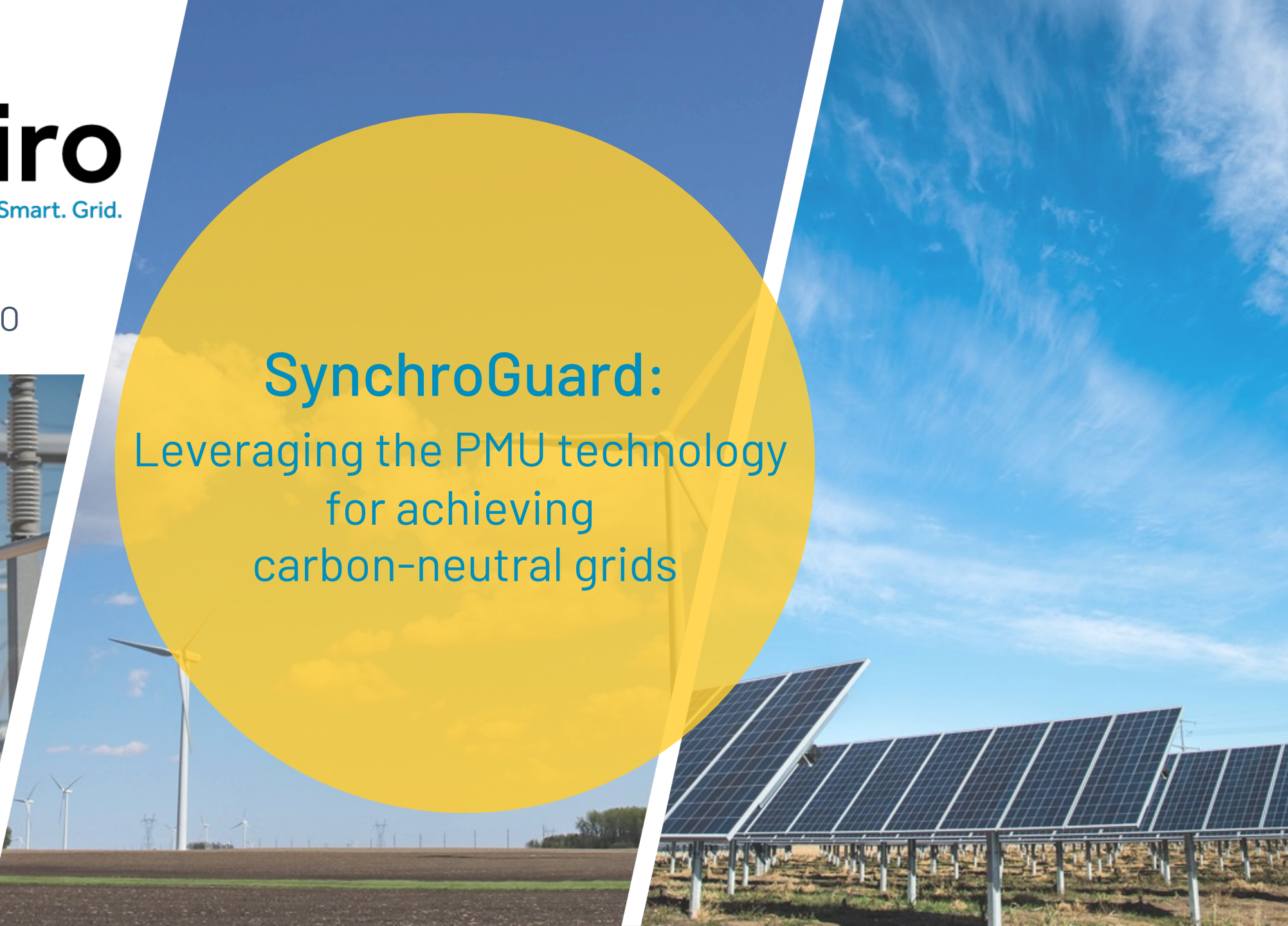




Dr. Paolo Romano
Co-founder and CEO

SynchroGuard:
Leveraging the PMU technology
for achieving
carbon-neutral grids



About us



- **EPFL spin-off**, based in Lausanne (CH), founded in 2017
- **Multiple awards** winner: Free Electrons, EIC Seal of Excellence, Solar Impulse label, SET100 award, Future Grid track @Energy Tech Summit
- **Global footprint** with **12** highly satisfied **customers** in EU, APAC and North America with repeating orders
- Over **180** SynchroSense devices installed in the field monitoring 24/7 >**1600** grid assets, >**200** km of MV lines
- Recently closed a **CHF 6.4 million investment round** led by a Strategic investor in the smart grid space



