



Consolidated view of multiple traditional and renewable energy assets with intelligent end-to-end monitoring

HITACHI
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e-mesh SCADA

Single monitoring point

e-mesh SCADA

for distributed & renewable energy resources

The rise of distributed energy resources means power generation companies must monitor, analyze and control a sophisticated set of generating assets while trying to minimize operational costs, increase operational availability and maximize revenue opportunities.

The e-mesh™ portfolio is a scalable, vertically integrated digital ecosystem to manage and optimize energy at all levels. It offers a wide range of applications from the field to the boardroom, both in the cloud and on premises.

Based on Hitachi Energy's flagship MicroSCADA platform, e-mesh SCADA seamlessly integrates all your traditional and renewable energy assets into a single automated management system across equipment OEMs (e.g., inverter manufacturers) and equipment technologies (e.g., PV, wind, BESS, hydro, biomass), while improving availability, performance and reliability.

e-mesh SCADA features include real-time monitoring as well as historical data trends, alarms, events and user acknowledgment. Additionally, its device level communication allows users to perform advanced fault analysis and diagnosis, reducing system downtime. Automatic report generation is also available.

Its intuitive, flexible and user-friendly interface enables safe operations with top-class cyber security features, including secure communication and user access management, complying with most industrial communication standards.

A key differentiator of e-mesh SCADA is its ability to monitor and control both distributed energy resources and substation equipment using IEC 61850, IEC 60870 5 101/104, DNP3, OPC and Modbus protocol. This enables Hitachi ABB's solution to integrate the full power system value chain from electrical generators to user terminals from a single monitoring and control point.

Hitachi Energy has provided, installed and commissioned SCADA solutions for >15 GW of hydro, wind and solar plants globally.



Grid edge technology

Enable multiple energy resources to operate together, ensuring grid stability and reliability.

Maximum renewable utilization

e-mesh SCADA together with e-mesh Control unlock maximum renewable energy penetration to grid.

Ergonomic display

e-mesh SCADA has intuitive and ergonomic HMI screens featuring real-time updates, making it easy to visualize field problems and enabling fast responses.

Cyber security

Protects your assets while complying with NERC-CIP and other international cyber security regulations.

Performance improvement

Delivered to optimize reliability and efficiency of your assets, increasing overall productivity.

Communication compliant

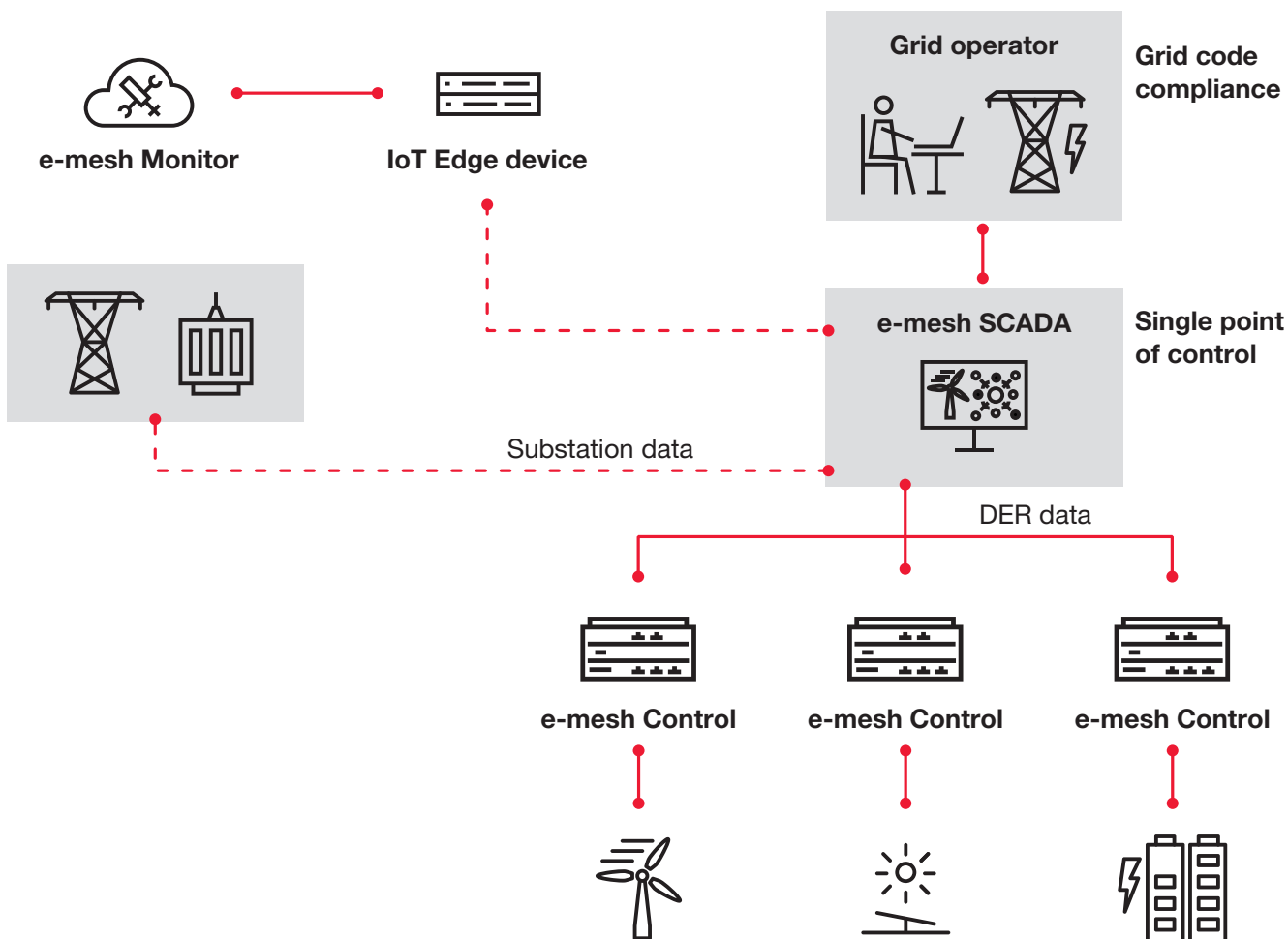
Supports various industrial open protocols such as Modbus, IEC60870-5-101/104, DNP3, OPC. It can also monitor substation control and protection equipment using the IEC61850 protocol.

