Technical Advisory Council (TAC) Meeting

10 February 2026

LF ENERGY

Meeting information

- ➔ Meeting to begin at 5:00 pm Central European Time
- ➔ Join the meeting at the link in your calendar in LFX Individual Dashboard
- ➔ 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://tac.lfenergy.org/meetings/

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Agenda

All Times in Central European Time Zone

- 5:00 pm - 5:15 pm - Opening and General Updates
  - TAC member updates and annual review date reminders
  - Project Pipeline
  - Request for TAC Approval: Power Grid Model Transition to Early Adoption Stage #745
- 5:15 pm - 5:35 pm - Annual Review: Edge Interoperability and Flexibility SIG #458
- 5:35 pm - 5:55 pm - Annual Review: Grid Simulation and Modeling SIG #459
- 5:55 pm - 6:15 pm - New Project Proposal: AINETUS (AI for safety-critical NEtwork infrastrUctureS) #704
- 6:15 pm - 6:25 pm - Marketing and PR Updates
- 6:25 pm - 6:30 pm - Closing and Next Meeting

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Opening and General Updates

5:00 pm - 5:15 pm

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Technical Advisory Council (TAC)

voting representatives

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Antonello Monti

Chair

Professor

RWTH Aachen University

Art Pope

Member of Technical Staff

Google LLC

Boris DOLLEY

Director of OSPO and Sustainable IT Strategy

RTE (Reseau de Transport dElectricite)

Frédéric Didier

Lead tech

RTE (Reseau de Transport dElectricite)

Jonas van den Bogaard

Vice Chair

Open Source Office Lead

Alliander

Maarten Mulder

PO IoT Field Device Platforms

Alliander

Moïse K. Kameni

Entreprise Architect and Head of Open Source Program Office

Hydro-Québec

Peter Mitri

Individual - No Account

Sachin Bhakar

Strategy Advisor - Computational Science & Digital Innovation

Shell Energy Retail Limited

Travis Sikes

Data Science Manager

Recurve

Projects

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TAC Meeting Schedule 2026

The TAC meetings are monthly, on the second Tuesday of the month at 8:00am US Pacific Time/11:00am US Eastern Time unless otherwise noted.

- ~~January 13~~
- **February 10**
- March 10
- April 14
- May 12
- June 9
- July 14
- August 11
- September 8
- October 13
- November 10
- December 8

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Project and Working Group Leads

Name	Chair
Arras	Alyona Teyber
Battery Data Alliance	Gabe Hege
CitrineOS	Thana Paris
CoMPAS	Sander Jansen
Connected Data Specification - Customer Data Working Group (CDS WG3)	Daniel Roesler
Connected Data Specification - Power Systems Data Working Group (CDS WG2)	Stephen Suffian
Connected Data Specification - Registration Working Group (CDS WG1)	Daniel Roesler
covXtreme	Sachin Bhakar
CUPID (Controllable Unit Protocol Interface for DER)	
Dynaωo	Marco Chiaramello
EVerest	Marco Möller
FIDOPower	Alyona Teyber
FledgePower	Romain Lebrun Thauront
FlexMeasures	Nicolas Höning
Grid Edge Interoperability & Security Alliance (GEISA)	Michael Stuber, Richard Lam
Grid eXchange Fabric (GXF)	Maarten Mulder
Grid Vantage	Alyona Teyber
Grid2Op	Benjamin Donnot
GridFM	François Mirallès
Hyphae	Arila Barnes
LF Energy Semantic Energy Framework (LFE-SEF)	Barry Nouwt
NODE Collective	Deandrea Salvador
OpenDSM	Travis Sikes
OpenLEADR	Arila Barnes, Stan Janssen, Hugo Van De Pol
OpenSTEF	Daan Van Es
OpenSynth	Gus Chadney
OperatorFabric	Frédéric Didier
ORES (Open Renewal Energy Systems)	Chris Xie
Power Grid Model	Peter Salemink
Power Stability Wide Area Monitoring Protection (p-SWAMP)	
PowSyBL	Peter Mitri
Real Time Data Ingestion Platform (RTDIP)	Chloe Ching
RTC-Tools	Jesús Andrés Rodríguez Sarasty
SC Decarbonisation Hub	Sachin Bhakar
SEAPATH	Eloi Bail
Shapeshifter	Robben Riksen
SOGNO	Antonello Monti

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SIGs and SIG Leaders

Name	Chair
AI SIG	Alexandre Parisot
Edge Interoperability and Flexibility SIG	Robert De Leeuw, Thana Paris
Grid Simulation and Modeling SIG	Thomas Van Dijk
OSPO SIG	Moïse Kameni

TAC Resources

- TAC Website - https://tac.lfenergy.org
  - Contains all the TAC policies and meeting materials, as well as guides to using the various LF Energy tools
- TAC Overview - https://github.com/lf-energy/foundation/blob/main/overview_deck/LF%20Energy%20TAC%20Overview.pdf
  - Guide for TAC members on their role and how to navigate LF Energy
- Project Resource Request form - https://tac.lfenergy.org/tools/resource_request.html.

Questions/feedback - let us know!

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Annual Review Schedule - TAC

Source: https://tac.lfenergy.org/process/review_cycle.html

Name	Last Review Date	Next Review Date
SC Decarbonisation Hub		11/11/2025
~~*Edge Interoperability and Flexibility SIG*~~		~~*2/10/2026*~~
~~*Grid Simulation and Modeling SIG*~~		~~*2/10/2026*~~
OpenSynth	**3/11/2025**	**3/10/2026**
SEAPATH	**1/14/2025**	**3/10/2026**
LF Energy Semantic Energy Framework (LFE-SEF)	4/23/2024	4/14/2026
Shapeshifter	4/8/2025	4/14/2026
CUPID (Controllable Unit Protocol Interface for DER)	5/13/2025	5/12/2026
OpenDSM	5/13/2025	5/12/2026
SOGNO	5/13/2025	5/12/2026
FledgePower	6/10/2025	6/2/2026
Grid2Op	2/11/2025	6/2/2026
CoMPAS	6/10/2025	6/9/2026
Grid eXchange Fabric (GXF)	7/8/2025	7/14/2026
Real Time Data Ingestion Platform (RTDIP)	7/8/2025	7/14/2026
Battery Data Alliance	9/2/2025	9/8/2026
OperatorFabric	9/2/2025	9/8/2026
Power Stability Wide Area Monitoring Protection (p-SWAMP)		9/8/2026
RTC-Tools		9/8/2026
Grid Edge Interoperability & Security Alliance (GEISA)	10/14/2025	10/13/2026
AI SIG	11/11/2025	11/10/2026
Connected Data Specification - Customer Data Working Group (CDS WG3)	12/9/2025	12/8/2026
Connected Data Specification - Power Systems Data Working Group (CDS WG2)	12/9/2025	12/8/2026
Connected Data Specification - Registration Working Group (CDS WG1)	12/9/2025	12/8/2026

Annual Review Schedule - SIG

SIG Leaders - please share how recent reviews have went, and let us know if the schedule/alignment is still correct - contact email support@lfenergy.org

