



TAC Meeting

14 December 2021

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Examples of types of actions that are prohibited at Linux Foundation meetings and in connection with Linux Foundation activities are described in the Linux Foundation Antitrust Policy available at <http://www.linuxfoundation.org/antitrust-policy>. If you have questions about these matters, please contact your company counsel, or if you are a member of the Linux Foundation, feel free to contact Andrew Updegrave of the firm of Gesmer Updegrave LLP, which provides legal counsel to the Linux Foundation.

TAC Voting Members

New members in **bold**

| Full Name | Account Name | Appointed By |
|-----------------------|--|--|
| Boris DOLLEY | RTE (Reseau de Transport dElectricite) | Vote of TSC Committee - OperatorFabric |
| Anne Tilloy | RTE (Reseau de Transport dElectricite) | Vote of TSC Committee - PowSyBI |
| Carmen Best | Recurve | Vote of TSC Committee - OpenEEmeter |
| Arjan Stam | Alliander | Membership Entitlement |
| Jonas van den Bogaard | Alliander | Vote of TSC Committee - GXF |
| Benoît Jeanson | RTE (Reseau de Transport dElectricite) | Membership Entitlement |
| Antonello Monti | RWTH Aachen University | Vote of TSC Committee - SOGNO |

LF Energy Hosted Project Leads

Changes in **bold**

| Project | Project Lead(s) |
|-------------------------|--|
| PowSyBI | Anne Tilloy, RTE |
| OperatorFabric | Boris Dolley, RTE |
| OpenEEmeter | Carmen Best, Recurve |
| GXF | Jonas van den Bogaard, Alliander |
| SOGNO | Antonello Monti, RWTH Aachen University |
| CoMPAS | Frederic Fouseret, RTE |
| FledgePOWER | Akli Rahmoun, RTE |
| Hyphae | Kotaro Jinushi, Sony ESL |
| openLEADR | Lonneke Driessen & Stan Janssen, OpenADR |
| SEAPATH | Eloi Bail, Savoir-faire Linux |
| Grid Capacity Map | <i>none</i> |
| Shapeshifter | Jelle Wijnja, Alliander |
| OpenSTF | Frank Kreuwel, Alliander |
| EVerest | Marco Möller, PIONIX |
| Green Energy Hub | Martin F. Hansen, Energinet |
| FlexMeasures | Nicolas Höning, Seita Energy Flexibility B.V. |

Working Groups

- Security WG in dormancy pending new focus and leadership
- CI/CD WG in dormancy due to lack of interest
- Annual review for FAWG and DAWG on January 17th, 2022

| Name | Description | Lead |
|-----------------------------|---|-------------------------------------|
| Full Architecture WG (FAWG) | Architecture standing committee to develop the overall architecture for LF Energy | Benoît Jeanson, RTE |
| Data Architecture WG (DAWG) | Working group on Data Architecture | |
| Security WG | Working Group on Security | Markus Mirz, RWTH Aachen University |

Agenda

Opening (25 Minutes)

- **Summary of last TAC meeting & Updates from the Board Meeting**
- **Landscape updates**
- **TAC Sponsors for projects**

TAC Business (50 Minutes)

- Hyphae annual review
- Everest incubation review

Outreach updates (10 Minutes)

Closing and next meeting (5 Minutes)

Summary of last TAC meeting

- Meeting notes and deck at <https://wiki.lfenergy.org/display/HOME/Technical+Advisory+Council#TechnicalAdvisoryCouncil-MeetingMinutes>

Updates from the Board

Landscape now with more project info!

We are using the LF Energy Landscape to showcase more project information:

- Mailing List/Slack Channel
- LFX Insights
- SBOM
- Wiki
- TSC Meeting Notes
- Calendar
- Contribution Guidelines

ACTION: Project leads please review your entry and ensure it is accurate; issue PR for any changes needed.



LF Energy Early Adoption LF Project

Open Source Software License Mozilla Public License

CII Best Practices 25%

| | | |
|-------------------------|---|---------------------------|
| Crunchbase | crunchbase.com/organization/lf-energy | more... total: 52 |
| LinkedIn | linkedin.com/company/lf-energy | |
| Twitter | @LFE_Foundation | Latest Tweet this week |
| First Commit | 5 years ago | Latest Commit 3 weeks ago |
| Contributors | 35 | Headcount 1-10 |
| Headquarters | San Francisco, California | |
| Mailing List | https://lists.lfenergy.org/g/sogno-discussion | |
| Slack Channel | #sogno | |
| LFX Insights | https://insights.lfx.linuxfoundation.org/projects/lfenergy%2Fsogno | |
| Wiki Page | https://wiki.lfenergy.org/display/HOME/SOGNO | |
| SBOM | https://github.com/lfscanning/spdx-lfenergy/tree/main/sogno | |
| TSC Meeting Notes | https://github.com/sogno-platform/tsc/tree/master/tsc/meetings | |
| Calendar | https://lists.lfenergy.org/g/sogno-tsc/calendar | |
| Contribution Guidelines | https://github.com/sogno-platform/tsc/blob/master/CONTRIBUTING.md | |

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.”