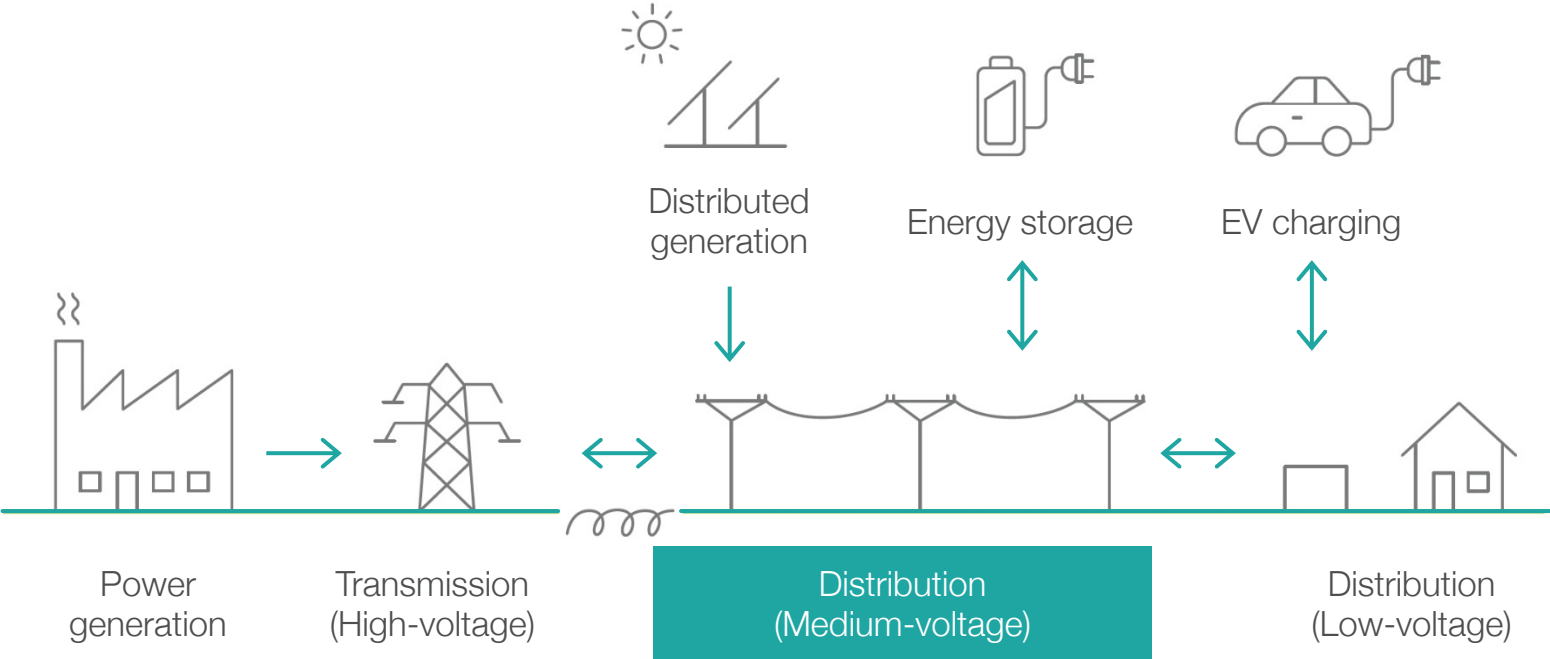
Customers




Partners




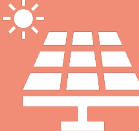
The digital journey towards a clean and sustainable energy future has its challenges