Source: https://tac.lfenergy.org/process/review_cycle.html

Name	Last Review Date	Next Review Date	SIG
Grid Vantage	9/26/2023	6/4/2025	Grid Simulation and Modeling
Hyphae	2/11/2025	2/25/2026	Edge Interoperability and Flexibility SIG
covXtreme	4/2/2025	4/1/2026	Grid Simulation and Modeling
Dynaωo	10/1/2025	4/1/2026	Grid Simulation and Modeling
ORES (Open Renewal Energy Systems)	4/8/2025	4/22/2026	Edge Interoperability and Flexibility SIG
FIDOPower	6/4/2025	6/3/2026	Grid Simulation and Modeling
OpenLEADR	6/10/2025	6/24/2026	Edge Interoperability and Flexibility SIG
Arras	10/1/2025	10/7/2026	Grid Simulation and Modeling
GridFM	11/19/2025	11/18/2026	AI
PowSyBL	12/3/2025	12/2/2026	Grid Simulation and Modeling
CitrineOS	12/17/2025	12/23/2026	Edge Interoperability and Flexibility SIG
			Edge Interoperability and

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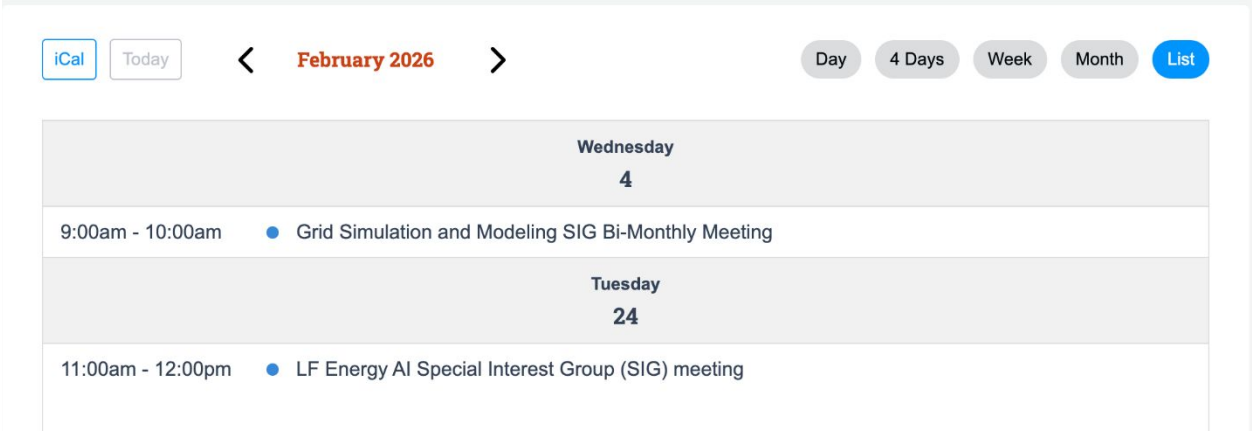
SIG Meeting Schedule for February

All SIG meetings can be found on the LF Energy calendar (calendar.lfenergy.org) as well as the SIG Calendar (sigcalendar.lfenergy.org)

Days/times listed are US Eastern Time

➔ **SIG Leaders - share any updates for your SIGs**



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Request for TAC Approval: Power Grid Model Transition to Early Adoption Stage #745

Power Grid Model in it's annual review last week has been recommended by the Grid Simulation and Modelling SIG to move to the Early Adoption Stage.

Meeting Recording:
https://zoom-lfx.platform.linuxfoundation.org/meeting/94555276128-1770213600000/summaries?password=986477bf-0084-470a-9501-9fba9f03f2ef
Annual Review Presentation:
https://github.com/user-attachments/files/25076034/Annual.Review.26.Power.Grid.Model.pptx

ACTION: TAC members please review the materials, and share concerns with moving forward with a vote to move Power Grid Model to Early Adoption Stage by EOD Friday, February 13, 2026. If no concerns are raised, vote will begin Monday, February 15, 2026.

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Project Pipeline

https://github.com/orgs/lf-energy/projects/2/views/5

- PowerCore will provide a vendor-agnostic, hardware-generic industrial informatics API for power-electronics systems, enabling portable, maintainable control firmware across diverse microcontroller SoCs. Submitted July 28, 2025; currently in LF Onboarding.
- Smart HEMS Benchmark will provide an open, standardized, and comprehensive benchmarking framework for residential Distributed Energy Resource (DER) systems, promoting widespread adoption of home and community energy management solutions through transparent performance evaluation and comparison, and advancing innovation and development in the sustainable energy industry. Submitted November 5, 2025 and currently in LF Onboarding.
- EDDIE (European Distributed Data Infrastructure for Energy) aims to develop and maintain open-source, decentralised software infrastructure that enables interoperable, secure, and consent-based access to energy data across systems, jurisdictions, and actors. Submitted January 9, 2026 and currently in LF Onboarding.
- Fledge is a leading open source industrial edge platform for industrial data pipelines, intelligent edge applications and ML. Currently an LF Edge Foundation project, in discussions to move into LF Energy and align with FledgePower
- OneNet Framework - awaiting approval of governance documents

No Longer in Onboarding:

- pyELQ: python Emission Localization and Quantification - Shell has decided to not contribute this project to LF Energy

Recently accepted by the TAC into Sandbox:

- CityLearn is an open source Farama Foundation Gymnasium environment for the implementation of advanced controllers for demand side building energy coordination and demand response in cities. It's focus is on residential buildings with the goal to shape the aggregated load profile using local and coordinated DERs.
- Project Origin is an open-source initiative to create a federated, decentralized infrastructure for issuing, transferring, and verifying granular, time-based energy certificates.

Scheduled for TAC Presentation:

- AINETUS, open source artifacts from AI4REALNET, aims to develop AI-based solutions addressing critical systems (electricity, railway, and air traffic management). Submitted December 10, 2025 and will be presented at the February 10, 2026 TAC Meeting.
- LF Energy RegistryOS (formerly Global Granular Certificate Registry)is a vendor-neutral, open-source, cloud-native ledger that issues, tracks, and retires Granular Certificates (GCs). Submitted June 11, 2025 and being scheduled for a TAC Presentation.

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2026 TAC Priorities (#673)

Posted discussed priorities in the GitHub Issue (#673)

DISCUSSION: Any concerns before we start executing?

Annual Review: Edge Interoperability and Flexibility SIG #458

5:15 pm - 5:35 pm

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Objectives

- Identify other potential existing groups and projects to bring in.
- Identify gaps in immediate relevant Energy Network Edge and Flexibility topics not covered by existing projects.
- Finding areas of collaboration between SIG members that could be improved.
- Be an exemplar to other SIGs on how to be an effective SIG.

Meeting monthly

Timeline

LF ENERGY
EV CHARGING

Kick-off EV Charging SIG

TAC Approval
Started with:
- EVerest
- CitrineOS

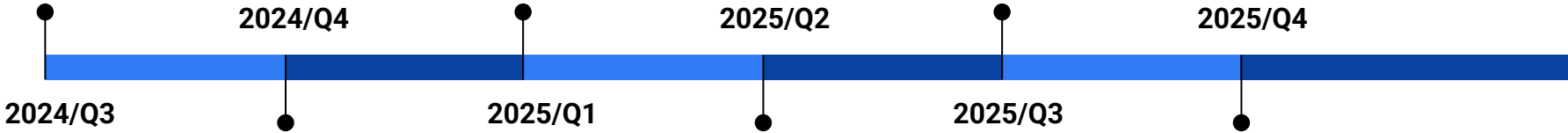
Face-to-face at LFE Summit

Review EVerest

Presentation: OpenSmartMonitor

Discussing scope extension

Face-to-face at LFE Summit
Presented scope extension



First project review

CitrineOS

Presentation: ANL - Opti-VGI

First ideas for scope extension
Adding OpenLEADR?

