

ZIV TwinGrid

A real-time automation platform

 NH Fiera Milan | October 22nd | 4:30 PM Welcome Coffee | 4:45 PM Demonstration & Debate | 6:00 PM Cocktail

[RSVP Now Here](#)

What are we going to present / demonstrate?



We invite you to a special presentation and demonstration of ZIV's TwinGrid Platform, showcasing advanced network automation for HV, MV, and LV levels.

This interactive session will feature real-time simulations, providing valuable insights into how ZIV-TwinGrid improves grid stability and efficiency.

Learning Objectives

- Interconnection of DERs
- ICT infrastructure planning
- Data requirements / Data Quality
- Market design
- Managing network constraints
- IT / OT integration
- Team and staff preparation and upskilling for next stages
- Interaction with 3rd party market participants
- (Aggregators, DSO, DER operators, etc)

Use cases

System architecture

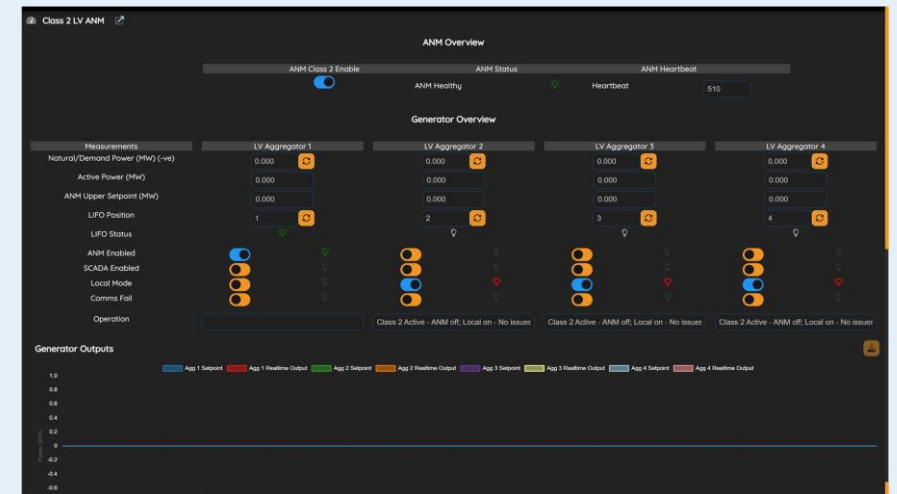
Sandbox

We will be showcasing ZIV TwinGrids multiple applications through various use cases that demonstrate how to:

- **Optimize the operation of HV/MV & LV networks**
ensuring improved efficiency and reliability.
- **Automate the management of Distributed Energy Resources (DERs),**
such as generation and demand, for seamless control. Protect networks with advanced constraint management to maintain stability under fluctuating conditions.
- **Provide forecasting and prediction services,**
enabling better decision-making and proactive grid management.
- **Enable micro-grid and islanding automation,**
ensuring continuity in energy supply during disruptions.
- **Integrate energy markets,**
facilitating smoother transactions and participation in the energy ecosystem.
- **Aggregate services,**
combining resources to create more efficient, scalable solutions.
- **Implement LV automation**
to address the growing demands from electric vehicles (EVs), heat pumps, and other new technologies.