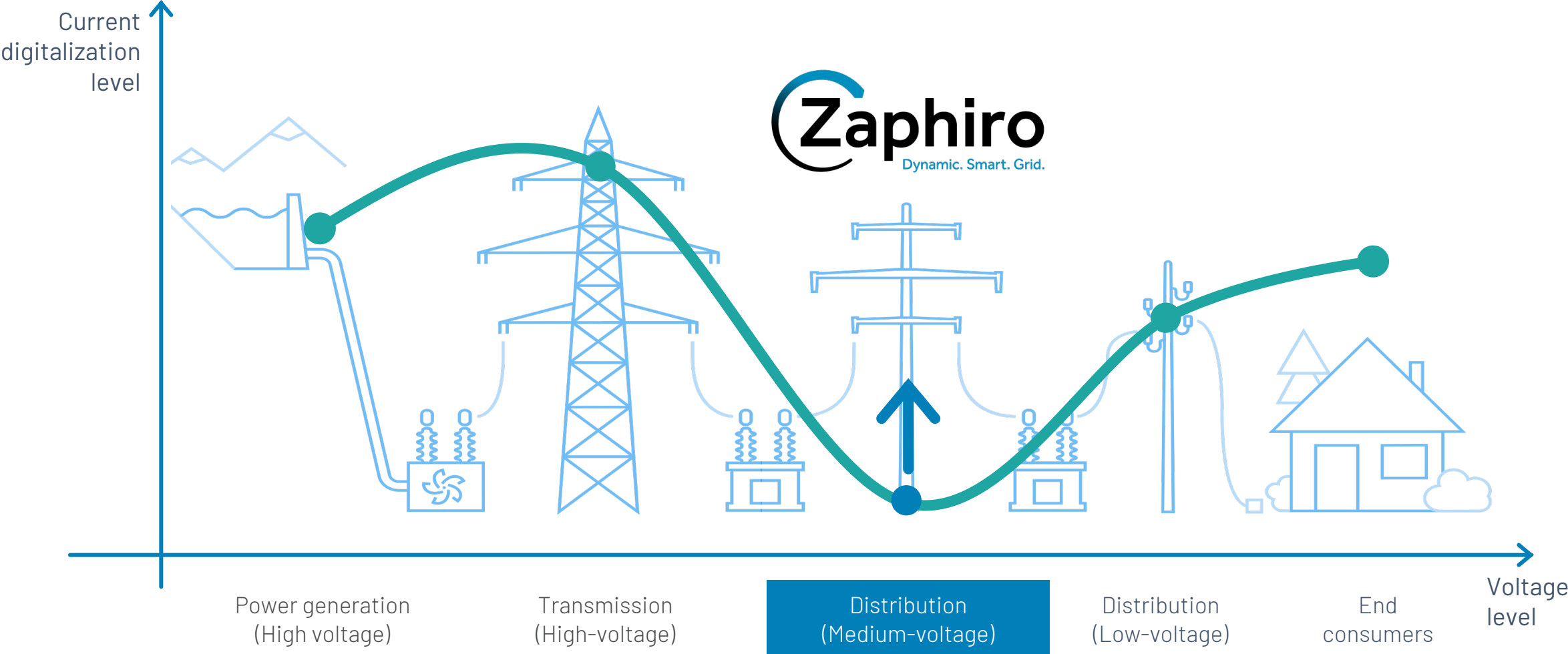
Today's issues and challenges:

 1. Limited visibility on grid assets

 2. Inefficient black-out management

 3. EVs/renewables unpredictability

The medium voltage market, has the highest upside potential in terms of digitalisation investment needs



Our management team is a rare mix of technical know-how and relevant industry expertise