ASK: Volunteer to be a TAC sponsor for a project

| Project | Current Level | TAC Sponsor |
|-------------------|----------------|-----------------------|
| CoMPAS | Incubation | |
| EVERest | Sandbox | |
| FlexMeasures | Incubation | |
| FledgePOWER | Incubation | Benoît Jeanson |
| Green Data Hub | Incubation | |
| Grid Capacity Map | Incubation | |
| GXF | Early Adoption | Jonas van den Bogaard |
| Hyphae | Incubation | Antonello Monti |
| OpenEEmeter | Incubation | Carmen Best |
| OpenLEADR | Incubation | |
| OpenSTEF | Incubation | Jonas van den Bogaard |
| OperatorFabric | Early Adoption | Boris Dolley |
| PowSyBI | Early Adoption | Anne Tilloy |
| SEAPATH | Incubation | Benoît Jeanson |
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| SOGNO | Early Adoption | Antonello Monti |

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TAC Business (50 Minutes)

- **Hyphae annual review**
- **EVerest incubation review**

Outreach updates (10 Minutes)

Closing and next meeting (5 Minutes)

Hyphae Annual Review



The logo features a stylized orange hexagonal network on the left, followed by the text 'LFE ENERGY' in blue and 'Hyphae' in large orange letters.



LFE Hyphae

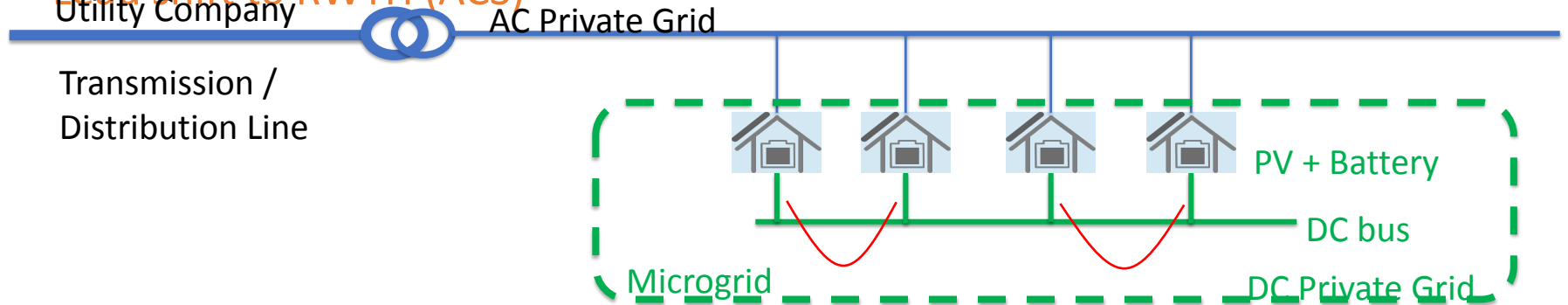
Annual Review

December 14, 2021

LFE Hyphae: Work status (Incubation stage)

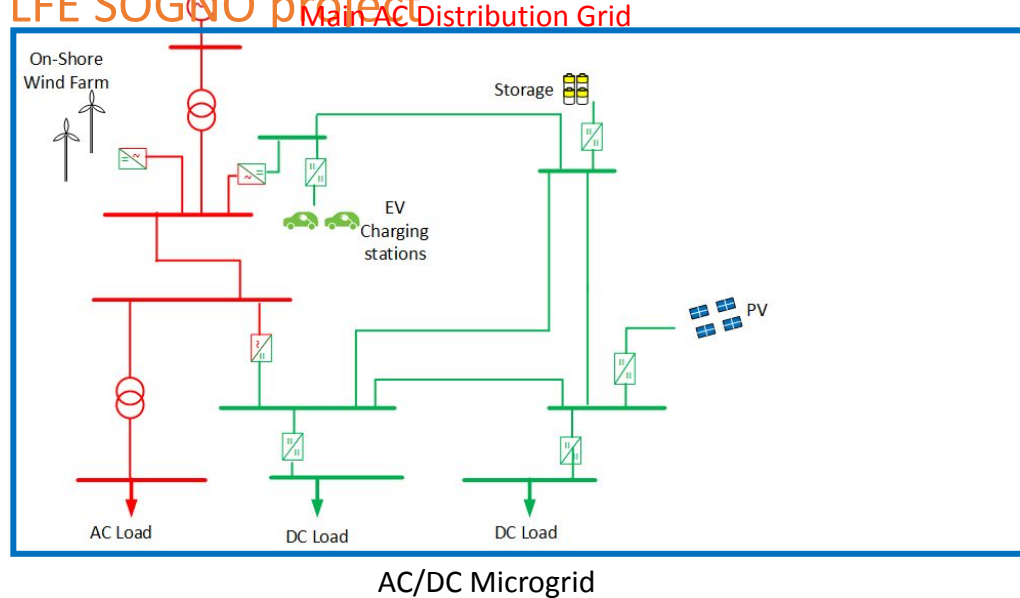
- SONY Computer Science Laboratories
- Single-bus DC microgrid
- Autonomous distributed control
 - Peer-to-peer power exchange between houses with PV+Battery