Scope extension and Rebranding

New projects, new name:
- OpenLEADR
- Hyphae
- FlexMEasures

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EDGE INTEROPERABILITY AND FLEXIBILITY

EV Charging SIG projects

Open source charger network software for rapid OCPP 2.0.1 and NEVI compliant EV charge management.

Open source firmware stack for standards-compliant, interoperable, and secure EV charging.

Presentations

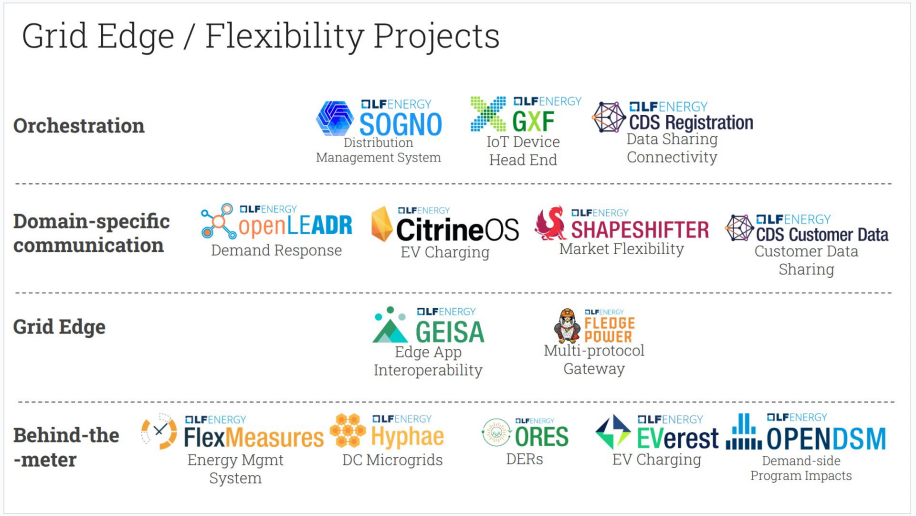
- ANL - Opti-VGI
- Devtank - OpenSmartMonitor
- ANL - CIPio-Link

Extending the EV Charging SIG

- TAC too busy
- A lot of projects not part of a SIG
- OpenLEADR interesting for both CitrineOS and EVerest

Renamed to:

LF ENERGY
EDGE INTEROPERABILITY AND FLEXIBILITY



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EDGE INTEROPERABILITY AND FLEXIBILITY

New Projects

LF ENERGY FlexMeasures

FlexMeasures is the intelligent and developer-friendly EMS to support real-time energy flexibility apps, rapidly and scalable.

LF ENERGY Hyphae

With energy resources and infrastructure increasingly challenged to meet the coming impacts of climate change and natural disasters, Hyphae aims to make the grid more resilient and flexible with microgrids.

LF ENERGY openLEADR

OpenLEADR - Friendly and compliant implementations of OpenADR 2.0b and OpenADR 3.0

LF ENERGY ORES

ORES (Open Renewable Energy Systems) is an open source initiative under LF Energy focused on accelerating the development and adoption of interoperable, modular, and intelligent energy systems.

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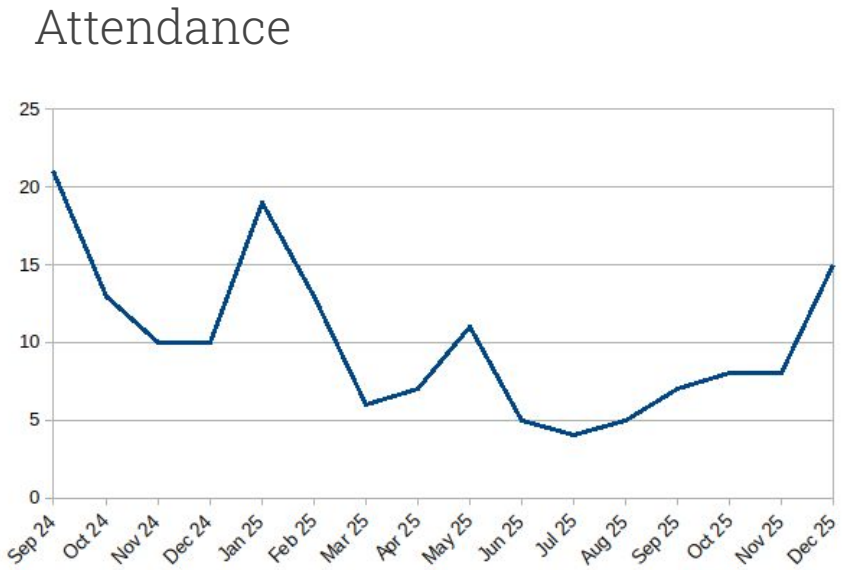
EDGE INTEROPERABILITY AND FLEXIBILITY

Meetings

- Meeting Monthly
- Typical Agenda:
  - Project updates
  - Presentations
  - Project reviews



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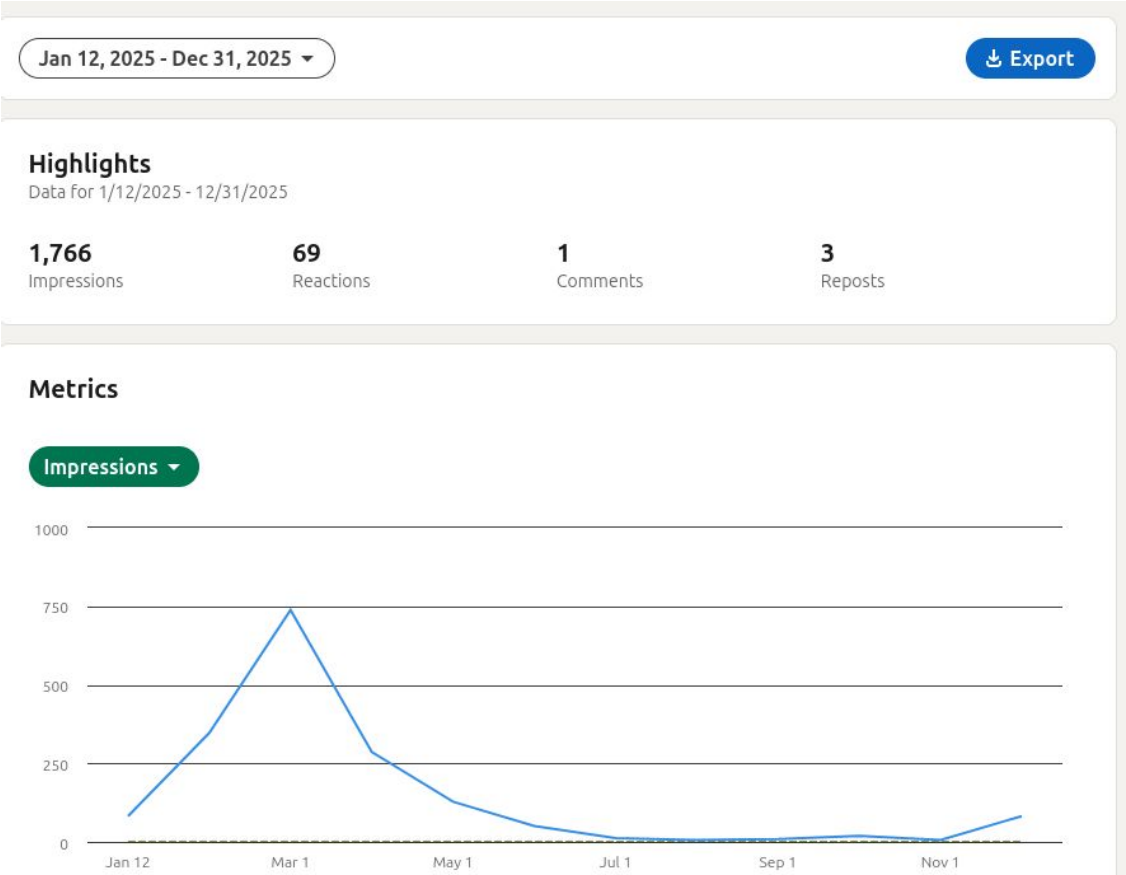
EDGE INTEROPERABILITY AND FLEXIBILITY