Operational excellence

Helps to manage your assets, operations and maintenance efficiently, supporting strategic decisions and leading to cost savings.

Easy to handle

Organizes the data in a simple and meaningful way, ensuring safe and error-free operations.



e-mesh SCADA BESS

e-mesh SCADA BESS library has been purposely designed for battery energy storage systems. Its user interface helps operators to visualize all critical components of the system and enables quick operational decisions.

- Monitors and controls your entire battery energy storage fleet
- Optimized user interface for better parameter management
- Integral safety features to ensure correct sequence of operation
- Dedicated graphical symbols package gives greater visibility of the plant
- Intelligent control system supports system stability and availability
- Built-in features to communicate with any external SCADA software packages
- Enables automatic recharge of energy storage
- SoC management

e-mesh SCADA Microgrid

e-mesh SCADA Microgrid library includes all required user interfaces to integrate all types of energy resources in your system, from fossil fuel generators to advanced renewable resources like wind or solar PV.

- Built-in sequence of operations helps operators to maintain a microgrid
- Black start management features thanks to e-mesh Control platform at field
- Operator and equipment safety is an integral part of our control system
- Maintains grid stability and availability
- Enhances power and asset management
- Maximizes renewable utilization
- Reduces carbon footprint
- Optimizes energy costs



e-mesh SCADA Renewable Automation – Solar

A versatile and scalable automation package to monitor and control your solar PV assets.

- PV plant advanced monitoring from string level to the power grid connection
- Optimizes power output based on inputs from TSO & DSO
- Grid codes and standards compliant (if combined with e-mesh PPC)
- Historian with high resolution data logging
- Energy production tracking
- Integrated cybersecurity
- Allows you to manage curtailment (automatic if combined with e-mesh PPC)

e-mesh SCADA Renewable Automation – Wind

e-mesh SCADA RA-Wind library has been specifically designed for wind farms, enabling wind turbine asset management.