- Lead shift to RWTH (ACS)



LFE Hyphae: New work approach

- From single-bus microgrid to multi-terminal microgrid
- From DC microgrid to hybrid AC/DC microgrid connected to AC distribution grid
- Microgrid control as services to distribution grid
- Synergies with LFE SOGNO project

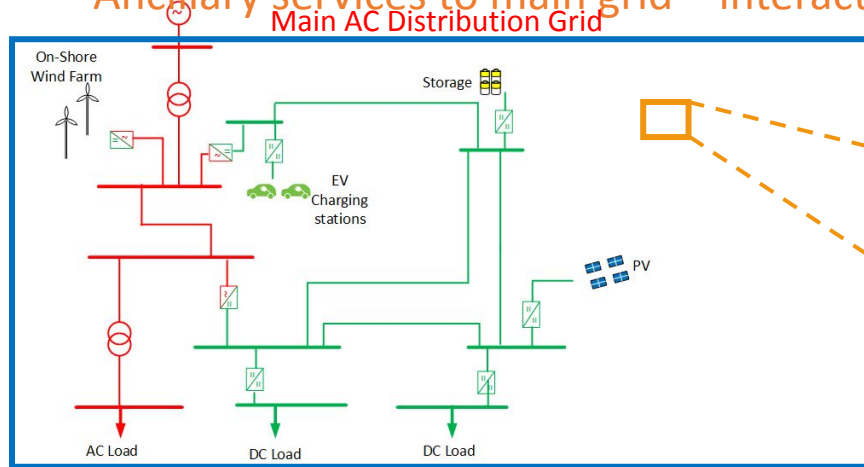


LFE Hyphae: Members

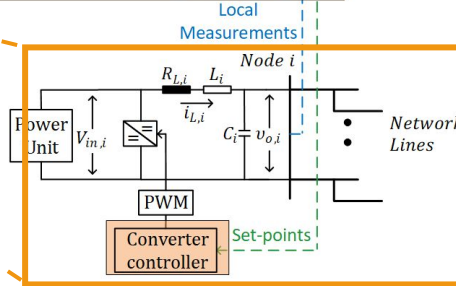
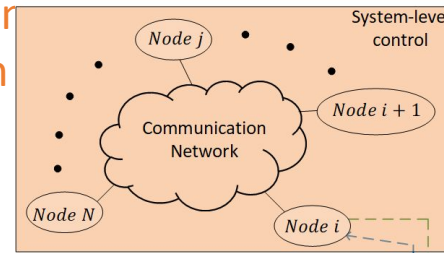
- Temporary lead of LFE Hyphae by RWTH (ACS)
- Results from FEN DC-Sek project
 - RWTH (ACS & PGS)
 - EATON
 - OPAL-RT
 - Kiepe
- Flexible Electrical Networks (FEN) Consortium
- Relevant partners
 - EATON
 - Intra Energy (to join)
- Future lead of LFE Hyphae by EATON
- SONY to be involved again in future

LFE Hyphae: Microgrid control

- **Micro-services: Open-source models and scenarios of microgrid control/operation**
 - Secondary control – optimisation of operation – energy management
 - Islanding/grid-connection of microgrid – synchronisation
 - Ancillary services to main grid – interactions with



AC/DC microgrid



Control Strategies for Converters

LFE Hyphae: Time-Plan

- Step 1: System model of AC/DC microgrid
- Step 2: Secondary control (islanded microgrid)
- Step 3: Islanding/grid-connection
- Step 4: Ancillary services to main grid

| Step | Time of deliverable of open-source models |
|--------|---|
| Step 1 | Summer 2022 |
| Step 2 | End 2022 |
| Step 3 | Summer 2023 |
| Step 4 | End 2023 |



Xing.FENaachen.net



Linkedin.FENaachen.net



@FENaachen

Thank you for your attention!