LinkedIn presence



LF ENERGY
EDGE INTEROPERABILITY AND FLEXIBILITY

2026

- Improve format of the meeting
- Increase attendance
- Joined demonstrators and/or whitepaper

Annual Review: Grid Simulation and Modeling SIG #459

5:35 pm - 5:55 pm

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New Project Proposal: AINETUS (AI for safety-critical NEtwork infrastrUctureS) #704

5:55 pm - 6:15 pm

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AINETUS – AI for safety-critical NEtwork infrastrUctureS

LF Energy Technical Advisory Council (TAC)

Ricardo J. Bessa, INESC TEC, Portugal, ricardo.j.bessa@inesctec.pt

AI4REALNET has received funding from European Union's Horizon Europe Research and Innovation programme under the Grant Agreement No 101119527, and from the Swiss State Secretariat for Education, Research and Innovation.

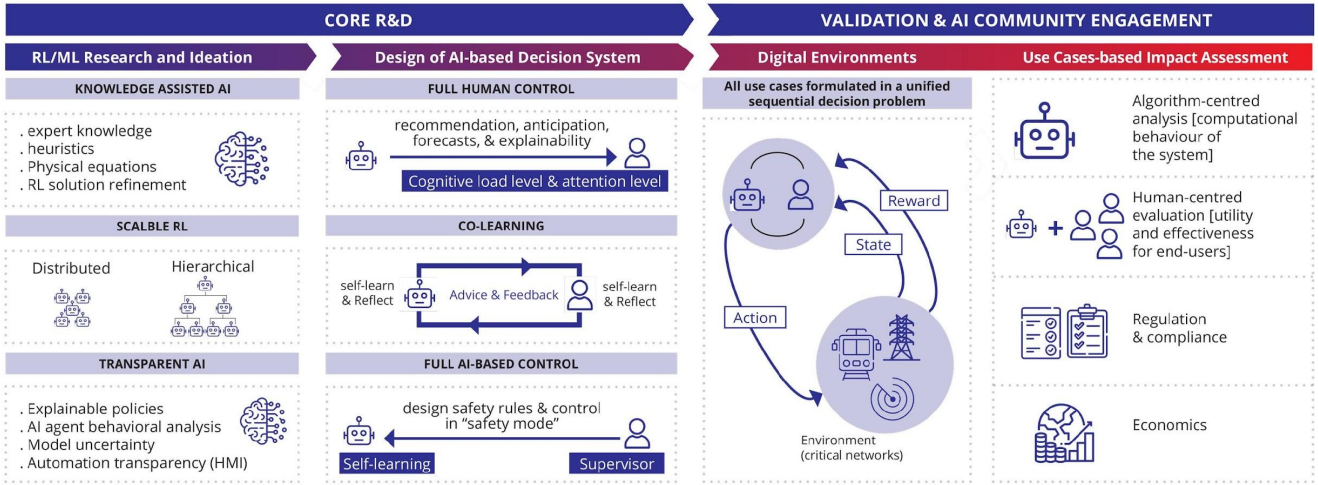
Why AI assistants for critical infrastructures?

- Critical infrastructures (power grids, rail, air traffic, water) are becoming more complex, demanding faster and more sophisticated decisions
- Humans remain accountable, but **AI is increasingly essential for decision support, turning large volumes of data into rapid, context-aware recommendations**
- Traditional control room tools enable robust physics-based decisions, but can be too slow for real-time actions (e.g., topology optimization) and struggle with partial observability and risk modelling
- Control rooms are a fragmented work environment with multi-screen applications, and increasing human cognitive load

AI4REALNET in a nutshell

GOALS

- Develop the next generation of decision-making methods powered by supervised and reinforcement learning, which aim at trustworthiness in AI-assisted human control, human-AI co-learning, and autonomous AI
- Boost the development and validation of novel AI algorithms via 3 existing open-source AI-friendly digital environments



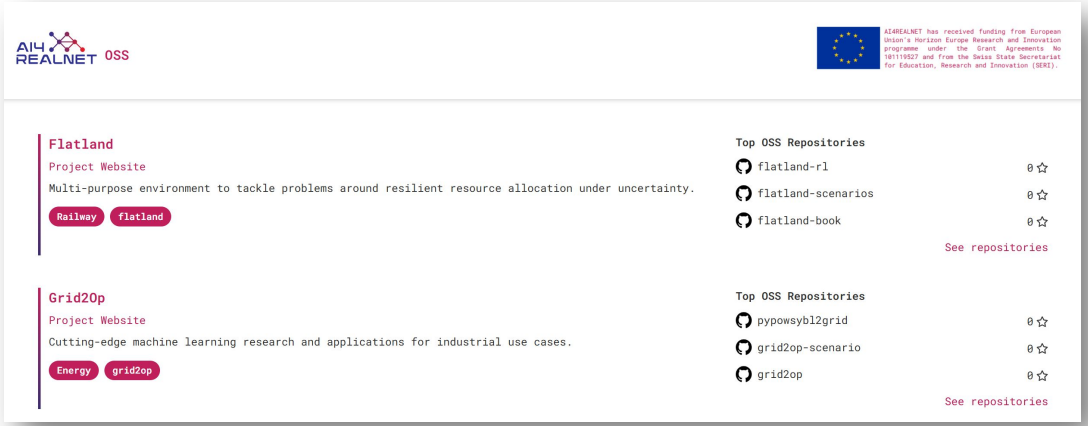
Project information and partners

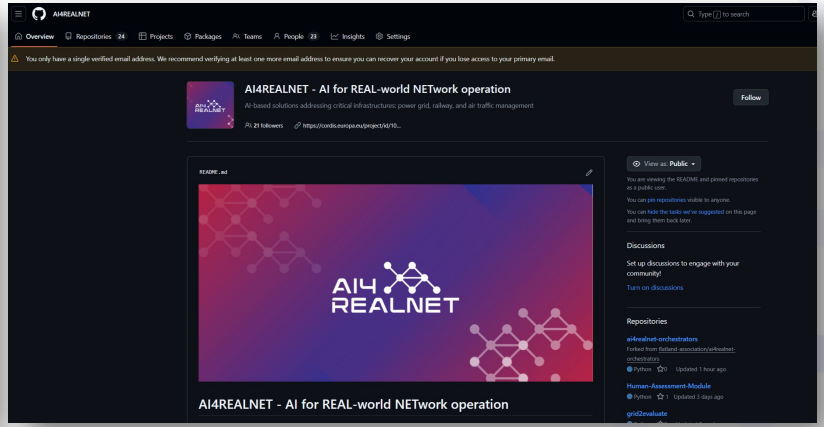
AI4REALNET – AI for REAL-world NETwork operation

