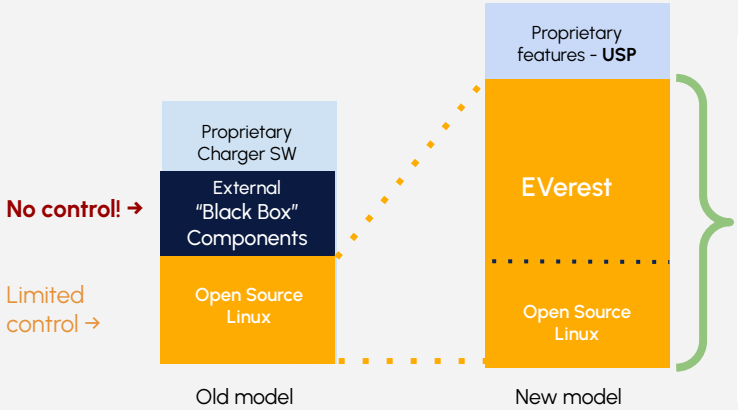
By providing a common **technology base layer EVerest** removes the need to develop the "Me2" features - and allows all stakeholders to focus on **individual value add and innovation**.

Connectivity to suppliers, customers, cloud providers is greatly enhanced through **standardized interfaces**.

Individual proprietary solutions **without sharing**

Standardized **base layer** with **individual value add**





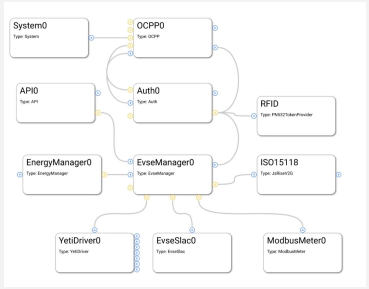
With EVerest:

- ✅ **No vendor** lock-in
- ✅ EVerest & PIONIX **take care** of the majority of SW
- ✅ **Customers can focus on USP features**
- ✅ EVerest licence still allows **custom proprietary SW** components
- ✅ **No risky SW** "black boxes"

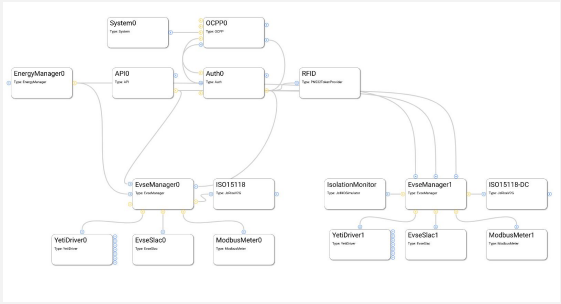
Tech Overview & Example Configurations

- Beautiful modular microservice architecture & middleware
- Many language bindings: (C++ 17, Python, JavaScript, Rust)
- Seamless buildings blocks for all use cases
- Software (& Hardware) in the Loop Simulations - develop on single laptop / docker
- Automatically / manually well tested
- Deeply integrated:
  HW reference designs available