Contact:

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Leader FEN DC-Sek Project
Institute for Automation of Complex Power
Systems
RWTH Aachen University

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Image sources (banner)

- Exterior view of building – @FEN GmbH
- Landscape with wind turbine – @DDM Company
- DC-DC converter – @E.ON ERC
- Network – iStockphoto.com/studiovision
- Aerial view – @Peter Winandy
- Energiewende – @stockWERK/fotolia.com
- Puzzle – @vege/fotolia.com
- Power grid/Wind turbine/Solar plant – @PhotographyByMK/fotolia.com

Everest Incubation Review



OLF ENERGY

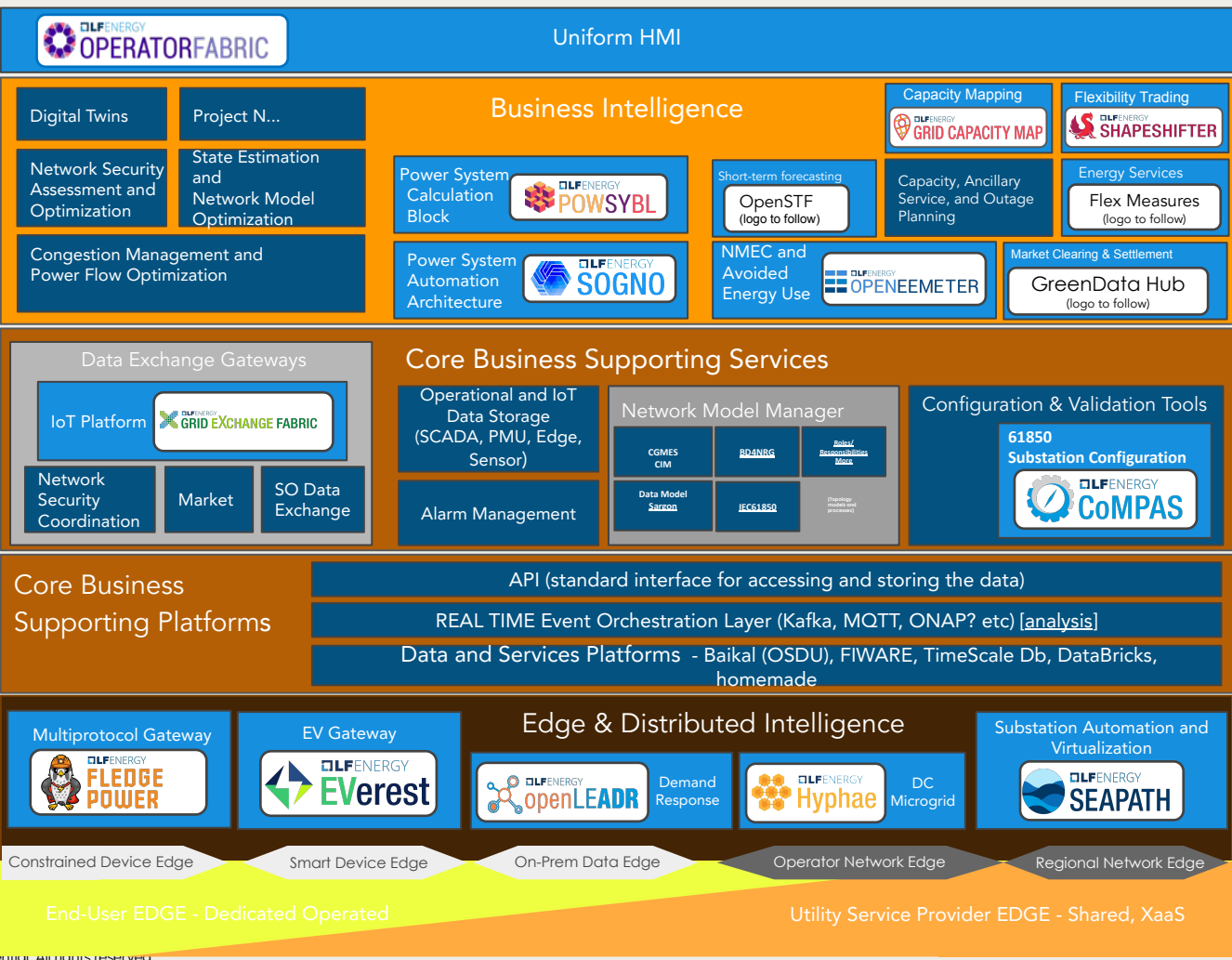
EV Everest

2021-12-14
TAC Everest Incubation Review

Application Catalogue

Data & Services

Infrastructure



LF Energy Current Projects

Future LF Energy Projects



Security

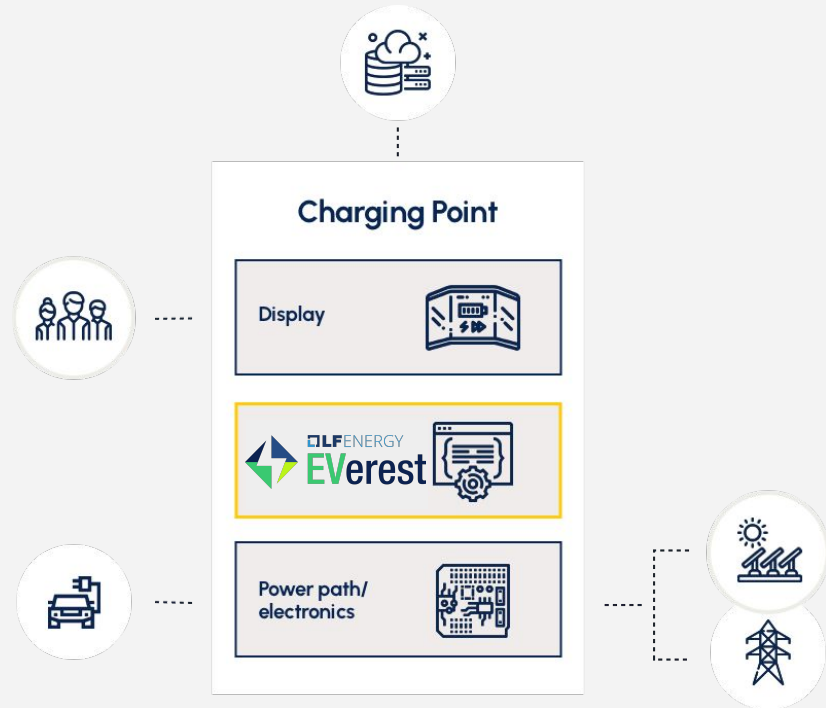
For more background on Edge see [this](#).

›But the Charging Industry Lacks a Unified Ecosystem

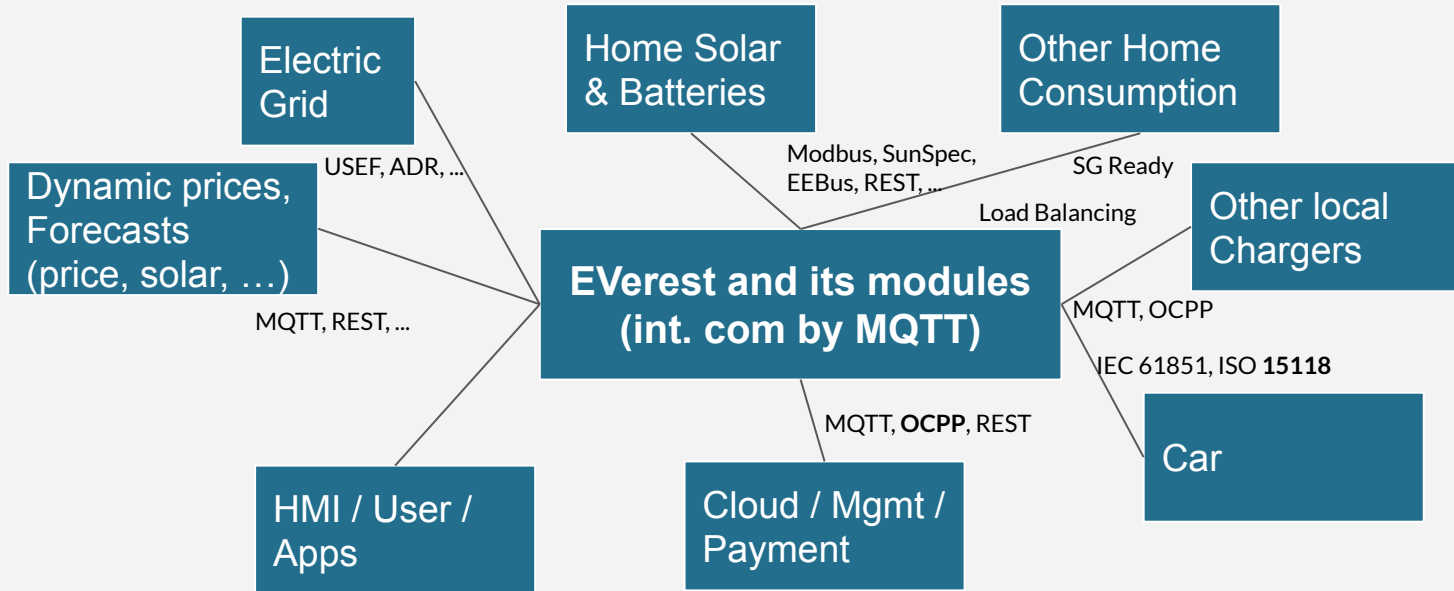
No De-facto standards and too many links:

- High Fault-Rate
- Expensive & slow development
- Complex mechanisms to proliferate innovations
- Market fragmentation

Customers and Industry suffering



›Everest Connects Multiple Energy-Services at the Edge



> Work in Progress

Everest is currently running only with a dedicated HW setup of Pionix, aiming to solve two minimum viable use cases:

1. Smart charging at home
2. Public AC charging with integration of std. OCPP backend

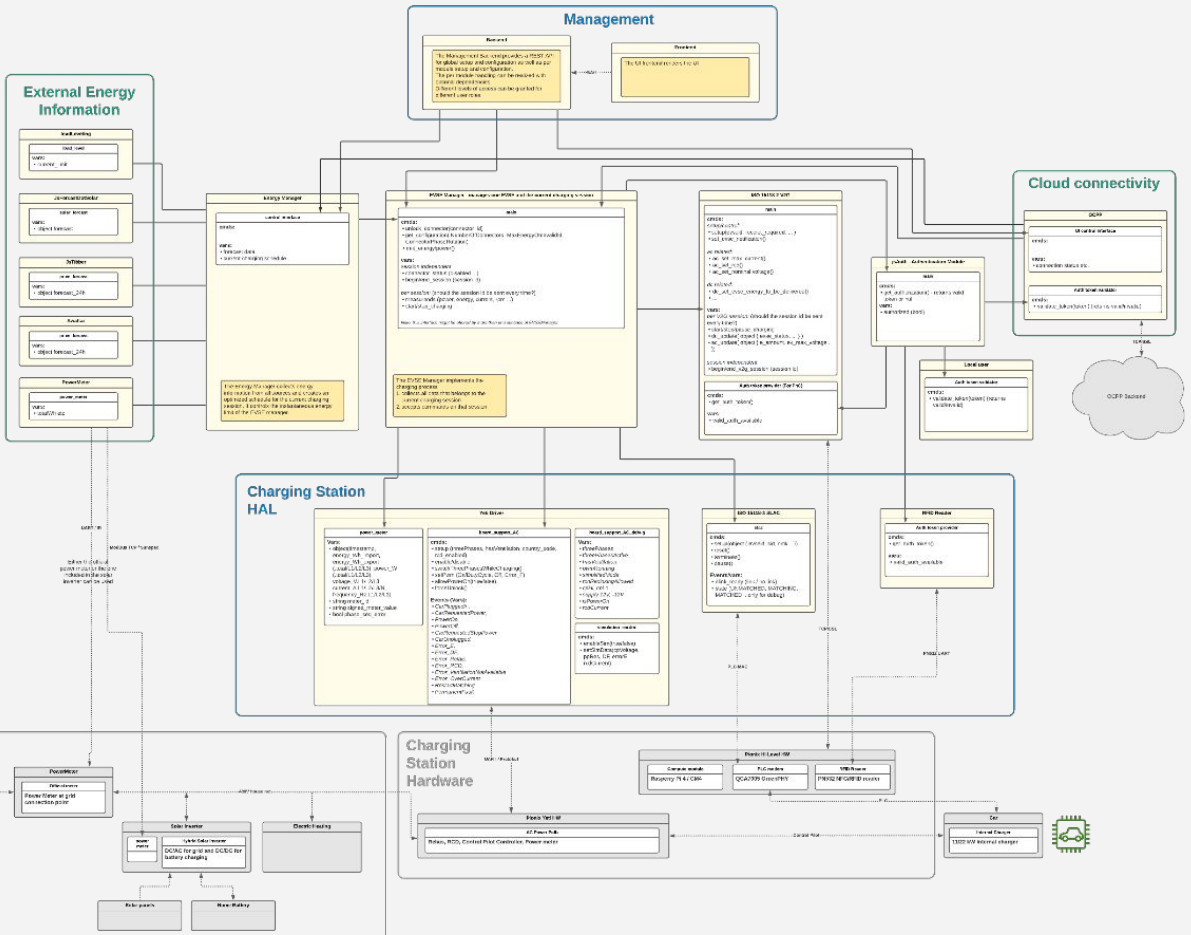
To enable this, we are currently incorporating the following standards and technologies.

