MAXIMUM SECURITY IN OPERATING MICROGRIDS

Microgrid Control – a SICAM application

siemens.com/microgridcontrol

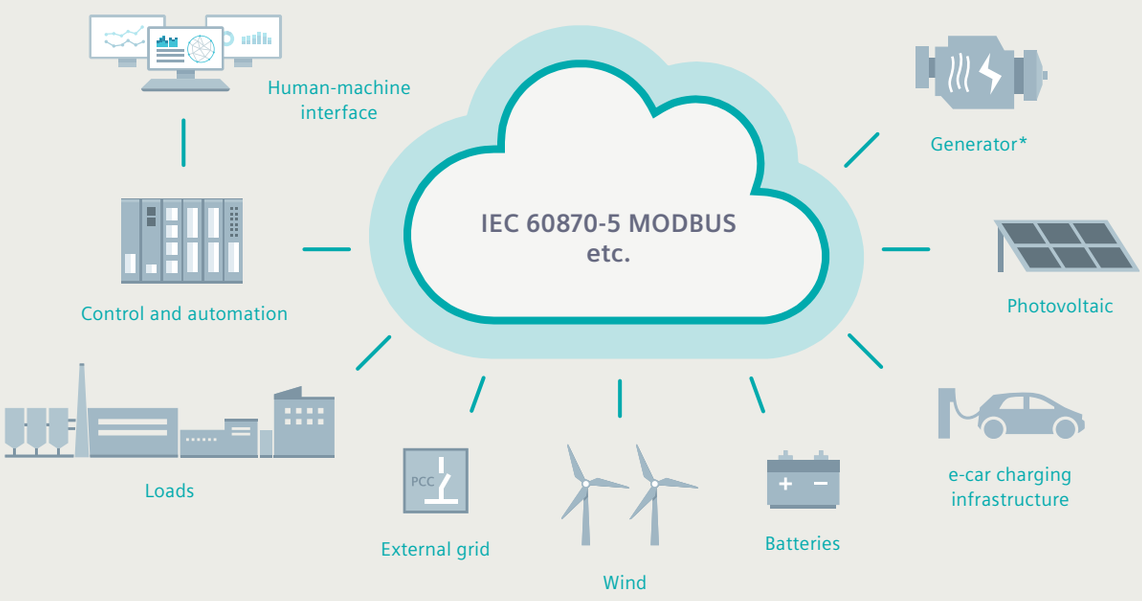
SIEMENS

Seamless operation. Maximum security.

Benefits at a glance:

- Maximum efficiency through a high-performing power supply system
- Excellent grid quality meets the stringent requirements of autonomous grid operation
- Cost-effective operation with access to straightforward optimization capabilities
- Comprehensive integration of renewable energy meets the climate protection targets that promote CO_2 reduction
- Resource-efficient use protects the environment and minimizes costs

Microgrid Control – Configuration



*diesel generator, CHP, gas turbine

A microgrid you can rely on

Asset monitoring
• Integration of asset status, measurement, and monitoring devices
• Automatic derivation of required system responses

Blackout detection, black start, and automated grid modes
• Blackout detection and indications by evaluating related measurements
• Automatic repowering of the microgrid by the execution of a black start sequence
• Automatic re-synchronization to the distribution grid after blackout
• Control of voltage and frequency to ensure network stability

Automatic start of backup generators
• Protection against short circuits and faults
• Reduced operating costs by using diesel generators mainly as backup

Generation offsetting and balancing
• Minimized fuel costs and challenges linked to fossil fuel supply
• Improved diesel generator performance
• Optimized diesel generator efficiency

Reserve management
• Stable grid operation through consideration of spinning reserve requirements
• Balance of fluctuations in renewable generation
• Shed excess energy in response to voltage/ frequency boundary violations

Peak shaving
• Optimal shift or reduction of peak loads
• Storage of energy during low demand periods

Integration of infrastructure for electric vehicles
• Dynamic load management for charging units

State-of-charge management
• Storage of energy in case of excess renewable energy
• Ensure minimum energy content
• Charge/discharge schedules

Load and renewable generation forecasting
• Manual input or import of power and weather forecast
• Electrical/ thermal load and renewable generation forecast based on historical data, when considering weather forecast

Economic and environmental indices
• Reduced CO_2 emissions
• Fuel-cost savings

Integration of thermal assets
• Control based on thermal network pressure
• Control with thermal targets

Energy and ancillary services markets
• Automated mechanisms/workflows for market participation
• Automatic services provisioning

Algorithms fulfill the IEC 62898-2 standard

Why a SICAM application?

Siemens product family provides:

- Flexible communication through a wide range of protocols and common transmission media
- Scalable base product for seamless continuity
- Intuitive operation utilizing the SICAM Toolbox II and SICAM WEB
- Interdisciplinary engineering made possible by standardized configuration
- High level of protection through comprehensive security protocols

A solution to fit all your needs

Microgrid Control – a SICAM application: Smart migration, seamless integration

Intelligent energy management in a compact space, Microgrid Control can be seamlessly integrated into existing control systems. Earn points through the solid interplay between automation and remote control. Thanks to open interfaces and international standards, the solution supports unlimited migration. Perform maintenance through intuitive plugand-play functionality.

Software-hardware combinations

Choose from one of two software-hardware combinations:

1. Gain more flexibility with an individualized configuration of standardized hardware and software blocks.

2. Benefit from a flexible control solution for microgrid automation with a cost-effective preconfigured microgrid cabinet. Its small, rugged housing design is optimal for new and retrofit installations.

The microgrid cabinet uses the compact, flexible, and powerful SICAM A8000 telecontrol and automation system.

Gain the reliability you need and the security you can count on.
Discover Microgrid Control – a SICAM application.

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CONTACT

Reach out to us.

It would be our pleasure to tell you more in a personal talk – either face to face or digitally. Please get in touch with us to arrange an appointment.

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