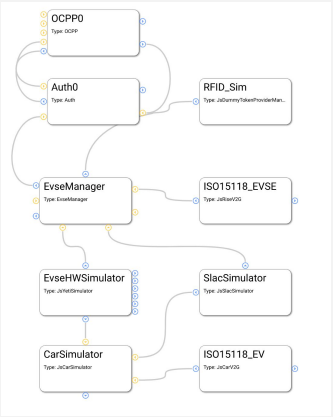
Simple AC Charger



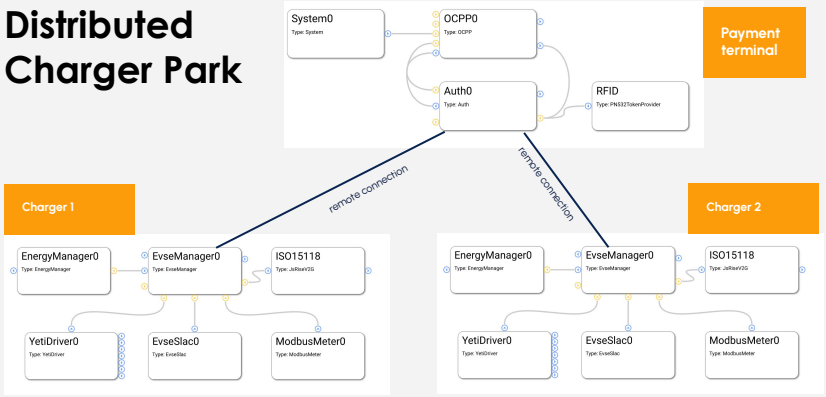
AC+DC Hybrid Charger



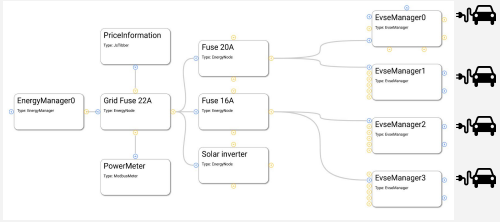
SW in the Loop test



Distributed Charger Park

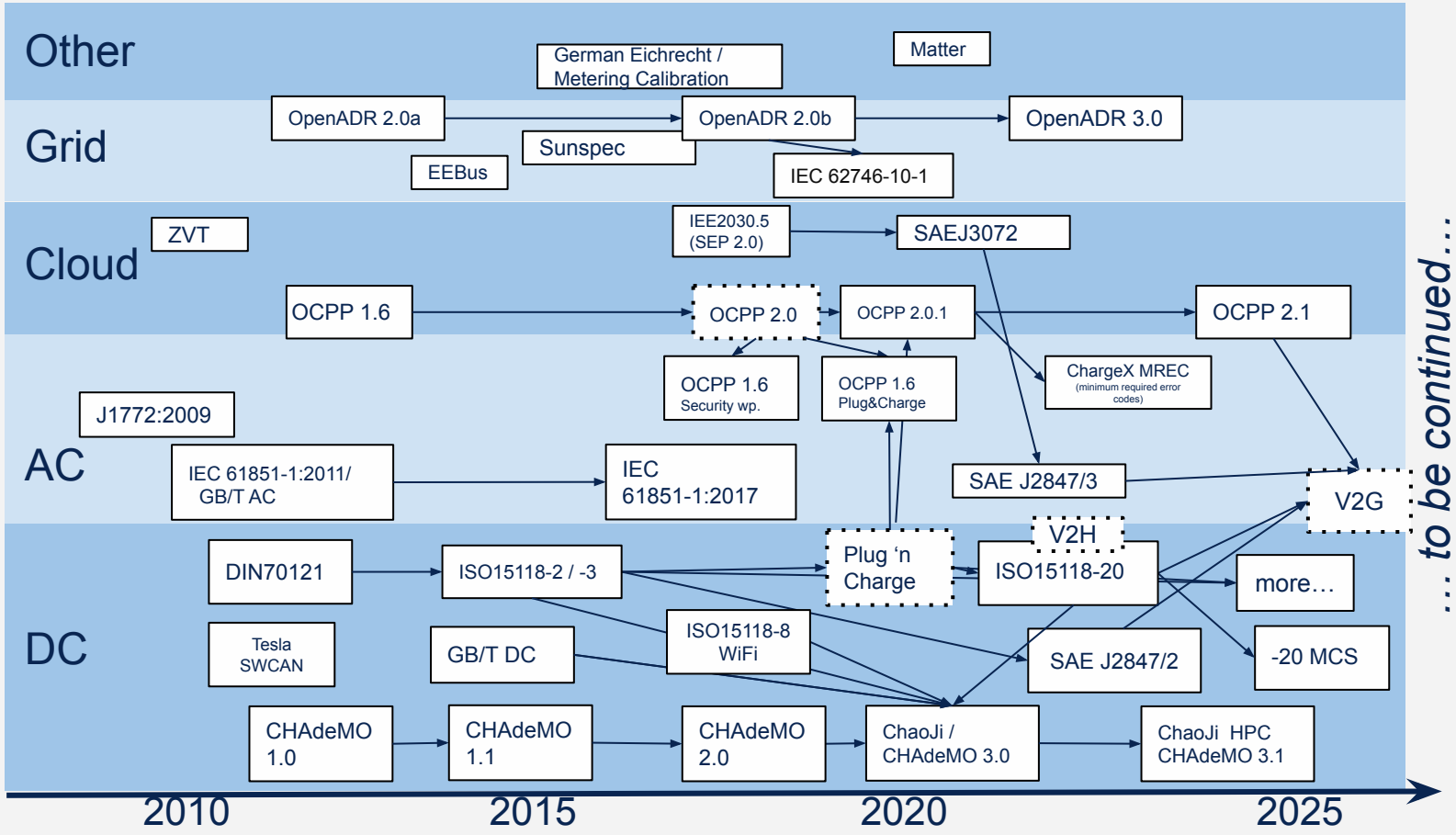


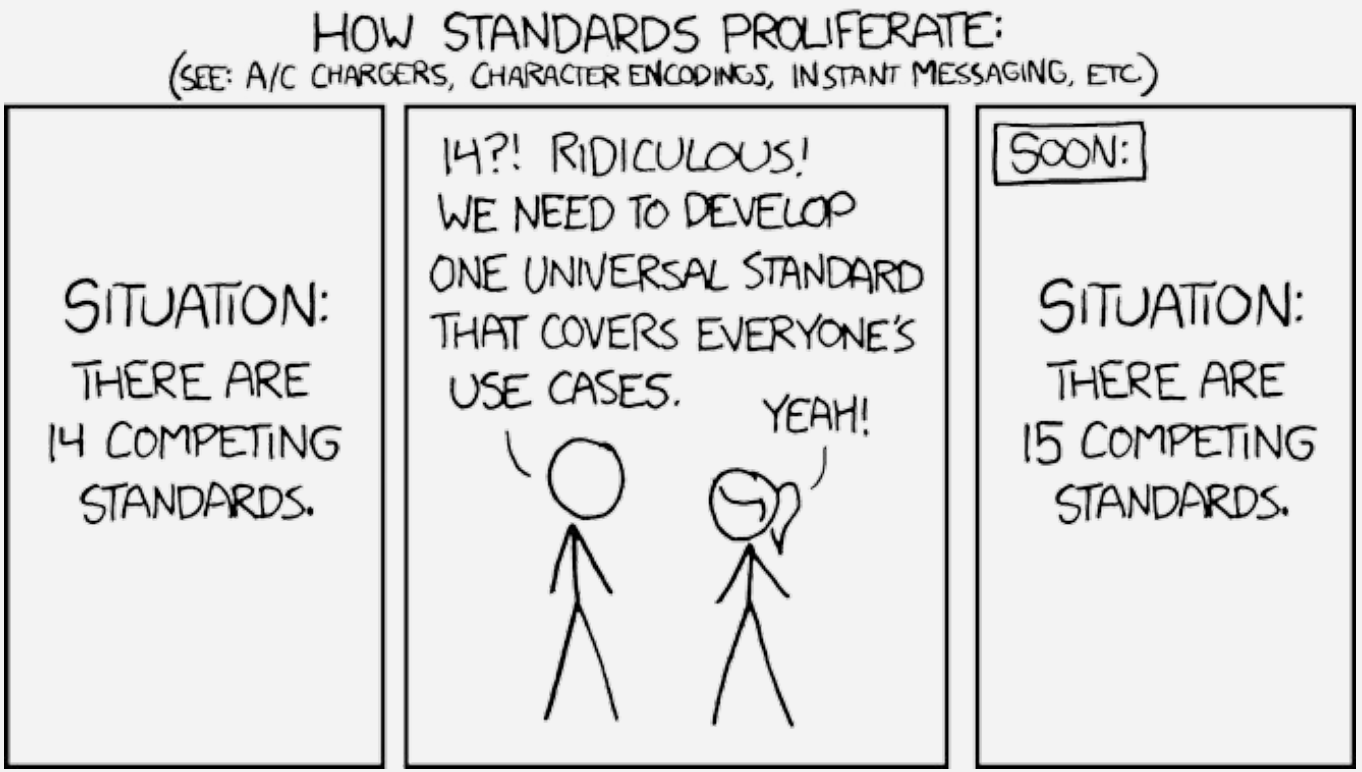
Site Energy Mgmt



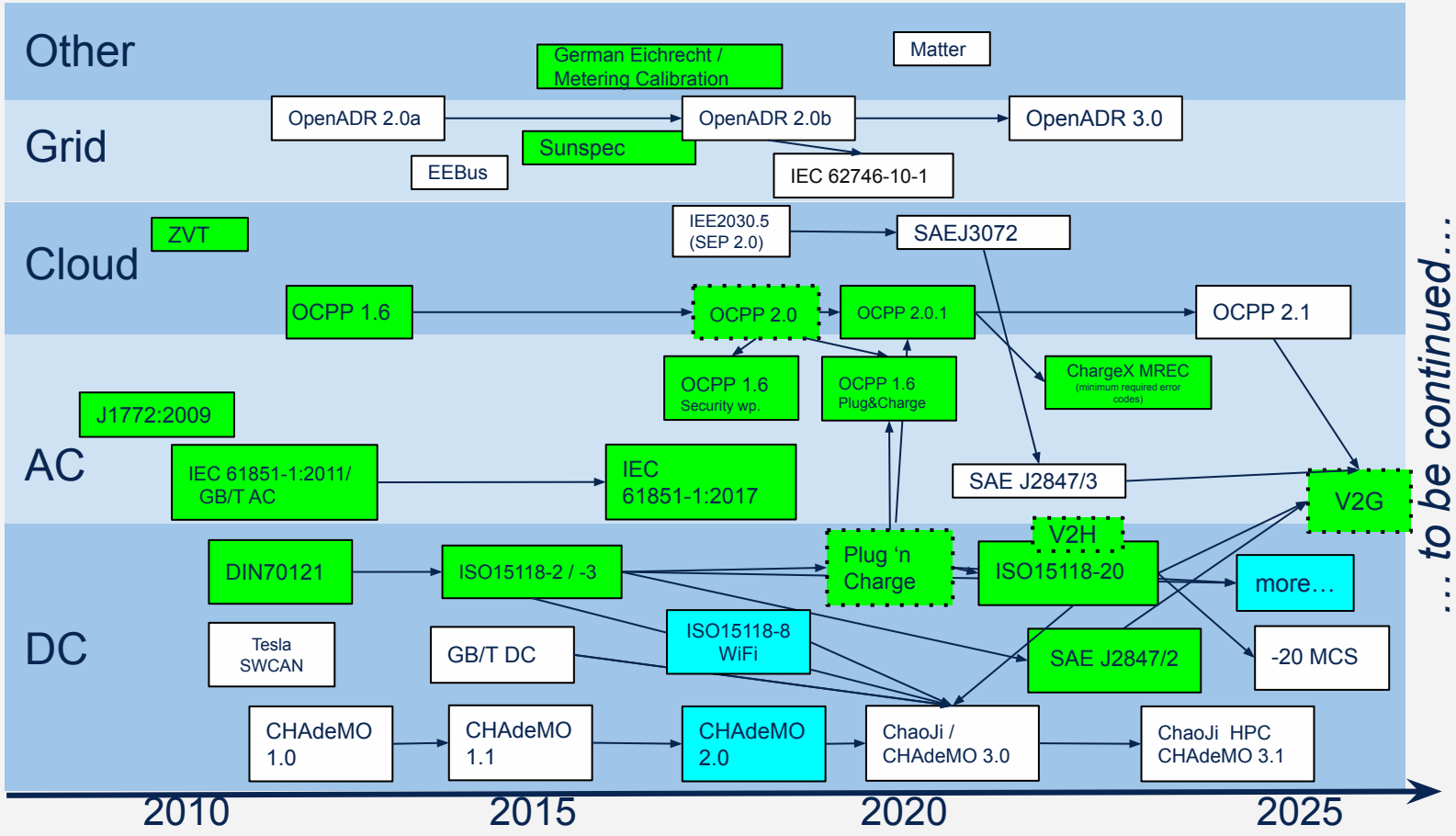
EV Charging Pioneers #1 - How the EVerest Ecosystem will simplify Charging Use Cases
https://youtu.be/OJ6kjHRPkyY

EVerest Roadmap - The Industry Standards Landscape




HOW STANDARDS PROLIFERATE:
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)
SITUATION: THERE ARE 14 COMPETING STANDARDS.
14?! RIDICULOUS! WE NEED TO DEVELOP ONE UNIVERSAL STANDARD THAT COVERS EVERYONE'S USE CASES.
YEAH!
SOON:
SITUATION: THERE ARE 15 COMPETING STANDARDS.