- ISO 15118 (AC wired charging, based on existing JAVA stack)
- EN 61851
- OCPP 1.6 (JSON) - Core Profile + Security
- Modbus
- Sunspec
- MQTT framework to easily configure loosely coupled modules
- NFC authentication
- NodeRed integration
- Packetization
- Smart Charging based on energy prices and solar production
- Price API form: aWATTar, Tibber
- Solar forecast API: <https://forecast.solar/>

Non Code Work:

- Pionix joined LFE
⇒ DONE
- Trademark and domain transfer to LFE
⇒ WIP

Everest modules overview



Everest Roadmap

Our vision is that Everest enables every way of (at least a bit) smart charging, in all situations, from home to Work and even Public AC and DC unidirectional and bidirectional grid friendly charging. Moving forward, we have quite a list of things we want to add, and this is probably far from complete:

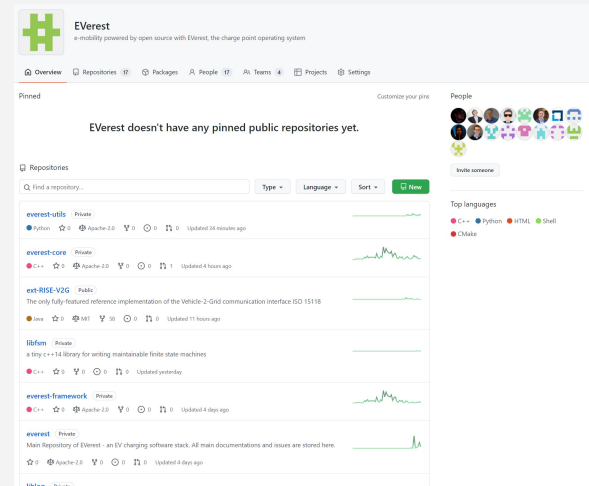
- Prio 1: Web User Interface
 - For Configuration (Factory, Installation, User)
 - For just end users
 - For display on optional embedded (touch) screens
- Prio 2: Backend Integration: <https://www.openchargealliance.org/>
 - OCPP 1.6 - all optional profiles
 - OCPP 2.0.1
- Car Compatibility
 - Tests with various OEMs
- Car Communication
 - ISO 15118-X - all other features (DC, Wireless, Bidirectional, Plug&Charge), rewrite in C++ to reduce compute & memory footprint
 - DC DIN SPEC 70121
 - CHAdeMO
- Grid integration
 - ADR <https://www.openadr.org/>
 - USEF <https://www.usef.energy/>
- Smart Home Integration:
 - EEBus <https://www.eebus.org/>
 - SG Ready
 - Smart Meter Integration
- More HW drivers for e.g. Meters, other AC and DC charging controllers
- Payment APIs
- Portation on HW from different Vendors
 - To be announced
- Special Plugins from several Startups
 - HeyCharge (~offline payment with crypto tokens)
 - BYTERAT (~battery diagnostics)
- OPEN TO MORE :-)



and **more** is getting prepared...

Best Practices

- [BadgeApp](#) cii best practices passing
- GitHub CD/CI + Ticket System
<https://github.com/EVERest>
- Static Code Scan:
<https://app.codacy.com/organizations/gh/EVERest>
WIP: (full deployment after going public)
- Key leakage scan
<https://get.spectralops.io>
WIP: (full deployment after going public)
- Dokumentation
md + rst + autogenerated from manifests
- Mailing-Lists, Slack, Calendar, TSC
TSC-scheduled - every 4th Wednesday 17:00 - 18:00 CET starting January
<https://meet.google.com/gug-mtqg-uir>
<https://lists.lfenergy.org/g/everest>
- Going Public: ~ 12th January 2022
 - Git-Repos+Documentation visibility
 - Blog Post
 - TFIR Video Interview
 - Social Media



CII Best Practices 100% [Projects](#) [Sign Up](#) [Login](#)

EVERest

[Expand parent](#) [Show all details](#) [Hide met & N/A](#)

Projects that follow the best practices below can voluntarily self-certify and show that they've achieved a Core Infrastructure Initiative (CII) badge. [Show details](#)

If this is your project, please show your badge status on your project page! The badge status looks like this: [cii best practices](#) passing Here is how to embed it: [Show details](#)

These are the passing level criteria. You can also view the silver or gold level criteria.

| | |
|----------------|-------|
| Basics | 13/13 |
| Change Control | 9/9 |
| Reporting | 8/8 |
| Quality | 13/13 |
| Security | 16/16 |
| Analysis | 8/8 |

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Project badge entry owned by: caller.
Entry created on 2021-11-18 20:57:00 UTC, last updated on 2021-11-26 15:04:32 UTC. Last achieved passing badge on 2021-11-26 15:04:32 UTC.

