MGMS Application Operation

All systems work together to continually define and redefine the status of the microgrid and ensure the appropriate generation and load to meet user defined goals.

The Siemens Spectrum Power Microgrid Management System (MGMS) is a software solution for optimal microgrid management and control. MGMS is based on our world renowned utility grid control Spectrum Power 7 platform, ensuring the power and performance to handle any microgrid application.

Some of the Fundamental functions include:
- SCADA
- Data Modeling
- Sequence of Operation
- Seamless transition to and from island mode
- Communication Protocols

Some of the Essential functions include:
- Frequency and Voltage Control
- Active and Reactive Power Control

Some of the Advanced functions include:
- Unit Commitment Optimization
- Market Participation Tools
- Load and generation forecasting
- Microgrid Scheduler
- Full Featured Historian

MGMS Advantages

- Fully integrated system that includes robust SCADA and full suite of communication protocols
- Advanced cyber security design
- Seamless integration with the grid control center
- Flexibility to deploy at control center or remote site
- Backed by Siemens service, providing expertise in control enter solutions, substation automation solutions, and building automation solutions
- Microgrid planning services provided by Siemens

The technical data presented in this document is based on an actual case or on as-designed parameters, and therefore should not be relied upon for any specific application and does not constitute a performance guarantee for any projects. Actual results are dependent on variable conditions. Accordingly, Siemens does not make representations, warranties, or assurances as to the accuracy, currency or completeness of the content contained herein. If requested, we will provide specific technical data or specifications with respect to any customer’s particular applications. Our company is constantly involved in engineering and development. For that reason, we reserve the right to modify, at any time, the technology and product specifications contained herein.
Advanced Microgrid Management System
Spectrum Power™ MGMS

Is MGMS for you?
Are you requiring any of the following:

- Integration of distributed generation and renewables
- Increased reliability and availability
- Increased resiliency in case of grid outages
- Revenue opportunity through market participation
- Highly configurable and modifiable system to your own needs
- Microgrid assets and protection equipments vendor agnostic

Why MGMS by Siemens

- Highly configurable Model System
- Centralized control system with advanced functionality (forecasting, generation optimization)
- Industry-proven market participation tools
- Control software applicable to both grid connected and islanded microgrids
- Strong security platform based on utility-grade system (compatible with NERC-CIP security features)
- Scalable, monitor and control as many DERs as necessary
- Clear and easy-to-use User Interface
- Seamless web-based integration with any application or system
- Flexible deployment at the control center or other sites
- Siemens expertise in areas from planning, all the way to building automation and integration

usa.siemens.com/microgrid
MGMS Standard Features

The Siemens Spectrum Power Microgrid Management System (MGMS) is a powerful control platform with layered, modular architecture. This design provides the flexibility and extensibility to tailor MGMS for any operational demand. Model-based applications support advanced optimization of the entire microgrid energy infrastructure system.

- Generation and load control
- Renewable generation forecasting
- Frequency and voltage control
- Microgrid optimization
- Sequence of Operations
- Emissions vs. energy cost optimization
- Renewable generation integration and control
- Energy storage systems integration and controls
- Compatible with NERC-CIP cyber security standards
- Consolidated User Interface

The MGMS platform includes rich complement of critical and advanced features packaged as standard offering for optimal operation of microgrid.

Siemens Microgrid Control Hierarchy

The Siemens Spectrum Power Microgrid Management System (MGMS) is a powerful control platform with layered, modular architecture. This design provides the flexibility and extensibility to tailor MGMS for any operational demand. Model-based applications support advanced optimization of the entire microgrid energy infrastructure system.
Spectrum Power MGMS Architecture

- More than a “microgrid controller”
- More than an advisory optimization software
- MGMS – EMS/SCADA for microgrid
  
Integration with other solutions
With its standards-based interfaces, the MGMS integrates seamlessly with existing IT systems applications and power system assets via Siemens Service-Oriented Architecture (SOA) Adapter web services-based APIs.

It also uses standard telecontrol communications capabilities DNP3, MODBUS, IEC 60870-5-101, IEC-60870-5-104.

MGMS seamlessly integrates with Blockchain Platforms via web service interfaces.