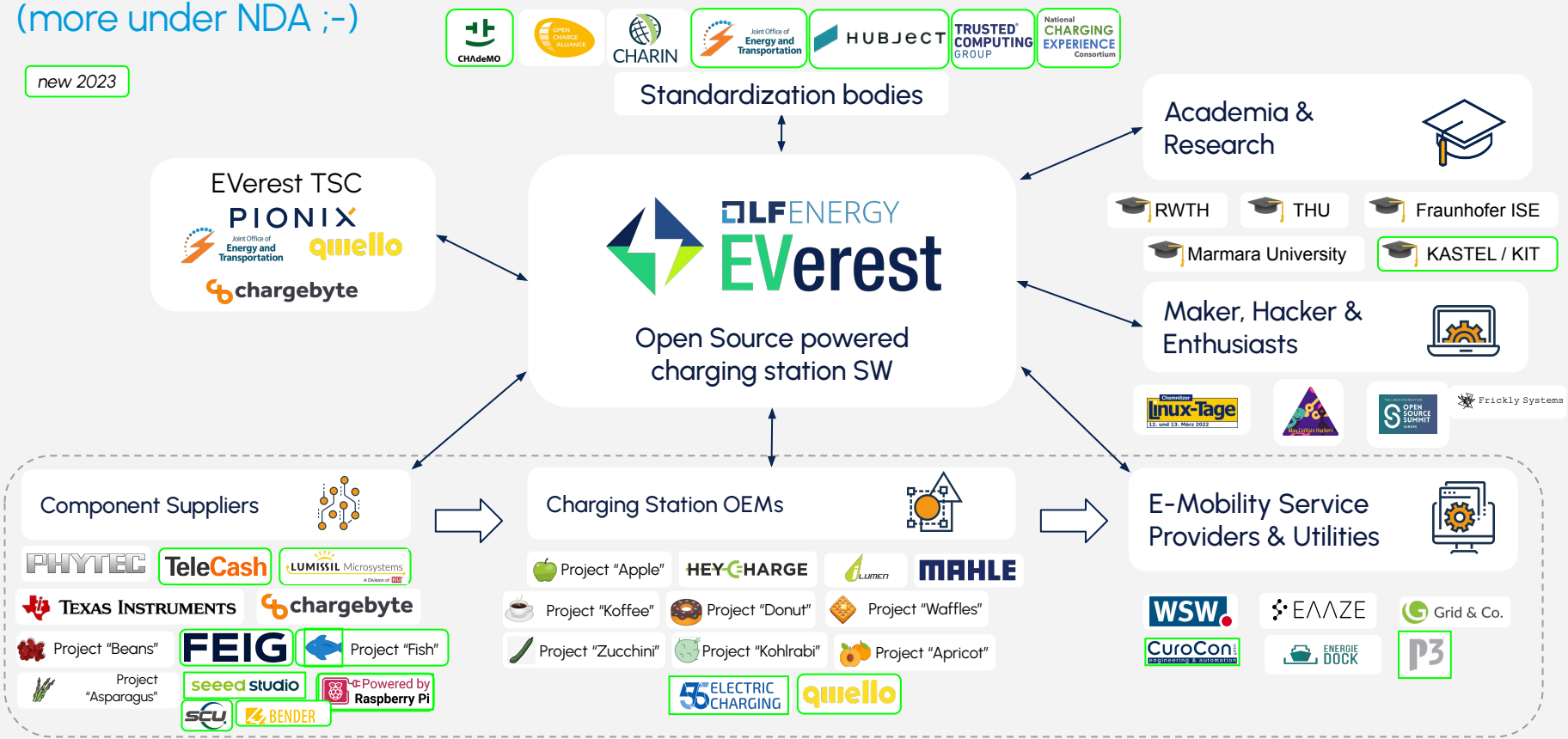
EVerest Roadmap - Implementation status



Ecosystem emerging
(more under NDA ;-)

new 2023

LFENERGY EVerest



EVerest as reference solution

...and many more under NDA ;-)

Plus many more from the community we haven tracked yet.

EVerest compatibility & projects
e.g. ~30 clouds cross-tested

2023: Community Growth

EVerest onboarded a lot of partners & collaborators for its community, and has a plan to attract even more active community

Contributors:

- *Alfen*
- *Chargebyte*
- *US Joint office of Energy and Transportation (JOET)*
- *Pionix*
- *Qwello*
- *many individual small contributors*

Users:

- Approx. 20 charger manufacturers from all continents (most under NDA)

Supplier, using EVerest as reference system:

- Chargebyte
- Texas Instruments
- Phytec
- Analog devices
- many component makers creating drivers for EVerest