Applications



E.g. LV Network ANM Overview Dashboard

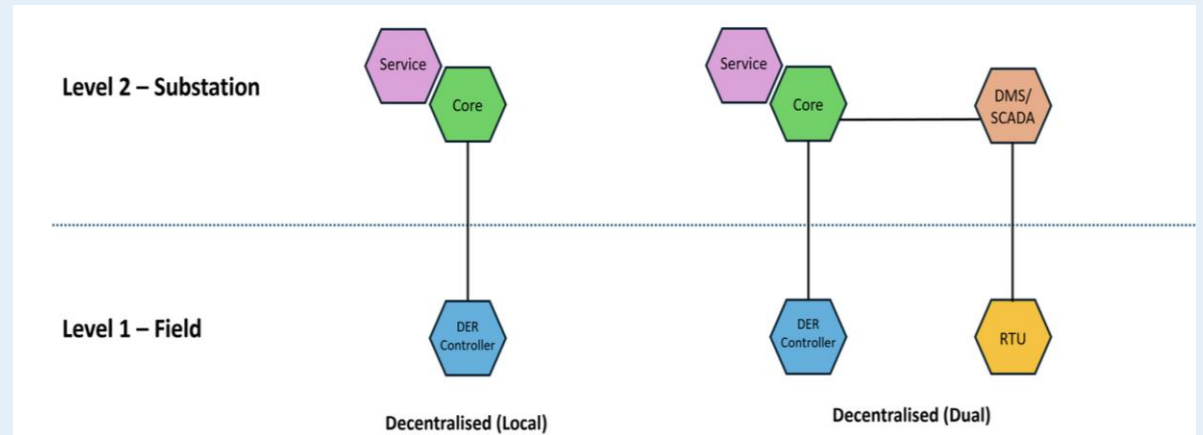
Followed by a brief overview of the system architecture

Full solution HW + SW



It is a full solution platform offering robust field hardware, substation and enterprise level software and complete design and integration services that covers Level 1,2,3 & 4

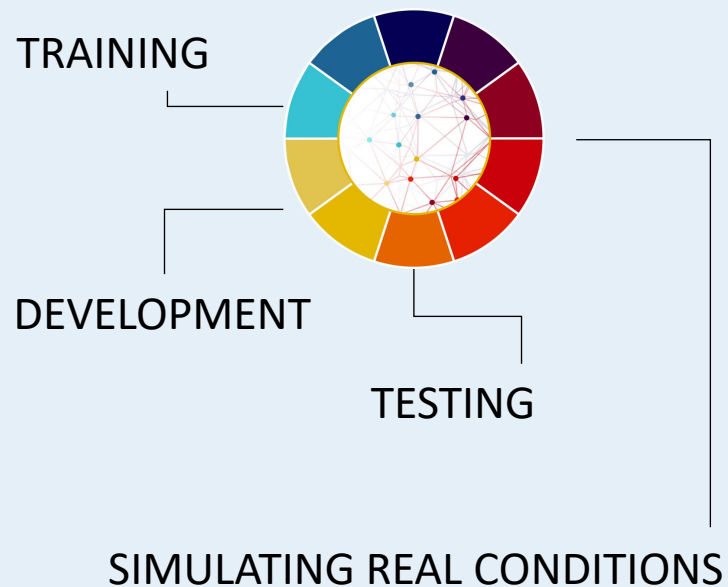
Centralised / Decentralised / Hybrid



A DECENTRALISED architecture is useful for small projects where the automation platform is deployed at the level 2 substation controller.

A CENTRALISED architecture can handle large quantities of data and multiple complex applications. It is deployed centrally at the level 3 data centre in server-based hardware, and optionally at level 2.

Finally, we will experience the Power of a **ZIV** **TwinGrid Sandbox**



Learning and testing capabilities

The Sandbox is a collaboration environment designed to offer comprehensive training, development, and testing of the ZIV-TwinGrid platform's capabilities.

With real data

It provides a secure, cloud-hosted space that simulates real-world conditions of production-level DERMS (Distributed Energy Resource Management System) and ANM (Active Network Management) systems. By participating in the Sandbox, you gain access to a dynamic environment where you can conduct in-depth evaluations, training sessions, and functional assessments of the platform to enable you to deploy real-world ANM systems more rapidly.