Dr. Paolo Romano
CEO and Founder

Sales, Organization, Hiring
EPFL PhD, electronic engineer



Dr. Marco Pignati
CTO and Founder

R&D, Technical support
EPFL PhD, electrical engineer



Dr. Lorenzo Zanni
COO and Founder

Product, Operation, Finance
EPFL PhD, electrical engineer



Igor Dremelj
Chief Strategy Officer

Sales, Strategy, Go to Market
Vice President @Landys+Gyr



François Marti
Chairman & Indep. Director

Fundraising, Partnerships
COO @SGS, CEO @FCA Services



15 employees in total

Experienced product
development & sales team

An experienced team of advisors



Prof. Mario Paolone

Academic advisor
Full professor, smart-grid
expert, visionary scientist



Harry D. Sykes

Investor's observer
Self-made UHNW, technology
sector serial entrepreneur



Thierry Pollet

Industrial advisor
Digital lead in grid integration,
Innovation & R&D manager



Arnoud Bifrare

Power utility expert
Head of Smart Grids at
Romande Energie



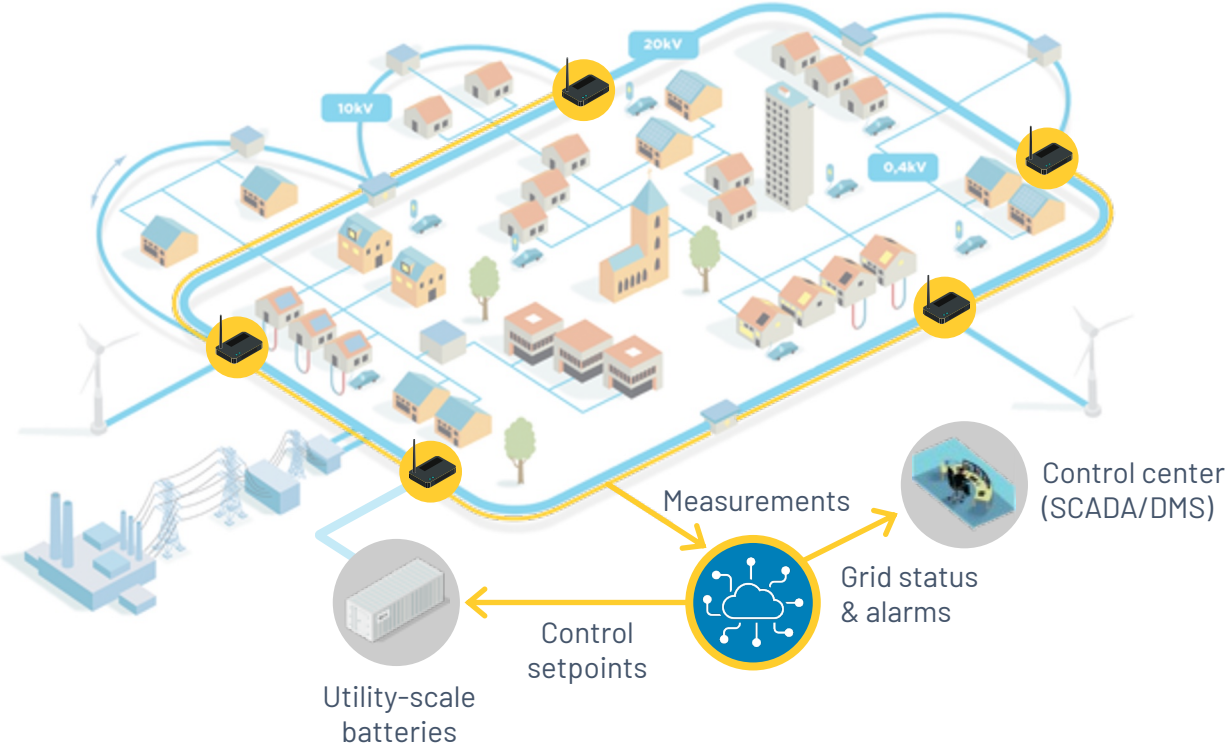
Zaphiro developed **SynchroGuard**, the leading grid monitoring & automation system based on **D-PMUs**

Hardware



Patented D-PMU (Distribution-Phasor Measurement Unit) **device**:

- Time-synchronized + high speed measurements
- Ideal for substation retrofitting



Software



- Modular and scalable software** platform:
- Full interoperability with 3rd party devices
 - Empowered by patented algorithm



- Real-time grid monitoring**
- Full grid visibility with as little as 10% of measurement coverage



- Accurate fault location**
- Automated fault location to reduce the duration or even prevent blackouts