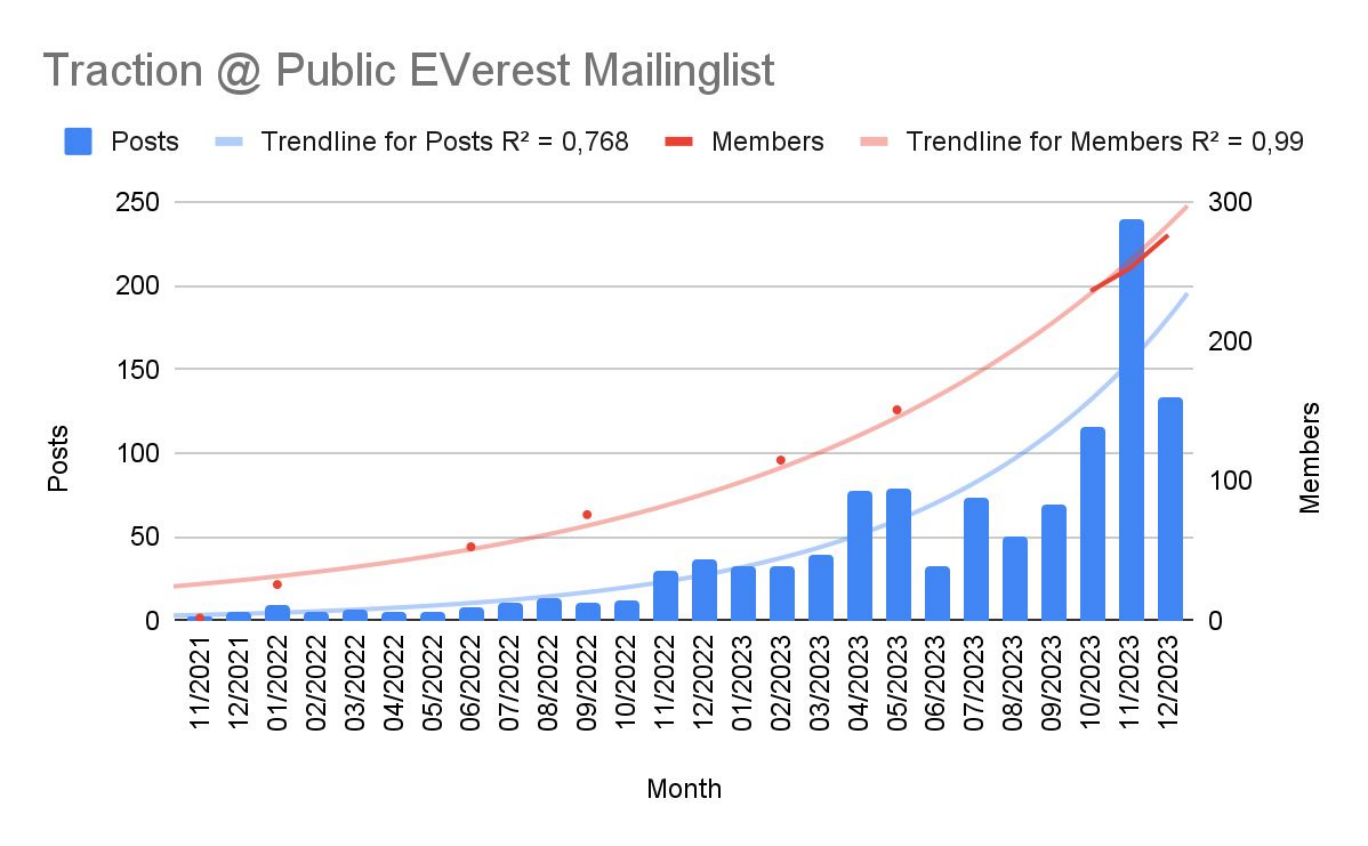
Research partners:

- RWTH Aachen
- TH Ulm
- Fraunhofer ISE
- Marmara University
- KIT *(Karlsruhe Institute of Technology)*
- …

280+ members on the mailing list!

data collected from LFX Insights: https://insights-v2.lfx.linuxfoundation.org/everest/trends

2023: Community Growth / Mailing list activity

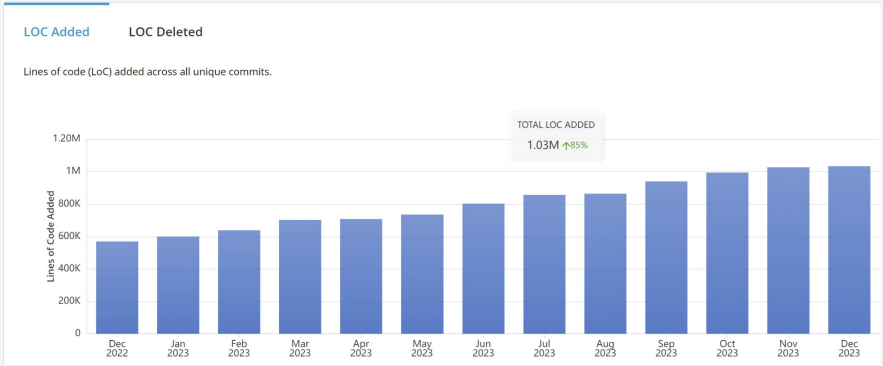


data collected from LFX Insights: https://insights-v2.lfx.linuxfoundation.org/everest/trends

2023: Milestones & Achievements

Contributions:

- exponential Mailing list boost (~10x year-on-year)
- 90 new contributors (now 145 in total)
- Contributions from over >5 different organisations
- > 1M Lines of code added
- typ. >30 attendees in tech weekly



Tech features added this year:

- OCPP 2.0.1 implementation, testing got hot!
  - First charger with 2.0.1 OCA certified
- Successful AC & DC ISO 15118-2 charging sessions using C++ based implementation
- ISO 15118-20 in continuous development
  - First ISO 15118-20 charging sessions.
- DIN SPEC 70121 DC
- Plug & Charge
- Error Handling
- Refactored Energy Management (concepts for smart charging, scheduling, brokers, …)
- EVerest Testing Framework
- Payment Terminal Integration
- Generic Modbus Powermeter
- Telemetry in everest-framework
- SLAC enhancements
- SAE J2847/2 as new service for ISO 15118-2 (V2H/V2G)

data collected from LFX Insights: https://insights-v2.lfx.linuxfoundation.org/everest/trends

Impressions from EVents

Talks, Trade Shows, Events:

- FOSDEM
- State of Open (UK)
- CCC Summer Camp
- Global Brain Corporation Alliance Forum
- Future Tech Day (VDA)
- Virtual Conference on EV infrastructure
- Many webinars and podcasts
- EVerest on booth/presented by a company:
  - OCA Plugfests & CharIN testivals
  - E-World (Essen)
  - ICNC
  - Power2Drive (Munich)
  - e4 Testival (Hockenheim)
  - Hannover Tradeshow
  - CES