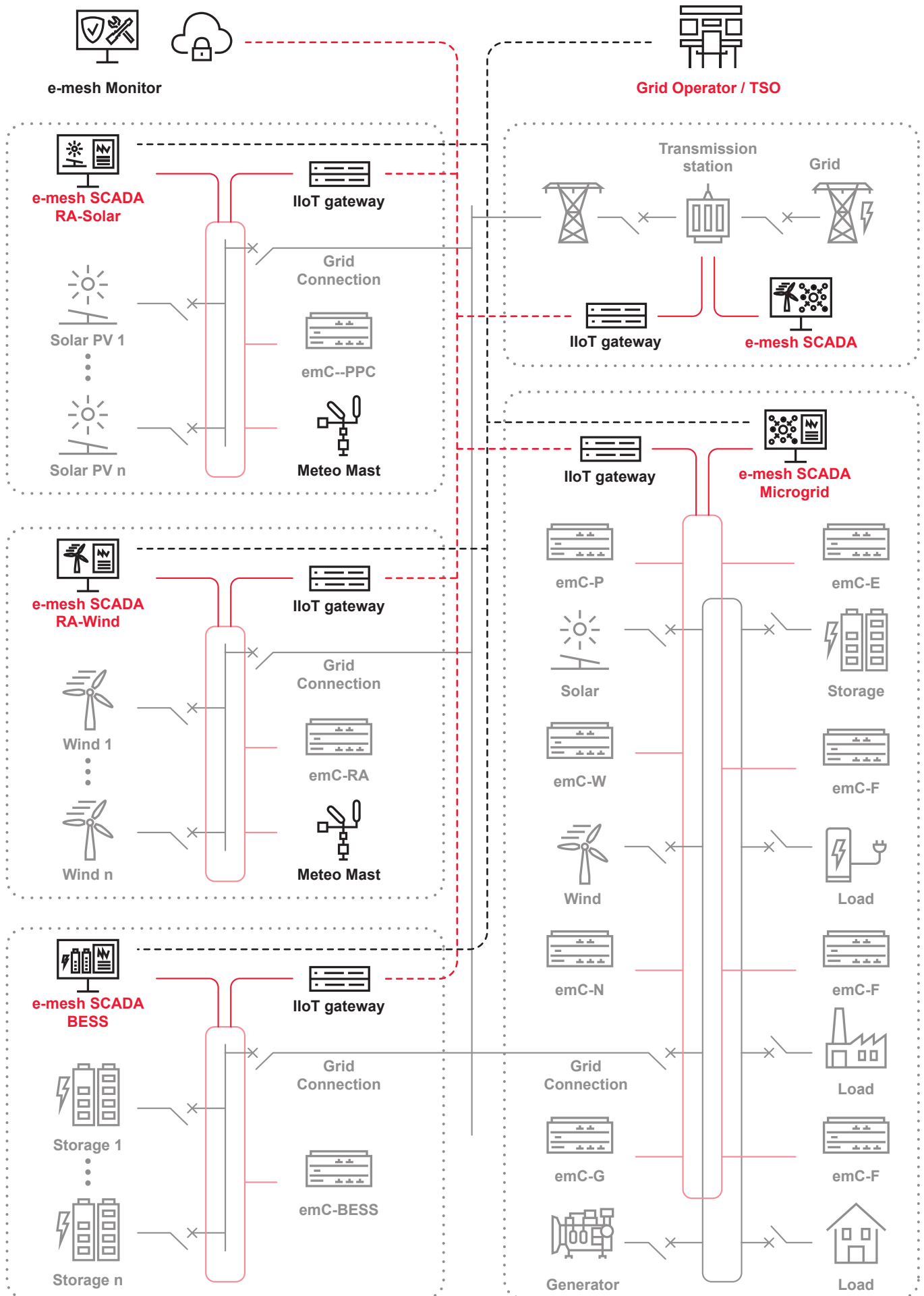
- Wind farm advanced monitoring
- Optimizes power output based on setpoints from TSO & DSO
- Displays wind turbines control information
- Energy production tracking by wind generator
- Reactive power compensation
- Allows you to manage curtailment (automatic if combined with e-mesh PPC)

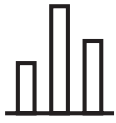


e-mesh DataStudio

e-mesh DataStudio is a web based standalone tool integrated with e-mesh SCADA historian for generating reports based on various user defined criteria's.

- Reports can be generated in various file format like csv, pdf, JSON, html & xml.
- Customized offset report timing possible to create user defined time line for reporting.
- Simple engineering steps

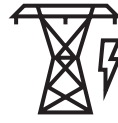




Comprehensive energy asset monitoring



Diagnostics & control of energy assets



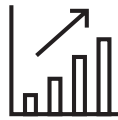
Grid code compliant together with e-mesh Control



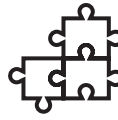
Integration of all energy assets into single system



Optimised operations and maintenance



Improved asset performance & power production



Scalability in size and functionality with low lifecycle costs



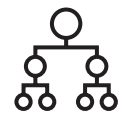
Protects your assets and interests with cyber security compliance



Future-proofed with wide protocol compliance



Monitor assets across locations



Manage access control for data security



Global after-sales support

Global service support

Backed by 125 years of technology leadership, domain expertise and the industry's largest installed base, Hitachi Energy helps customers optimize asset performance.

Our after-sales support and global services team enables companies to reduce maintenance spend while better protecting assets and employees. Lifecycle management and training can also be provided.

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