



*“An Advanced Distribution Management System (ADMS) is the software platform that supports the full suite of distribution management and optimization. An ADMS includes functions that automate outage restoration and optimize the performance of the distribution grid. ADMS functions being developed for electric utilities include fault location, isolation and restoration; volt/volt-ampere reactive optimization; conservation through voltage reduction; peak demand management; and support for microgrids and electric vehicles.”*

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**Spectrum Power™**  
**ADMS**

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Answers for infrastructures and cities.

# Spectrum Power™ with new ADMS

Next-generation energy distribution  
at your fingertips



The key challenges in today's world of power distribution management are derived from an increasingly complex grid. This is because the share of Smart Metering and Demand Response is growing while the adaptation of distributed generation and energy storage inquires advanced solutions.

To this effect, Siemens has entered the next era of power control systems: Announcing the Spectrum Power™ Advanced Distribution Management System (ADMS), the integration of Distribution SCADA, Outage Management and Advanced Fault and Network Analysis operated under a Common User Environment. It enables the user to

- monitor, control and optimize the secure operation of the electrical distribution network;
- efficiently manage day-to-day construction maintenance and repair efforts; and
- proactively and safely guide operators when needed most, i.e. during storms and outage-related restoration activities.

At the same time, it integrates the intelligent use of Smart Meter information and distributed resource (generation/load) regulating capabilities, as well as the potential of Microgrids. ADMS is rapidly becoming an essential element in maintaining and improving delivery reliability while reducing complexity and automating related work processes – therefore providing a solid foundation for the management of the emerging Smart Grid.

Spectrum Power™ ADMS is the Siemens global solution for the management of the evolving Smart Distribution Grid. ADMS has been designed to meet the following operational challenges:

## Increase operator's situation awareness and reduce operator's reaction time with its

- Geospatial/Schematic User Interface and integrated substation/feeder auto-displays;
- Distribution SCADA (D-SCADA) to enable the integration of Substation/Feeder Automation; and
- Distribution State Estimation (DNA/DSSE) to determine the real-time state of the network.

## Reduce fault location and service interruption time with its

- Outage Management (OM, incl. trouble call management and mobile crew management) and Switching Procedure Management (SPM) integrated with Smart Metering (MDM/AMI); and
- Automated Fault Location, Isolation and Service Restoration (FLOC and FISR).

## Reduce network loading at peak times and increase asset utilization with its

- optimal Volt/VAR Control (DNA/VVC) to enable voltage reduction, integrating the possible use of Distributed Generation; and
- optimal Feeder Reconfiguration (DNA/OFR) to enable removal/reduction of (active/foreseen) overload, integrating the possible use of Distributed Generation and Demand Response.

## Increase network efficiency and reliability of supply with its

- optimal Volt/VAR Control (DNA/VVC) to enable features such as loss reduction and improved voltage profiles, integrating the possible use of Distributed Generation;
- optimal Feeder Reconfiguration (DNA/OFR) to enable load balancing, etc.; and
- Distribution Load Forecast (DLF) to enable operational planning with the above functions.

## Increase operational efficiency with its

- Workspace Management, Test Mode and integrated tools under a Common User Environment to automate the user's workflow;
- performance and sizing capabilities to enable LV modeling integration (EU and big US city centers); and
- integration with Condition Monitoring for asset usage reporting and asset secure state retrieval.

## Increase business process integration with its

- SOA Framework to enable CIM-based SOA integration with other systems (e.g. CIS, MDM); and
- GIS Smart Integration to enable GIS as distribution network definition source master.

The emerging Smart Grid produces a very large amount of data to be processed (e.g. data from Smart Meters). Advanced DMS provides the transformation of this impressive volume of data into the minimum amount of actionable information for the efficient operation of the grid.

Spectrum Power™ ADMS is characterized by its unique Common User Environment, enabling operation of all ADMS functions from a common Web-based user interface while using a common operational network data model. The operational model is kept aware of, or synchronized with, model changes implemented in the GIS when readied for real-time operation. And the user interface integrates, under a common geospatial visualization tool (i.e. schematic views, geospatial maps and tabular lists), the distribution SCADA operation, the complete Work and Outage Management process, and the use of the complete suite of advanced applications. Other external applications can also be considered for such integration via dedicated additional Data Providers.

With its component-based architecture and Common User Environment, Spectrum Power™ Advanced DMS provides a flexible, configurable environment for advanced grid management compatible with the different market requirements. ADMS is typically provided as a full-scope solution, however it is also available

- integrated with a third party Outage Management System or
- integrated with a third party SCADA.

Enterprise integration with external systems, such as GIS, CIS, IVR, Advanced Metering, Workforce Management and Asset Management systems, is commonly included in these implementations via the CIM-based SOA integration framework that is an integral part of Advanced DMS.