EVerest Summit

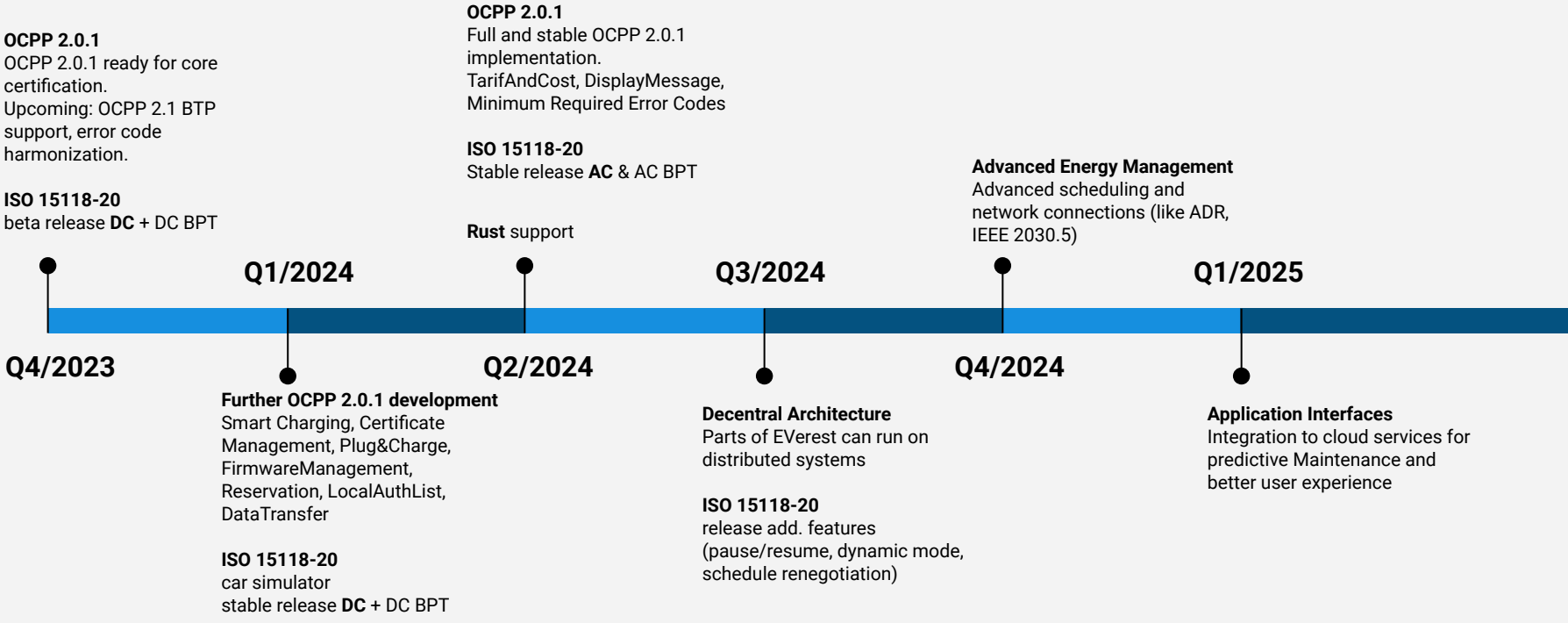
- 5 October 2023
- Pionix office - (Bad Schönborn)
- 70 engineers from all over Europe, from 20+ companies
- Workshops, talks, roadmap session

News articles 2023:

- Interview with "deutsche startups"
- Press release TCG joining EVerest project
- Short profile in T3N magazine (German digital business magazine)
- Article Mobility Portal Europe
- Article EVerest supporting Bender electrical safety relay solutions for EV charging stations
- Press release Qwello joining EVerest Project
- … several indirect reporting around successful PIONIX fundraising…

EVerest Tech Roadmap

EVerest will have Rolling Release at each TSC Monthly with targets for each quarter. But with the transition in the emobility sector, **EVerest's release plan will adjust according to community requests.**



Current Challenges

- Very fast community growth!
  - Overwhelming traffic on mailing list
  - very large meetings
  - need for split up meetings and mailing list, make it happen in a good way
  - backlog of merge requests
- Long onboarding / steep learning curve
- Processes and responsibilities not clear to new contributors

Growth perspective / goals

- EVerest world domination :-)
  - More field usage of EVerest systems
  - onboard more companies to contribute
  - onboard more academia to contribute
  - improve community onboarding process (regular webinars, more detailed documentation)
  - improve build in testing
- Security review!!!
- Physical EVerest events series!
- Partner with OEMs test their own vehicles in development with EVerest
- Global leadership in coverage of new relevant standards
- Expand to asian standards
- Get working group structure up and running

Summary

Community

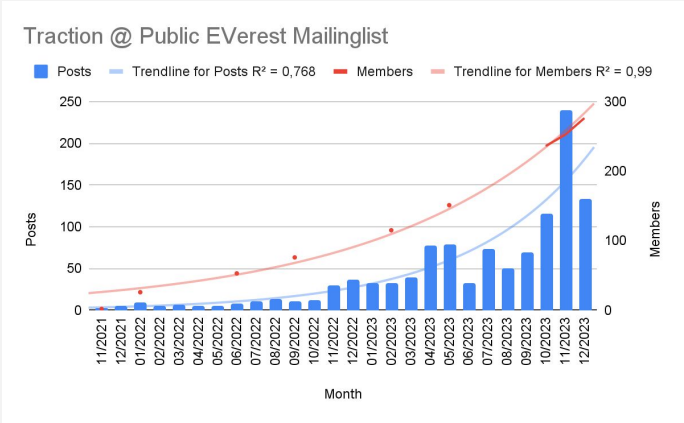
- EVerest community is **growing at a steady** pace, contributors as well as users
- **External contributions** from affiliated partners started to come in during 2023 and happen regularly now.
- **Field usage** imminent
- Plan to attract and **onboard new community members** is defined and execution ongoing
- **List of events** with EVerest featured for **2024** already expanding (CES, FOSDEM, OCA Plugfest, Host of Open EV Charging Conference, EVerest Summit EU & US versions, Open Source Summit Europe, …)