- Oct/2023 – Mar/2027
- **Type of action:** Research and Innovation Action (RIA)
- **Budget:** € 3 999 976,25
- **Project coordination:** Ricardo Bessa (INESC TEC)
- **Project officer:** Stefano Foglietta (HaDEA)

Open-source software (GitHub)

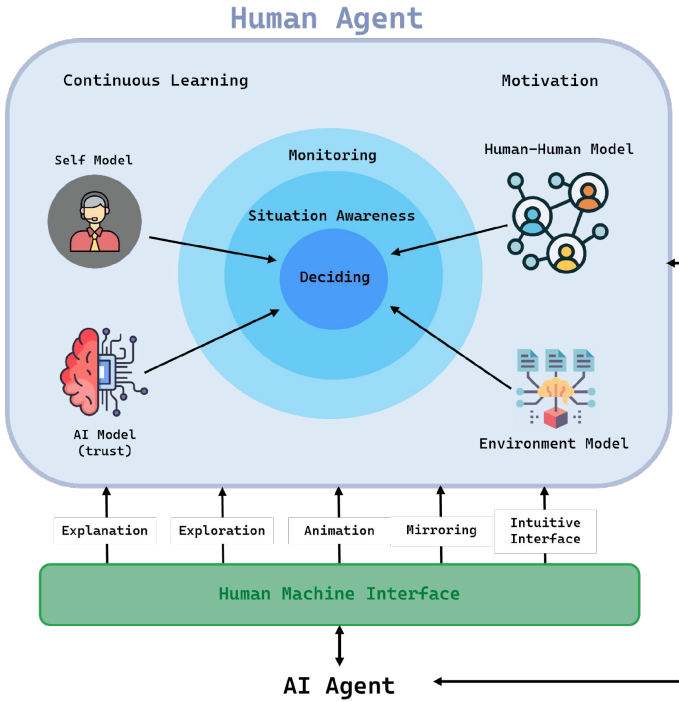
All results will be released in open-source (GitHub page already with several OSS results)

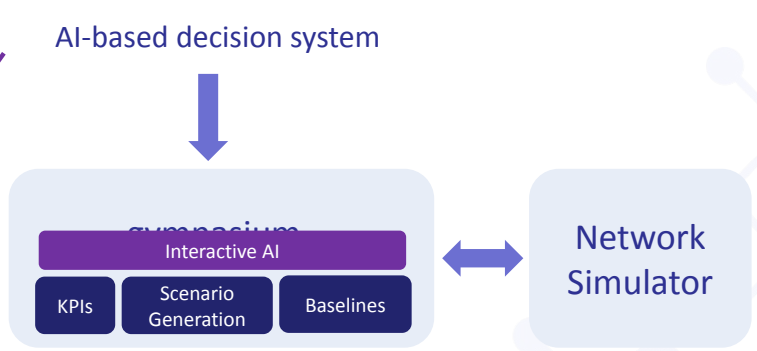




GitHub

Conceptual framework for human-AI interaction

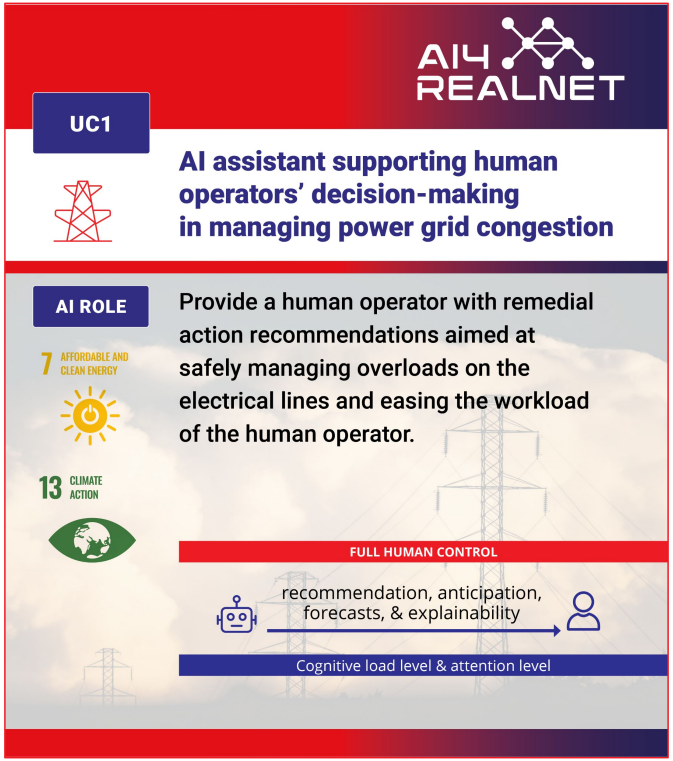




Contributing to… LFENERGY grid2op

Framework

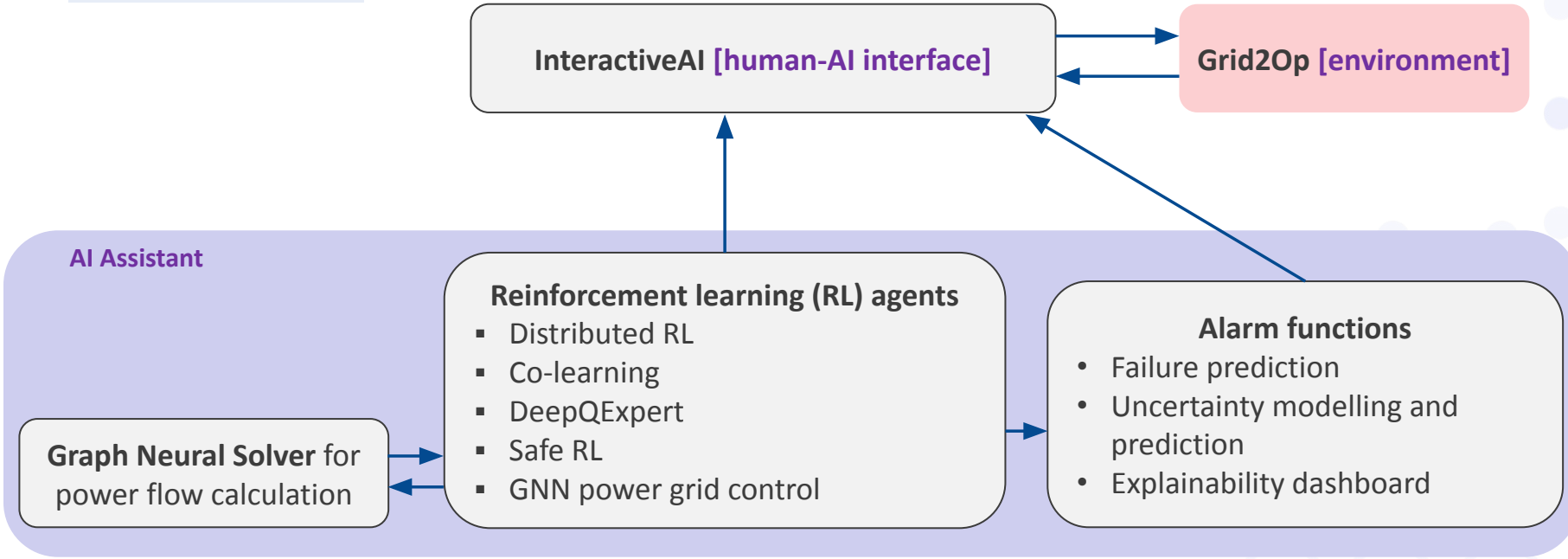
Use cases


AI4 REALNET
UC1
AI assistant supporting human operators' decision-making in managing power grid congestion
AI ROLE
Provide a human operator with remedial action recommendations aimed at safely managing overloads on the electrical lines and easing the workload of the human operator.
7 AFFORDABLE AND CLEAN ENERGY
13 CLIMATE ACTION
FULL HUMAN CONTROL
recommendation, anticipation, forecasts, & explainability
Cognitive load level & attention level