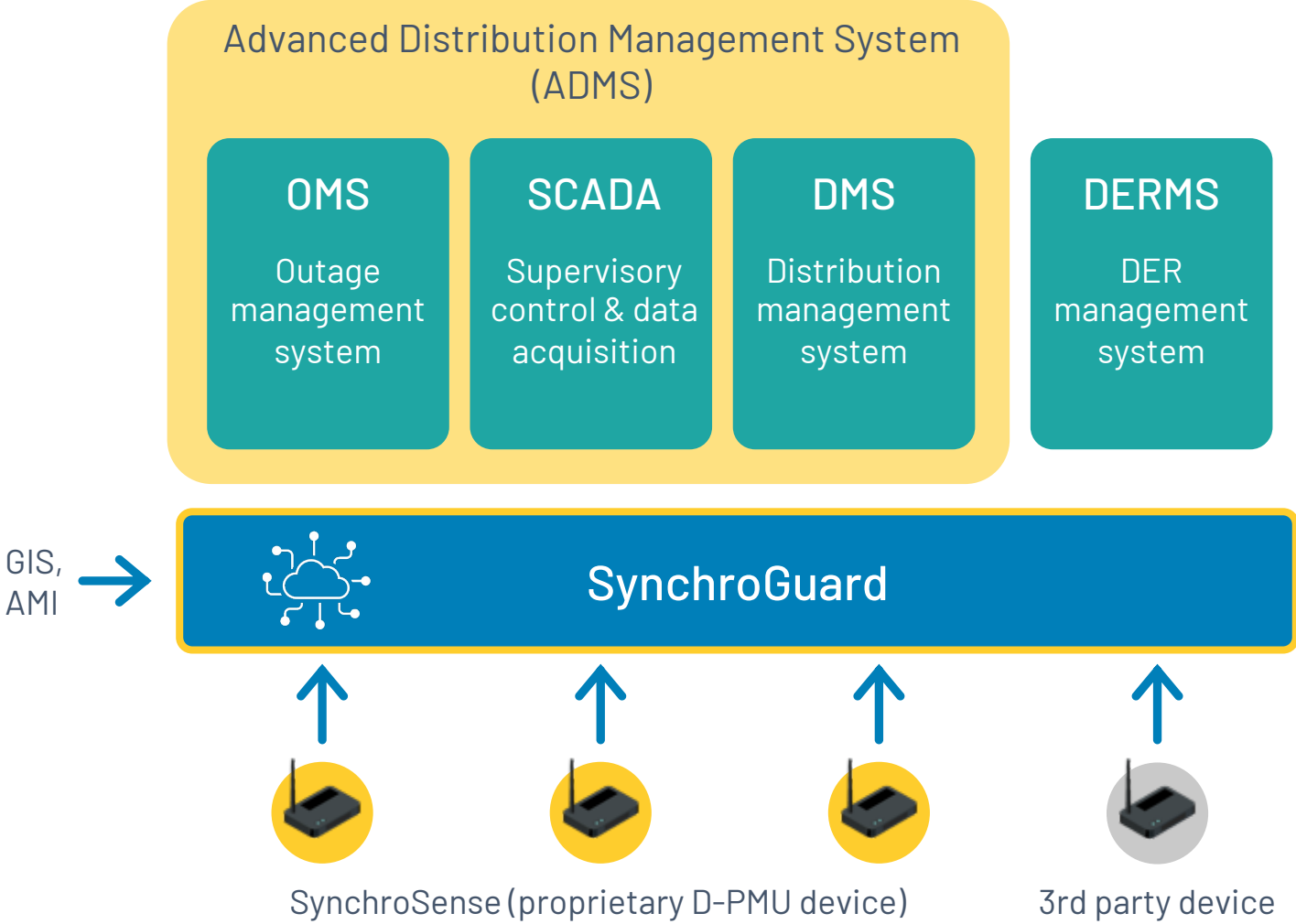


- DER integration and control**
- Automatic control of utility-scale batteries to always guarantee grid stability



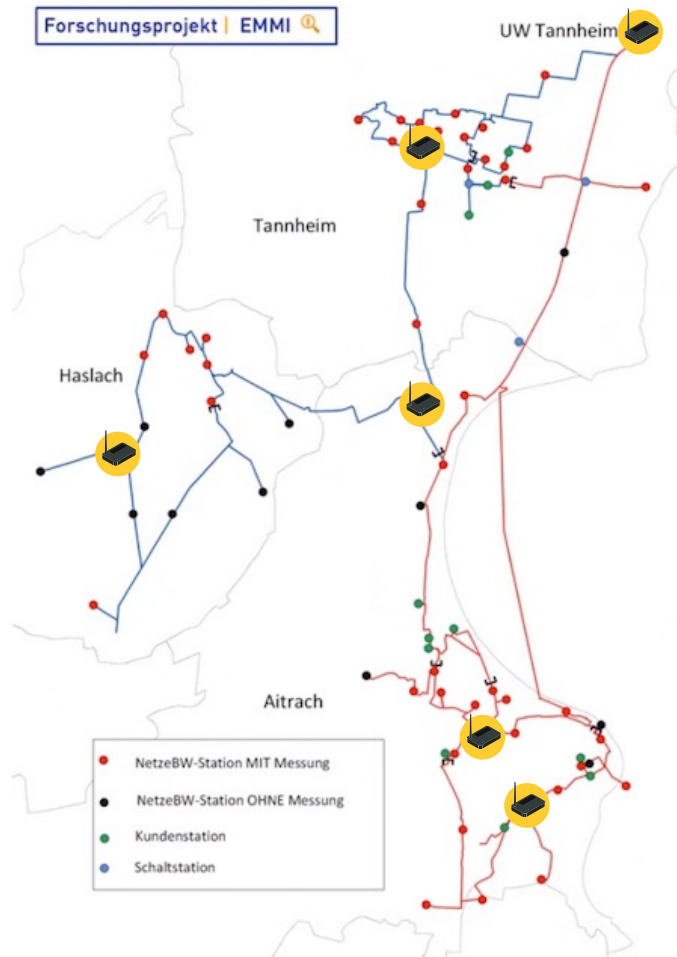
- Offline grid analytics**
- Advanced grid analytics for optimal grid planning and predictive maintenance

SynchroGuard, the **single source of truth** for advanced **grid management applications**