Project

- **TSC structure** and board growing by multiple member organizations
- Charging stack **continuously growing** (OCPP 2.0.1, ISO 15118-20, bidirectional charging, DC)
- Roadmap aiming to complete charging features to **surpass commercially available stacks**
- Most of the code in modern C++, to better support small HW footprints
- **Standards bodies** (OCA, CharIN, CHAdeMO, ChargeX, TCG, …) supporting EVerest

Growth perspective / Goals

- More contributions from Everywhere
- **Setup processes to digest contributions & Working groups**
- OEM self testing during development
- Asia expansion
- Physical EVerest **events series**!
- **Leadership on standard coverage**



LF ENERGY EVerest

Questions?

RTDIP Annual Review

6:00 pm - 6:20 pm

LF ENERGY

Annual Review for RTDIP

2023

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LF ENERGY RTDIP

Easy access to high volume, historical and real time process data for analytics applications, engineers, and data scientists wherever they are.

Use Cases

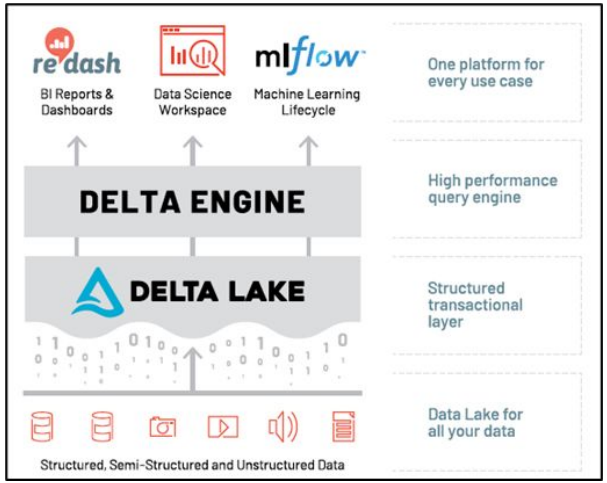
- Process time series data for preventive maintenance management

Technical Summary

Key components are:

- The Delta Ingestion engine used to process streaming data from streaming sources and files stored in cloud storage into Delta format.The data ingested is typically sourced from Pi Historians, OPC UA Servers, IoT Devices 2.
- Python SDK that enables data consumers to read and queryraw, sampled, interpolated or time weighted averages of the data stored in Delta3.
- REST APIs that are wrappers forthe Python SDK that enable developers in non-python languages to consume the data

Contributed by Shell



Learn more at rtdip.io

Edge & Distributed Intelligence

System Management
Data Management

LF ENERGY

Contributions

Source: https://cm.lfx.dev/?projectGroup=278827c3-0638-4ae3-8901-5907f2b0ca12

Organizations contributing and/or using in production

Honeywell

J.P.Morgan

databricks

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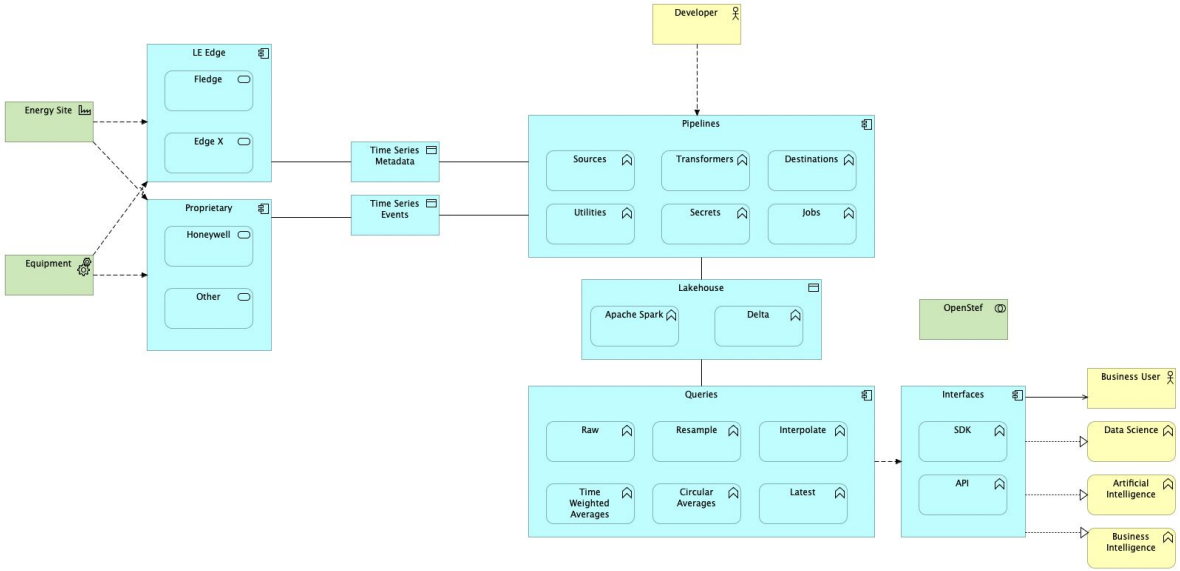
ArchiMate Architecture Diagram



Key Achievements in the past year

- RTDIP is deployed at **86** energy sites globally, including:
  - 9 Wind & Solar Renewable sites
  - 20 Energy & Chemical manufacturing plants
  - 8 Integrated Gas processing sites
  - 12 Research sites
  - 37 Exploration platforms
- Ingests 5 million sensors in real time into a lakehouse containing ~6trln time series data points at Shell
- Integrated with OpenStef in v0.9.6
- ~150k downloads in 2023, ~1k a day currently
- In discussions with