AI4 REALNET
UC2
Sim2Real, transfer AI-assistant from simulation to real-world operation
AI ROLE
Provide a human operator with remedial action recommendations, considering a transfer from training (digital) to real-world environments.
7 AFFORDABLE AND CLEAN ENERGY
13 CLIMATE ACTION
FULL HUMAN CONTROL
recommendation, anticipation, forecasts, & explainability
Cognitive load level & attention level

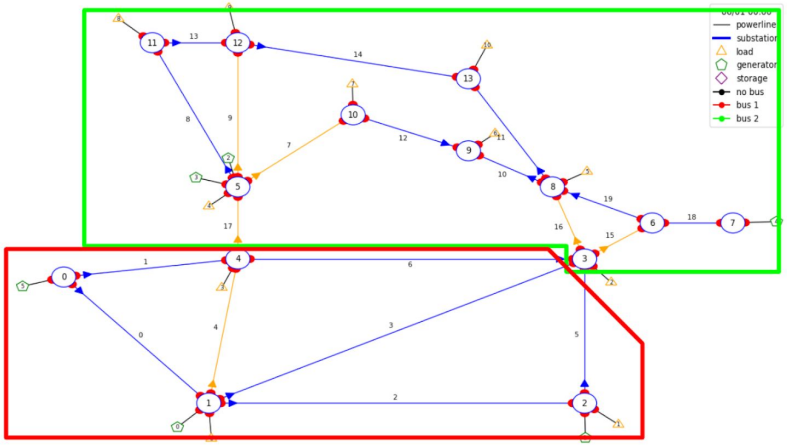
AINETUS platform

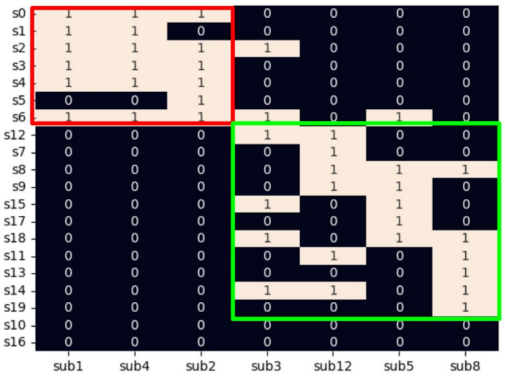
OSS license:
MPL-2.0



OSS highlight 1: Distributed reinforcement learning

GOAL: Divide into subproblems that can lead to distinct learning processes with less computational and data requirements



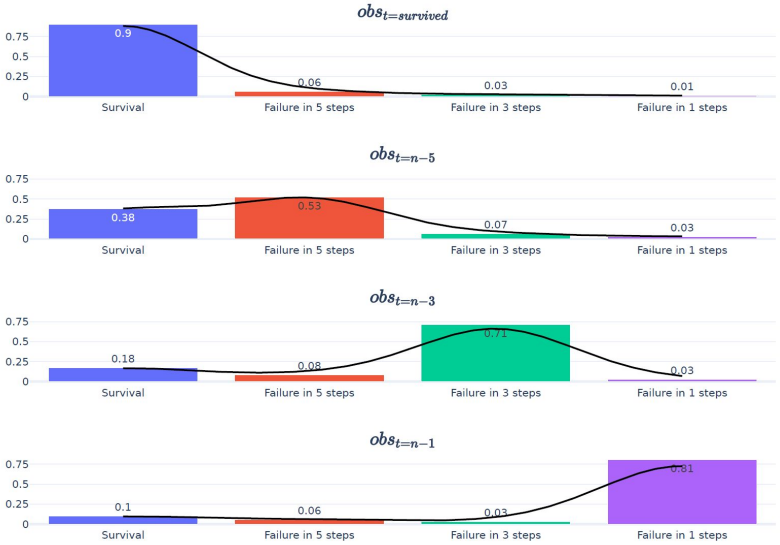


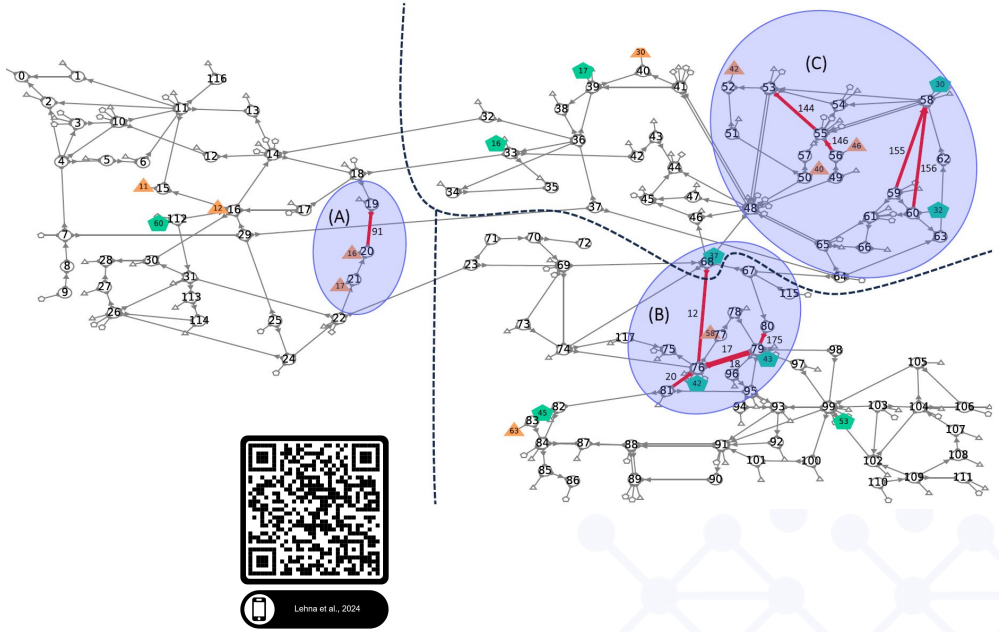
Highly correlated state-action pairs are grouped together to create simpler