Serves as a duplicate of a production-class DERMS/ANM system

The sandbox includes various modules demonstrating different functionalities within the ANM/DERMS systems. It enables:

- Comprehensive training on ANM/DERMS principles.
- Data quality assessments and ICT infrastructure evaluations.
- Simulation of network performance to test new features and curtailment strategies.
- Design and evaluation of flexibility and energy market applications

ZIV TwinGrid
Network Simulator



Digital Twin
(simulates network behavior
simulation & controllable
network equipment)



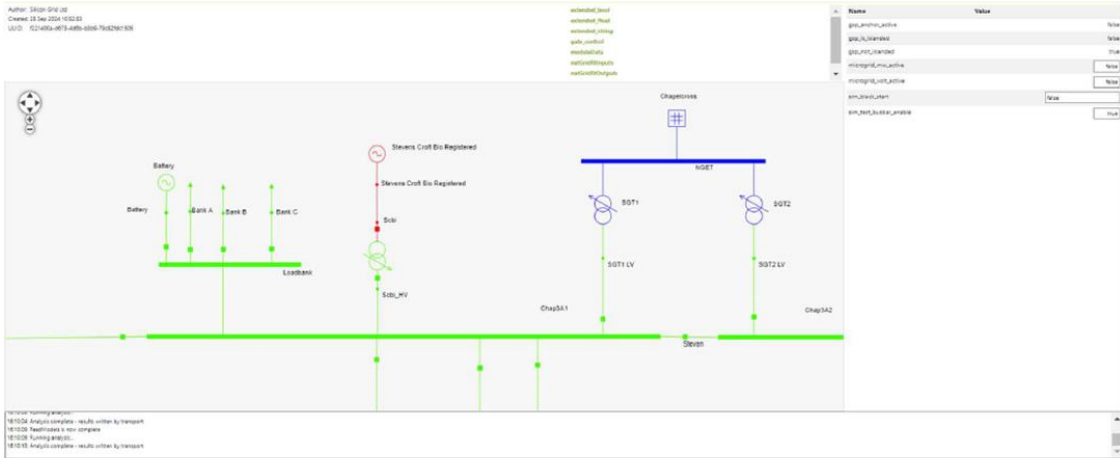
Dynamic Feedback
(on network operations in
response to control actions
and operational changes)



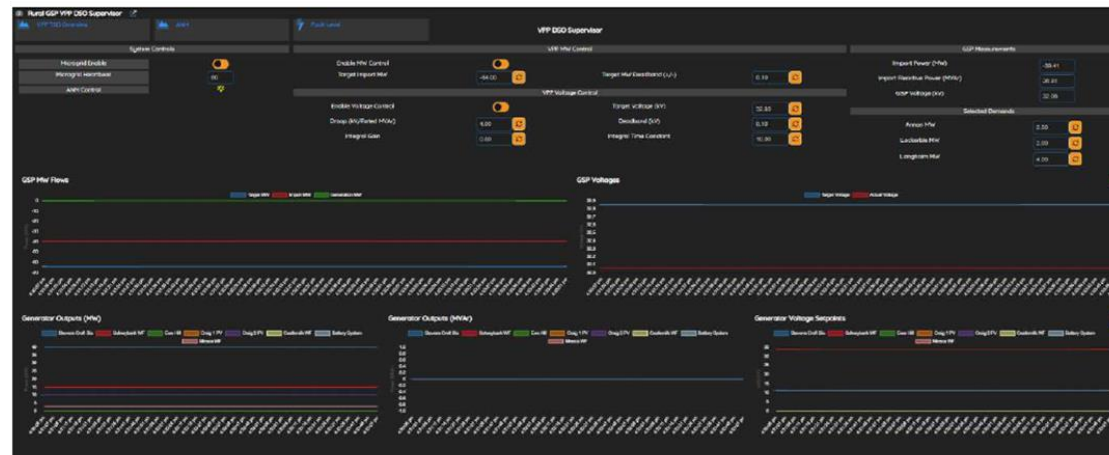
Control Scenarios
(creation and testing of
different control scenarios
to assess algorithm
performance)