- SynchroGuard is a **“grid-intelligent” platform**, a distributed software middleware integrating **advanced grid applications** that expand the capabilities of existing SCADA/DMS system
- SynchroGuard continuously **collects, processes and stores real-time measurements** from our proprietary or 3rd party devices to extract value added data
- SynchroGuard **seamlessly integrates** with existing solutions deployed in utility control centres (e.g., SCADA, DMS, etc.) via **standard APIs** and a **multi-protocol communication gateway** to deliver 24/7 the right information at the right time

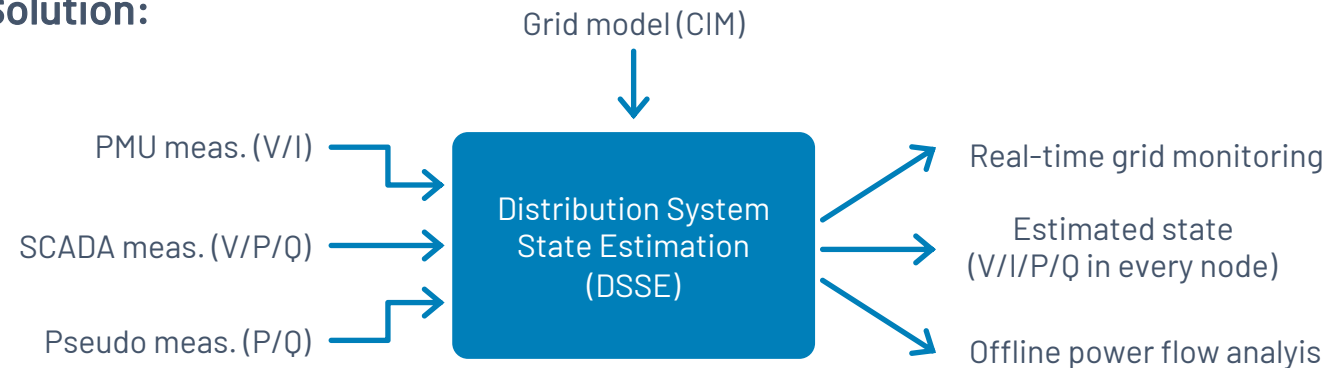
Case study #1: Providing full MV grid visibility in presence of high DER penetration



Problems/Challenges:

- 46% renewable power share in Germany (2020)
- Lack of knowledge of voltage profiles, current/power flows and grid equipment stress in presence of high DER (Distributed Energy Resources) penetration

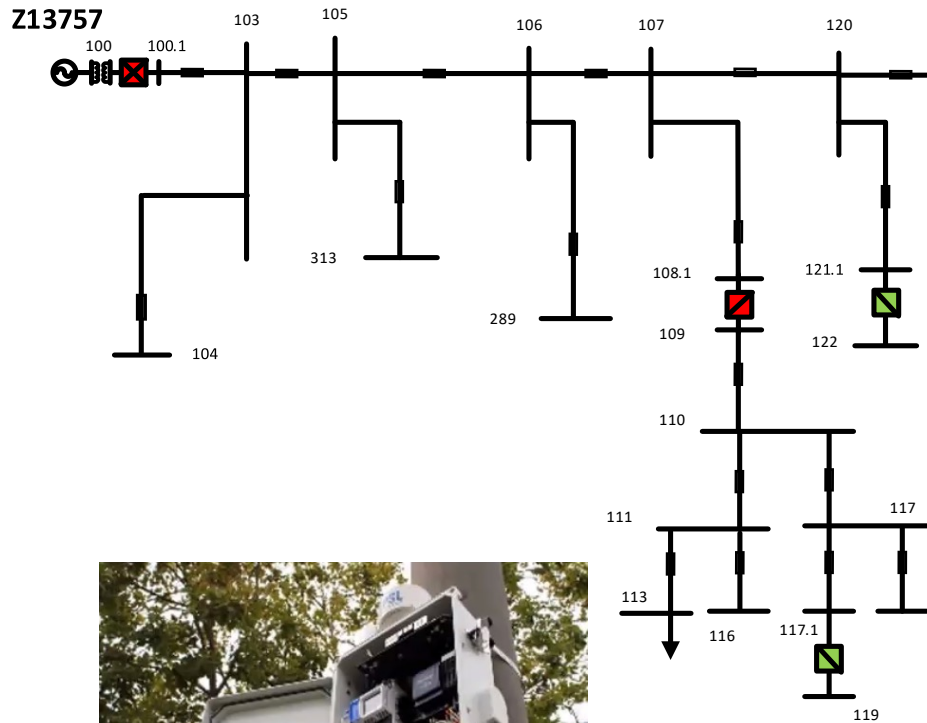
Solution:



Benefits:

- Full grid visibility in real-time with only 10% measurement coverage
- 70% lower integration effort compared to other monitoring solutions

Case study #2: Improving outage management in North America via synchronized measurements



Problems/Challenges:

- The cost of sustained power interruptions in US has approached USD 45 Billion per year

Solution:

- Centralized outage management based on PMUs
 - Synchronized faulted area identification: 100% reliability independently of fault type
 - Enhanced fault distance calculation within faulted area: <50m typical accuracy
 - Location of single/multi-phase faults, high-impedance or intermittent faults with currents as low as few Amperes
- Direct integration with 3rd party PMU devices

Benefits:

- Up to 80% reduction of duration and costs of blackouts via automated fault location and service restoration
- Outage/wildfire prevention via intermittent fault location

Case study #3: A real-scale laboratory for grid applications development and validation*

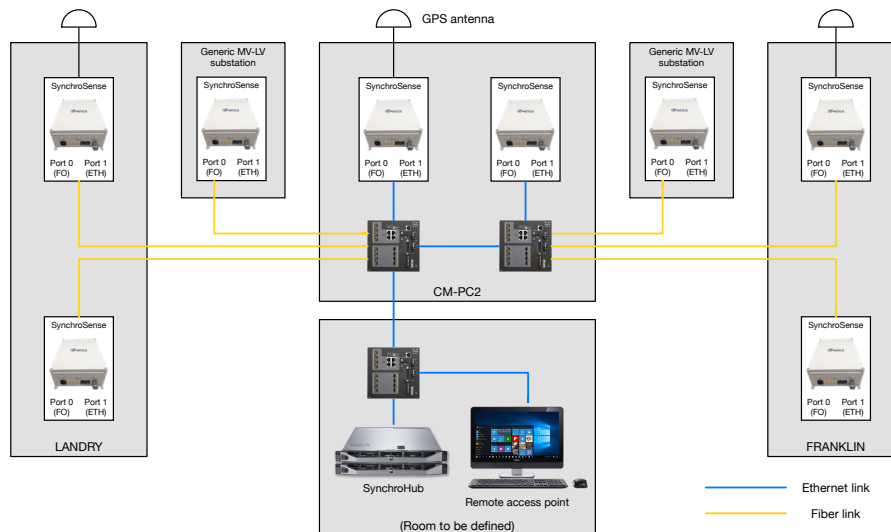


Problems/Challenges:

- Highly congested micro-grid, with increasing number of “special” loads (30 MW) and PV generation (2.5 MW)
- Lack of pervasive PQ monitoring

Solution:

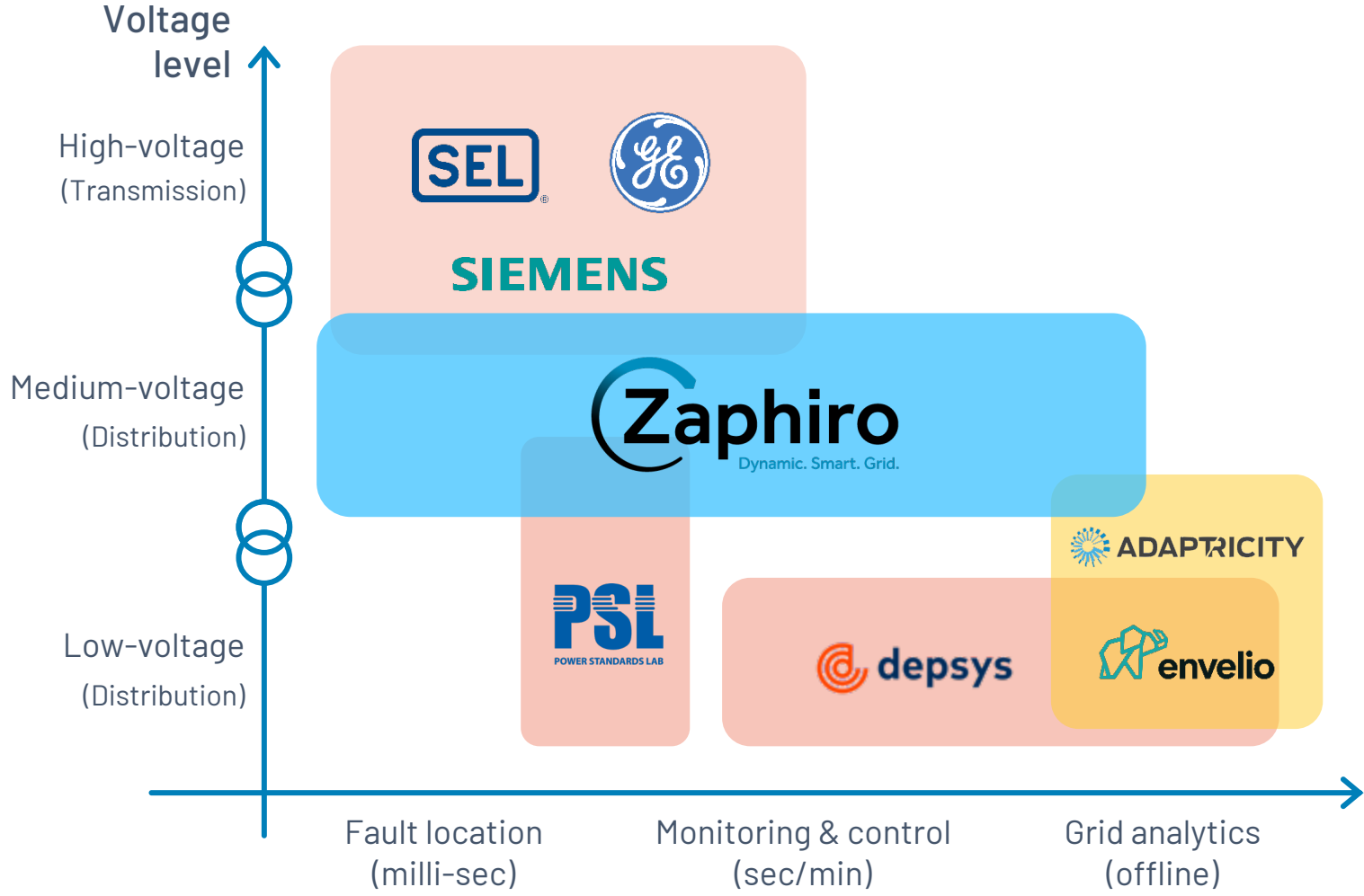
- Pervasive grid monitoring via PMUs (100% coverage)
- Use of existing fiber network for both time-synchronization via PTP and real-time data communication
- Data sharing platform for EPFL researchers



Benefits:

- Up to 85% lower upfront investment compared to conventional grid monitoring solutions
- Unified data platform for research activities of EPFL laboratories in the energy domain

Zaphiro disrupts the medium-voltage market with a superior technology, both for performance and scalability



Competitive advantages:

Performance


- Highest quality grid data
- Full grid visibility
- Best-in-class fault location
- 1st "grid-aware" battery control


Scalability


- All-in-one solution
- Simplest installation
- Modular software architecture
- Seamless 3rd party systems integration

Our highly scalable business model has 3 main revenue streams, with Software/Services representing 2/3 for full-grid rollout

Revenue streams:

- 

Software license
Annual fee per sensor/application
- 

Services
Commissioning, grid studies, etc.
- 

Hardware
Upfront fee for PMU devices



	Pilot project	Full-grid rollout
	<i>Small-scale project (15 units) to test product and quantify benefits</i>	<i>Example of a rollout in the entire grid of a 200k inhabitants city (500 units)</i>
Project duration	1 year	15 years
Avg project value	EUR 160k	EUR 9M
Revenue shares	Software: 25% Services: 13% Hardware: 62%	Software: 53% Services: 15% Hardware: 32%
ARR	EUR 60k	EUR 400k
Gross margins	71%	82%
Already won	14	1*

* Roll-out of 55 D-PMUs in the medium voltage grid of the EPFL university campus

Our strategy is to **scale globally**

Target customers:

Distribution System Operators

Vertically integrated utilities

Microgrid Operators (unregulated)

TAM: EUR 42+bn (2025)*
CAGR: 6-8%*

2021-2023

EU market base expansion

- Direct sales via centrally managed sales team based in EU (initial focus on DACH and Nordics)
- Indirect sales through strategic sales partners to enter new geographies
- Client awareness through Events, Webinars and Cold campaigns

Main milestones:

- ✓ 2022: EUR 5M Series-A round
- ✓ 2023: >20 new clients, Breakeven

2023-2027

Global business scale-up

- Direct sales to scaleup businesses in target geographies: (EU, NA, APAC)
- Indirect sales through strategic sales partners to enter new geographies and market segments
- Brand awareness via tailored marketing communication activities

Main milestones:

- ✓ 2024: Medium/Large rollouts
- ✓ 2025: EUR >20M revenues

*Source: MarketsandMarkets, Navigant Research



Unlock your grid potential!

Partners & Awards