Losapio et al, 2024

OSS highlight 2: Predicting AI agent failure

GOAL: prediction approach to detect AI agent failures beforehand



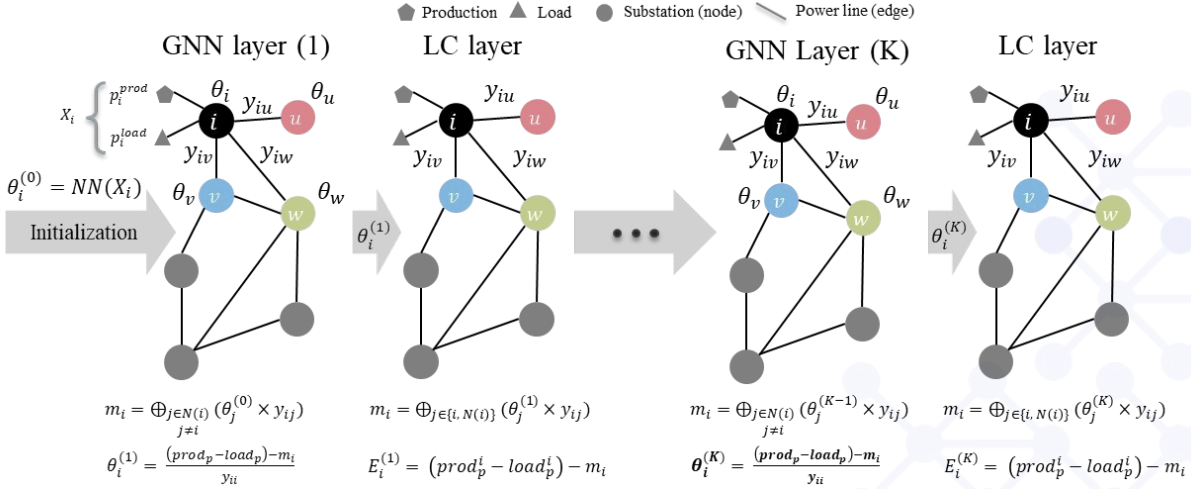


OSS highlight 3: Graph neural solver

GOAL: ML assisted (informed) by physics knowledge for compliance with physical constraints imposed in a power grid that enables the prediction of active powers at power lines from the injections in the substations

$$p_i^{prod} - p_i^{load} = (\theta_i \times y_{ii}) + \underbrace{(\theta_u \times y_{iu})}_{\text{message from node } u} + \underbrace{(\theta_v \times y_{iv})}_{\text{message from node } v} + \underbrace{(\theta_w \times y_{iw})}_{\text{message from node } w}$$

Compliance with physics laws by integrating the local conservation as the optimization criteria (non-supervised learning)

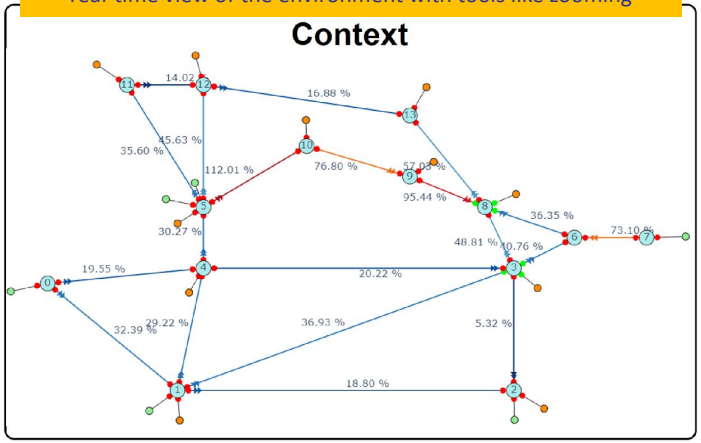


OSS highlight 4: Interactive AI

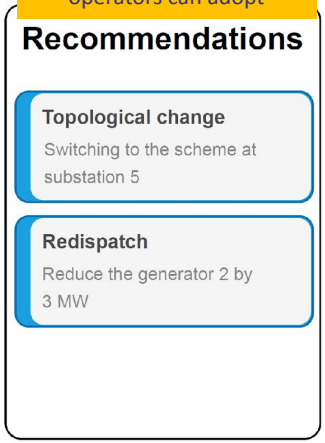
GOAL:
Experimentation of bi-directional virtual assistants for joint decision-making

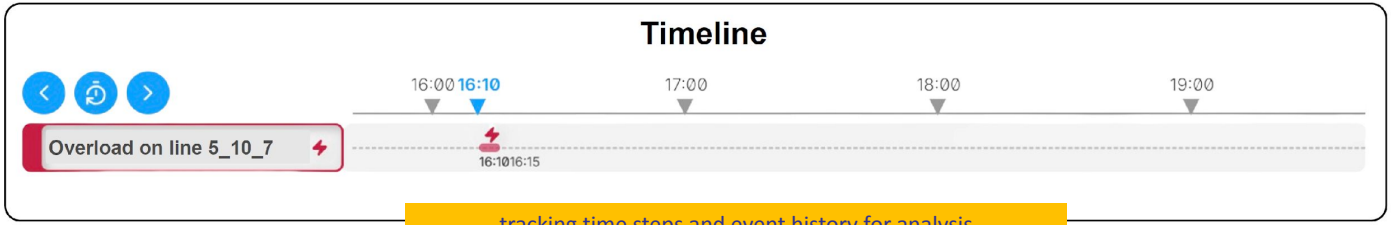
notifications about risks and events

real-time view of the environment with tools like zooming



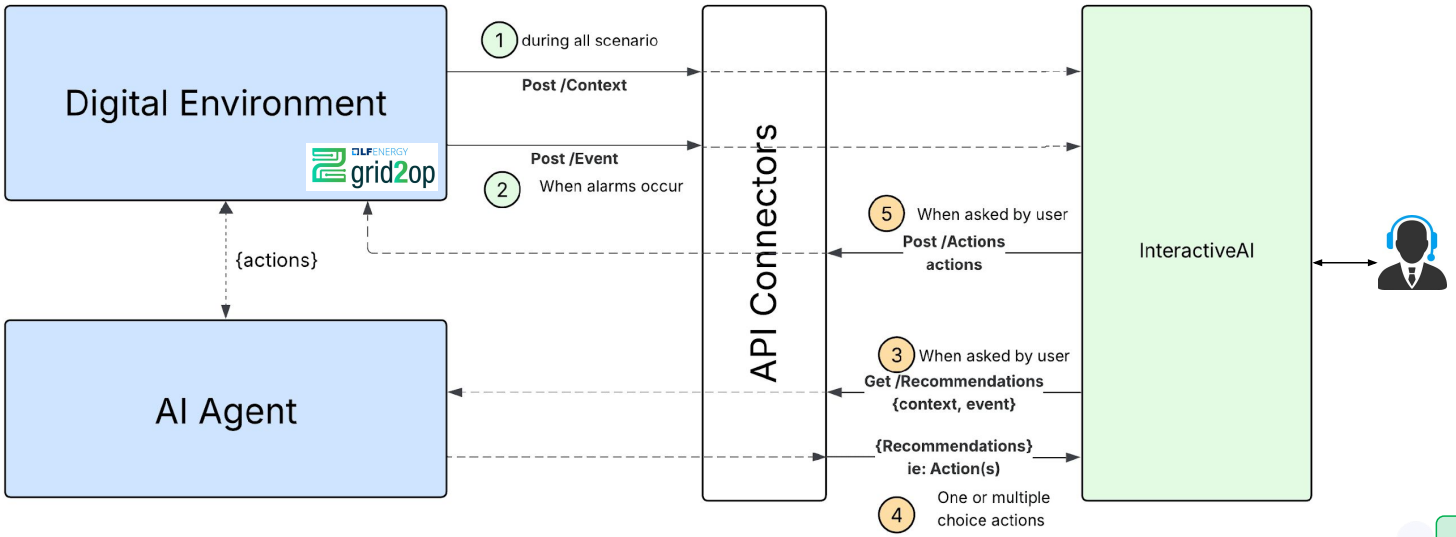
AI-based suggestions that operators can adopt