➤ To be considered for the Incubation Stage, the project must meet the following requirements:

- ✓ Have an open and documented technical governance, including:
 - ✓ A LICENSE file in every code repository, with the license chosen an [OSI-approved license](#).
 - ✓ A README file welcoming new community members to the project and explaining why the project is useful and how to get started.
 - ✓ A CONTRIBUTING file explaining to other developers and your community of users how to contribute to the project. The file should explain what types of contributions are needed and how the process works.
 - ✓ A CODEOWNERS or COMMITTERS file to define individuals or teams that are responsible for code in a repository; document current project owners and current and emeritus committers.
 - ✓ A CODE_OF_CONDUCT file that sets the ground rules for participants' behavior associated and helps to facilitate a friendly, welcoming environment. By default projects should leverage the [Linux Foundation Code of Conduct](#) unless an alternate Code of Conduct is approved prior.
 - ✓ A RELEASE file that provides documentation on the release methodology, cadence, criteria, etc.
 - ✓ A GOVERNANCE file that documents the project's technical governance.
 - ✓ A SUPPORT file to let users and developers know about ways to get help with your project.
- ✓ Complete and approve the Technical Charter and agree to transfer any relevant trademarks to The Linux Foundation or its affiliate, LF Projects, LLC, and to assist in filing for any relevant unregistered ones.
- ✓ Have achieved and maintained a Core Infrastructure Initiative [Best Practices Badge](#) at the 'Passing' level.
- Have had a successful license scan with any critical issues remedied.
- ✓ Have a defined project mission and scope
- ✓ An overview of the project's architecture and features defined.
- ✓ A project roadmap defined, which should address the following questions.
 - ✓ What use cases are possible now?
 - ✓ What does the next year look like in terms of additional features and use cases covered?
- ✓ Community and contributor growth assessment
 - ✓ The current number of contributors and committers, and the number of different organizations contributing to the project.
 - ✓ Demonstrate a sustained flow of commits / merged contributions
 - ✓ A credible plan for developing a thriving user community, in particular expanding the number of committers and contributors?
 - ✓ Outline of the plan for the project to complete the requirements for Adopted Stage
- **Receive the affirmative majority vote of the TAC.**

waiting on
LF since
>4 weeks
→ LF
Infrastr. is
in rework

TODAY :-)

Project Review Cycle

| Project | Current Level | Initially Accepted | Last Review Date | Next Review Date |
|--------------------|-------------------|--------------------------|------------------|--------------------------|
| OpenEEmeter | Incubation | June 4, 2019 | | October 12, 2021 |
| EM2 | Early Adoption | June 4, 2019 | | October 12, 2021 |
| GXF | Early Adoption | February 4, 2020 | | October 12, 2021 |
| SEAPATH | Incubation | October 6, 2020 | | November 23, 2021 |
| OpenLEADR | Incubation | September 15, 2020 | | November 23, 2021 |
| Hyphae | Incubation | December 8, 2020 | | December 14, 2021 |
| FledgePOWER | Incubation | February 11, 2021 | | February 15, 2022 |
| SOGNO | Early Adoption | October 27, 2020 | March 16, 2021 | March 8, 2022 |
| Shapeshifter | Incubation | April 6, 2021 | | March 29, 2022 |
| Grid Capacity Map | Incubation | April 27, 2021 | | April 19, 2022 |
| OperatorFabric | Early Adoption | April 30, 2019 | July 20, 2021 | July 12, 2022 |
| CoMPAS | Incubation | May 5, 2020 | June 29, 2021 | July 12, 2022 |
| PowSyBI | Early Adoption | April 30, 2019 | August 31, 2021 | August 23, 2022 |
| OpenSTEF | Incubation | September 21, 2021 | | September 13, 2022 |
| Everest | Sandbox | October 12, 2021 | | November 15, 2022 |
| Green Data Hub | Incubation | October 12, 2021 | | October 25, 2022 |
| FlexMeasures | Incubation | November 2, 2021 | | November 15, 2022 |

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Outreach Updates

- TFiR videos
- Recent press articles
- We want your project news!
 - Doesn't need to be anything huge!
 - Examples of news:
 - New releases (example <https://github.com/powsybl/pypowsybl/releases>)
 - New features added
 - New maintainers/organizations involved
 - Upcoming plans

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Next TAC Meeting

The next meeting of the LF Energy TAC is scheduled for 25 January 2022 at 8:00 am US Pacific Time/11:00 am US Eastern Time/5:00 pm Central European Time.

Agenda will include:

- Recap of last TAC meeting/Governing Board updates
- Working Groups annual review

January 4th TAC meeting cancelled due to holidays



Thank you!