Areas the project could use help on

- RTDIP is gaining traction in the Oil & Gas sector but would like to get into more of the Operator and Utilities sector of Energy. Any assistance to begin discussions with some of the LF Energy member companies around possible adoption of RTDIP would be very helpful
- 2023 was focussed on technical delivery and assurance, 2024 has much more focus on energy sector and technology sector adoption. Any advice or insights to how other projects have increased adoption or approaches to do so would be much appreciated

Feedback on working with LF Energy

- This was the first full year of Shell being a member of LF Energy. It's been fantastic to see the positivity within Shell to be a member of LF Energy and that it has created an avenue for technical resources at Shell to be able to contribute to open source
- The LF Energy community have been incredibly open and inviting from the outset
- The LF Energy Summit was a brilliant way to connect with fellow members and was my personal highlight of the year
- Would like to see more integration between projects and a more holistic overview of how the different projects provide an Energy solution

Marketing/PR/Events Updates

6:20 pm - 6:25 pm

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Marketing and PR Updates

dbrown@linuxfoundation.org
+1 415-420-7880

- Currently in process of building formal 2024 marketing plan
- JOET/EVerest partnership to be announced week of Jan 15, followed by webinar week of Jan 29
- Power Grid Model workshop taking place in person and virtually Jan 18
- CoMPAS meetup at RTE Paris taking place Jan 22-23
- Developing Seeed ReCharger case study and webinar with EVerest project (jointly with LF Zephyr project which is also used in the product) - targeting February
- Use this form to submit any comms/marketing support requests

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Recent Media Coverage

- TFIR - Grid eXchange Fabric (GXF) Communication Platform Helps Monitor Devices In The Field | Robert Tusveld
- VMBlog - Cybersecurity Best Practices for Using Open Source in Energy Systems
- TFIR - Fostering Collaboration In Open Source Communities | ben van 't ende – Alliander
- SecurityBriefAsia - OpenSSF announces new members & secure software development principles
- AltEnergyMag - Linux Foundation Energy Adds Five New Open Source Projects, Expanding its Energy Infrastructure Tech Stack for Battery Storage, Grid Resilience, EV Charging, and More
- North American Clean Energy - Linux Foundation Energy Adds Five New Open Source Projects, Expanding its Energy Infrastructure Tech Stack for Battery Storage, Grid Resilience, EV Charging, and More
- TFIR - LF Energy Adds Five New Open Source Technical Projects
- ITBrief - LF Energy unveils new open source projects for energy transition
- ERP Today - The open source energy infrastructure stack strengthens
- PRNewswire - This Week in Energy News: 11 Stories You Need to See
- Power Electronics - Revolutionizing Energy Infrastructure: The Rise of Fully Digital Grids (Podcast)
- Microgrid Media - Revolutionizing the Energy Landscape: The Emergence of Microgrids
- North American Clean Energy - LF Energy Open Sustainable Technology Project Launches ClimateTriage.com to Connect Developers with Impactful Sustainability Projects
- Climate Tech Review - ClimateTriage is GitHub for Climate Action
- EnergyCentral - New Resource to Connect Developers with Technical Projects Focused on Sustainability
- TFIR - Open Source Can Help With How We Consume And Produce Electricity | Luis Maria Zamarreño
- TFIR - LF Energy Is Bringing Different Players Together To Combat Energy Crisis | Christophe Villemer – Savoir-faire Linux

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Upcoming Event CFPs

- e-world Energy & Water - Feb 20-22, 2024 - Rolling submission deadline
- Smart Grid Tech Week - Mar 18-22, 2024 - Rolling submission deadline (email alex.matthews@smartgrid-forums.com with speaking proposals)
- Carbon Tracking & Reporting - March 26-27, 2024 - Rolling submission deadline
- Energy Thought Summit - April 15-18, 2024 - Rolling submission deadline
- Embedded Open Source Summit - April 16-18, 2024 - Submission deadline Jan 14
- Open Source Summit North America - April 16-18, 2024 - Submission deadline Jan 14
- CIRED Vienna - June 19-20, 2024 - Submission deadline Dec 8
- MOVE London - June 19-20, 2024 - Rolling submission deadline (email cormac.martin@terrapinn.com with speaking proposals)
- IEEE PES General Meeting Seattle - July 21-25, 2024 - Submission due Nov 8
- The Smarter E Europe Conferences Munich (4 co-located conferences) - June 18-21, 2024 - Submission due Jan 10
- T&D World Live - October 1-3, 2024 - Submissions due Feb 15

Ambassador Program

- Applications have now closed for Ambassador Program
  - https://lfenergy.org/newsroom/ambassador-program/
- Six applications were received
- Requirements
  - Be active in at least one LF Energy project
  - Conduct at least one activity per quarter to remain an active ambassador
    - Speaking engagements, webinars, videos, blogs, etc.
- We will circulate a spreadsheet containing all the applications to the TAC, and request you all rate them by the end of this month

Closing and Next Meeting

6:25 pm - 6:30 pm

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Next TAC Meeting

The next meeting of the LF Energy TAC is scheduled for 30 January 2024 at 8:00 am US Pacific Time/11:00 am US Eastern Time/5:00 pm Central European Time. Agenda will include:

- Project Proposal - Sylva Project Proposal
- Annual Review - OpenFIDO Annual Review
- Annual Review - Dynawo Annual Review
- General Updates
- Marketing/PR/Events update

To add agenda items, go to https://github.com/lf-energy/tac/issues/new/choose.
You can review the TAC Agenda at https://github.com/orgs/lf-energy/projects/2/views/1

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