tracking time steps and event history for analysis

AINETUS interactions

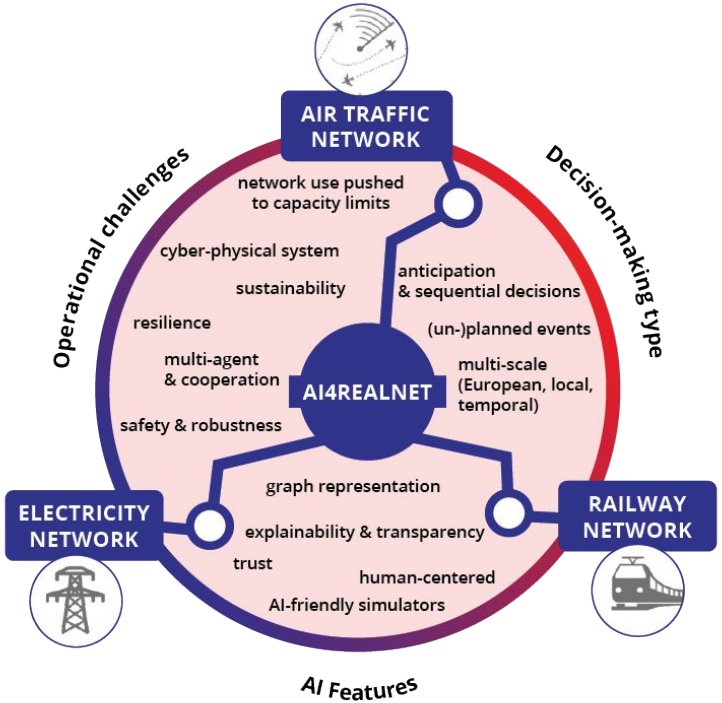


Release#1

Release#2

Short demo

Cross-sector dimension



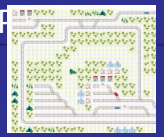
Cross-sector example: railway

FLATLAND

Flatland input instance. Graph weights set to **1** at the beginning

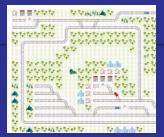
Run PP w/ input graph weights

Proposed solution (P



Differentiable loss calculation between the 2 solutions

Expert (optimal)



Back-propagate loss to update the graph **edge weights**, making PP paths more similar to optimal.

Set **updated weights** for PP

Use **Conflict Based Search** (CBS) to generate optimal paths

outside AINETUS (but relevant for future cross-sector collaborations)

Why LF Energy?

- Opportunity for collaborative improvement of an end-to-end stack for AI assistants (algorithms ⟶ HMI)
- Synergies with other LF Energy projects: Grid2Op and OperatorFabric
- Encourage co-creation with TSOs, DSOs, and vendors
- Increase awareness for the development and human-in-the-loop testing of AI solutions aligned with the EU AI Act
- Facilitating continuous improvement of RL agents & HMI (towards agentic AI)
- Open-source to accelerate adoption and impact
- Linking to other similar efforts beyond Europe & exploring potential for cross-sector collaboration

Community

- INESC TEC (RTO)
- Politecnico di Milano (University)
- Fraunhofer IEE (RTO)
- IRT SystemX (RTO)
- University of Amsterdam (University)
- RTE (TSO)
- TenneT (TSO)
- enliteAI (SME)

Code quality

- All code on Github: https://github.com/AI4REALNET
- Documentation is being improved
- Code is being tested in the AI4REALNET project &integration of the different components is planned for April 2026 (VM at RTE)

Releases

- The components have been developed and tested in the project
- New releases are planned for
  - March 2026
  - September 2026
  - March 2027
- The partners have an interest in keeping the effort alive and expanding it, and potentially exploring it as a development and testing stack for human-centric AI assistants
- Collaboration with a testing and experimentation facility (AI-EFFECT) and possibility of additional EU-funding

AI4REALNET

AI4REALNET has received funding from European Union's Horizon Europe Research and Innovation programme under the Grant Agreement No 101119527 and from the Swiss State Secretariat for Education, Research and Innovation

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

Marketing/PR/Events Updates

6:15 pm - 6:25 pm

LF ENERGY

Marketing and PR Updates

- Webinars
  - EVerest webinar took place 14 January
  - No current webinars scheduled - please reach out if projects you support would like to do one
- News
  - LF Energy Advances EV Charging Security with Independent EVerest Audit
  - LF Energy Battery Data Alliance Announces the Battery Data Format (BDF): A New Open Standard for Battery Data Interoperability
- Content
  - Series of LFE Summit Europe session recaps posting regularly at https://lfenergy.org/newsroom/blog/
  - The LF Energy Story will be published this month
- Messaging/website
  - Refresh of LF Energy general messaging has been completed, with revisions made to the website homepage and Why LF Energy page
  - Additional updates to come to other pages and overview deck
  - New messaging also reflected in description of LF Energy Summit
- Event tracker - please review and add any additional opportunities
- Use this form to submit any comms/marketing support requests
- See media coverage spreadsheet or website for recent articles

LF ENERGY

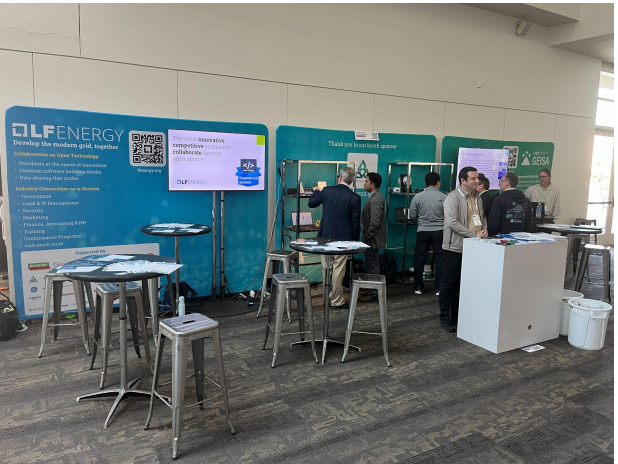
FOSDEM

- FOSDEM took place this weekend in Brussels
- We had 15+ attendees join the LF Energy community dinner on Friday
- Energy Devroom was fill to capacity for almost all sessions, often with long lines down the hallway
- Videos of sessions will be available in the coming weeks

LF ENERGY

Distributech

- The biggest distribution event in North America, which is the perfect opportunity to meet new utility and vendor contacts
- LF Energy booth featured multiple members, demos, giveaways, and more
- Good location, great conversations with a wide variety of stakeholders



LF Energy Summit Europe 2026

- Venue is confirmed at Smartvillage Berlin, 15-16 September
  - Space will be made available on 14 September for pre-event workshops and meetups
  - Both 50hertz and E.ON have offered to host pre-event activities at their offices
- Save the date webpage and sponsor prospectus are live
- Registration expected to go live ~Feb 18
- CFP to be open March 23-May 25

LF ENERGY

Closing and Next Meeting

6:25 pm - 6:30 pm

LF ENERGY

Next TAC Meeting

The following meeting of the LF Energy TAC is scheduled for March 10, 2026 at 4:00 pm Central European Time. Agenda tentatively to include:

- General Updates
- New Project Proposal: LF Energy RegistryOS #556
- Annual Review: SEAPATH #73
- Annual Review: OpenSynth #68
- 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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