Future-proof solutions to accelerate the digitalization of power grids

> End to End Smart Metering Solutions



WH we a

The partner of choice for DSOs worldwide

We accelerate the digital transformation of electricity distribution networks worldwide to deliver a new era of sustainable and reliable smart grids through innovative, flexible and customer-driven solutions that are circular by design.

We partner with Distribution System Operators (DSOs) all over the world to help them advance their power distribution networks, delivering integrated, cutting edge and sustainable smart grid solutions to make energy infrastructure fit to meet the evolving needs of grid users and electricity end customers.

Our solutions provide benefits for the entire ecosystem

For DSOs

They increase service quality, reduce operating costs, optimize investments in new infrastructure and enhance safety, productivity and sustainability of field operations.

For grid users

They provide a platform to integrate distributed energy resources and facilitate the development of the energy service market, including flexibility and electrification of end uses.

For end customers

They increase the reliability of the electricity supply, facilitate electrification, foster energy efficiency and make it easier for end customers to become prosumers by taking part in energy markets.

WHAT we do

Future-proof sustainable solutions for the digitalization of your grids

We offer end to end Cloud-Edge Platform solutions and services to accelerate the digital transformation of distribution grids. Our portfolio is designed as an open ecosystem, easy to integrate with legacy systems, combining grid intelligent devices with ready-to-use modular applications, running at central level as well as on the edge.

METERSPERTISE

NETWORKSPERTISE FIELDSPERTISE Field operations digitalization Our solutions streamline field operations and workforce management. reality to allow training of employees, up to machine

Metering and grid edge digitalization

Our smart meters, HES and MDM systems allow DSOs to effectively manage electricity demand through real-time data monitoring and enable grid reliability. They improve billing and revenue protection with fraud detection functions. The solutions also increase customer awareness on energy consumption, allowing more sustainable habits.

Network infrastructure digitalization Our portfolio boosts power grid intelligence up to the edge, allowing remote control and automation to effectively tackle power interruptions and outages, hence increasing service reliability and quality. It also empowers DSOs to operate the network of the future, through

solutions for flexibility and distributed energy resources management.

From augmented and virtual learning and computer vision for vegetation intelligence and asset inspection. They enable DSOs to reduce response time, enhance service quality, and increase field workers' safety and efficiency.

End to End Smart Metering Solutions



THE CHALLENGE

The first smart meters aimed to digitalize readings of electricity consumption, providing benefits on billing and operations.

Today, smart meters need to turn into intelligent sensors to tackle the increasing complexity of the grid as well as facilitating a more active role of the customer in the energy market and encourage the penetration of distributed renewable resources.

At the same time, they need to ensure interoperability, interchangeability and interconnectivity as well as security of communication.

Boosting your AMI operations while strengthening the role of the prosumer

Network Stability & Operational Efficiency

- Bi-directional energy measurement enabling real-time monitoring of electricity used as well as DER produced
- Advanced management of the technical parameters of the grid to detect critical events such as blackouts in near-real time
- Power quality measurement for grid planning and quality of service improvement
- Load shedding functionalities to limit power supply when the network is in critical conditions
- Push communication to send data directly from the meter to the central system
- Multiple communication channels, increasing performance and resilience
- Multi-service measurement, allowing data collection from water and gas meters

Revenue Protection

• Improved billing and collection efficiencies

• Fraud detection functionalities

- Data-driven inspection through energy balance and analytics, to detect meter tampering and energy theft
- Pre-payment management

Customer Engagement

Increased awareness on energy use, enabling more sustainable habits and savings

• Personalized tariff structures, enabling advanced energy and ancillary services

 Dedicated communication channel for home automation and active DR support

End to End Smart Metering Solutions

THE SOLUTION

We offer an extensive portfolio of solutions, starting from Wave 2 devices which leverage a Meters & More PLC protocol and RF @169MHz, enabling direct communication between concentrator and meters. In addition, our Enhanced Wave 2 interoperable devices, compliant to an international DLMS standard, are based on G3 PLC hybrid technology combined with RF Mesh @863-925MHz, maximizing coverage and communication in a cost-effective way.



Tecnology

Wave 2

- RF: point-to-multipoint @169MHz
- PLC: BPSK frequency modulation (Cenelec A band)
- Protocol: Meters & More
- Speedrate: 34Kbps

Wave 2 Enhanced

- RF: mesh @863-925MHz
- PLC: OFDM frequency modulation (FCC band)
- Protocol: DLMS (G3 PLC HYBRID)
- Speedrate: 250Kbps

All our solutions are based on high cybersecurity standards compliant to Suite 1 and Suite 2 DLMS.

BEAT SUITE —

Our interoperable platform simplifies operations and service while increasing the efficiency of the whole process.

The solution is responsible for remote device programming, reading and monitoring of low voltage remote network, as well as business and technical analysis and reporting.

It can be integrated with legacy systems of the DSO (e.g. billing, CRM, GIS etc.) to implement complex advanced metering infrastructure that supports new and existing company processes.



Geographical Information

Prepayment System

System

Billing System

Custom Managem System







HE SYSTEM

- Collects measurement data and meter events
- Remote management activities
- Remote configuration and firmware updates

AAA SYSTEM

- Authentication, authorization and accounting of operators
- Integrable with single sign-on systems

REPORTING & ANALYTICS

- Reporting system, providing also info about the status of the network
- Descriptive and predictive analytics

MDM SYSTEM

 Acquires, validates, estimates and processes AMI data before making it available for billing and analysis

TICKET MANAGEMENT

• Automatic identification, supervision and correction of issues on metering devices, concentrator, modem etc

MULTITENANT ENABLER

 Web-based software component facilitating he introduction of Two Beat HES in small DSOs

End to End Smart Metering Solutions

THE OFFER

We go beyond the mere supply of technology, offering end to end interoperable smart meters developed by Gridspertise and selected partners, HES & MDM systems, as well as services.

A dedicated team will accompany you throughout the entire project, from design, delivery, installation and configuration up to supporting you in the entire system operation.

Devices

- Our Smart Meter families comprehend Single-phase, Polyphase and CT concentrators and trouble shooting devices
- We have a strong experience in the development of smart meters based on PLC technology, with massive roll-outs in Europe and Latin America
- We have extended our portfolio to hybrid PLC + RF solutions to enhance communication performance, overcoming physical barriers or radio frequency interferences



SooS

- Our BEAT SUITE is the underlying architecture of a digitalized network with characteristics of:
 - Modularity: different functionalities can be activated by configuration (Pay per Use)
- Interoperability: enabling integration with Multi-Vendor and Multi-Technology¹ solutions (meters and legacy DSO systems
- We provide full application assistance and maintenance, with operation as a service models

1 Including PLC, RF and cellular technologies

MaaS

• We can provide turnkey AMI projects, including all design, planning, installation, integration, in field maintenance and remote firmware upgrades, troubleshooting and training

 A dedicated team can take in charge your daily operations, supporting you in building the necessary technical expertise and in the re-engineering of your AMI processes

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