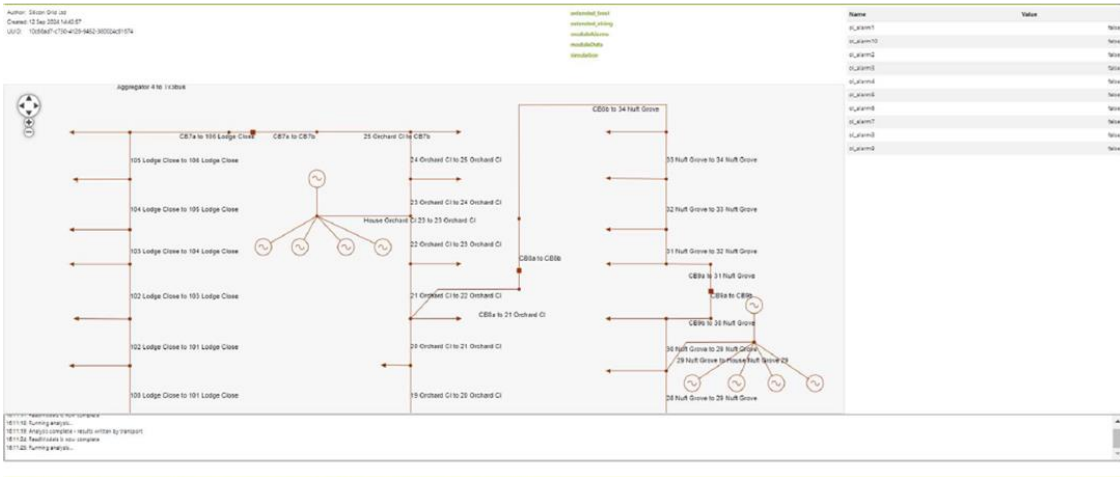
HV Network Simulation



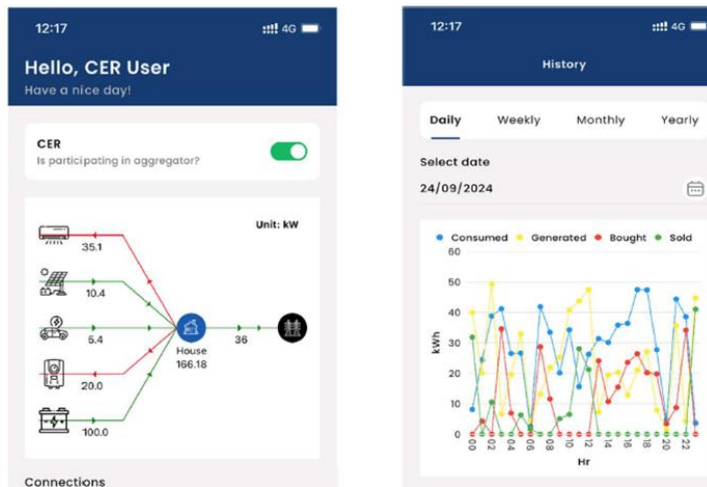
DSO Control Dashboard



LV Network Simulation



Mobile App





MV Sandbox

- Enhanced Network Monitoring
- Dynamic Curtailment
- Virtual Power Plant (VPP)
- LV Network Aggregation
- Future Market and Predictive Management



LV Sandbox

- Thermal Constraint Management
- Voltage Management
- FLISR
- Prosumer and Flexible Energy Management
- Real Time Control
- Flexibility Markets



We hope to see you there!



Seats are limited.

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When: October 22nd

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- #1 What is the difference between ZIV TwinGrid and SCADA?
- #2 What are the different levels - L1, L2, L3 and L4?
- #3 What are the main differences between decentralised and centralised systems? What advantages do each one of them have?
- #4 What is a microservice?
- #5 What impact do heat pumps and LV loads have on LV ANM?
- #6 What are aggregate services?
- #7 Where is the network model obtained from? How do we ensure that the data is mapped correctly?
- #8 What is a Sandbox 1 for?
- #9 What is a Sandbox 2 for?