Newsletter of the Business Unit Network Management

Network Management Newsletter
Issue 3/2009

Dear readers,

As I write this message today, the global economy remains sluggish and continues to impact many businesses and individuals. In many parts of the world, capital spending levels continue to be depressed, and unemployment levels in some locations remain very high. These are trying times for almost everyone.

While ABB is acutely aware of the impact of the economy on our customers, the outlook at ABB Network Management is very optimistic. Our focus is on the monitoring, control, and automation of distributed assets, particularly in the electric energy industry. The drivers for increased automation and modernization in this segment continue to be strong. These drivers include the ongoing interest in more efficient electricity systems with corresponding emission reductions, infrastructure for connecting additional renewable energy and energy storage on the network, and increased levels of grid reliability, power quality, and asset utilizations. The result for us at ABB is a high level of activity and interaction with industry stakeholders, particularly our customers, in defining and delivering solutions including Smart Grid systems and components.

In our last newsletter, we announced our first truly global product platform Network Manager Release 4. Customer interest is very high, and as you will read in this newsletter, we are receiving orders already. We have contracted with National Grid, a leading global utility, to provide their US operations with Network Manager for SCADA EMS, DMS and OMS. This solution will provide National Grid with a common platform for improving efficiency and maintaining a reliable and secure system. The activity level centered around Network Manager Release 4 with other customers is also very high.

Additionally in this newsletter, you will find articles showing the large scope of our business, with respect to both functionality and geography. The enclosed articles describe projects in the areas of SCADA, EMS, DMS, telecommunications, RTUs, and distribution automation. These illustrate ABB's capabilities and global leadership in supplying full scope Smart Grid solutions. Finally, you will find an article describing how ABB's Network Manager can provide the foundation of an integrated distribution operations center for managing the distribution Smart Grid.

We are excited to help you, our valued customers, in providing solutions that assist you in meeting your goals. I would be happy to receive your feedback at any time.

Jens Birgersson
Business Unit Manager Network Management

ABB wins utility telecommunications order in the UK

Communication system to enhance power network control, efficiency, and reliability

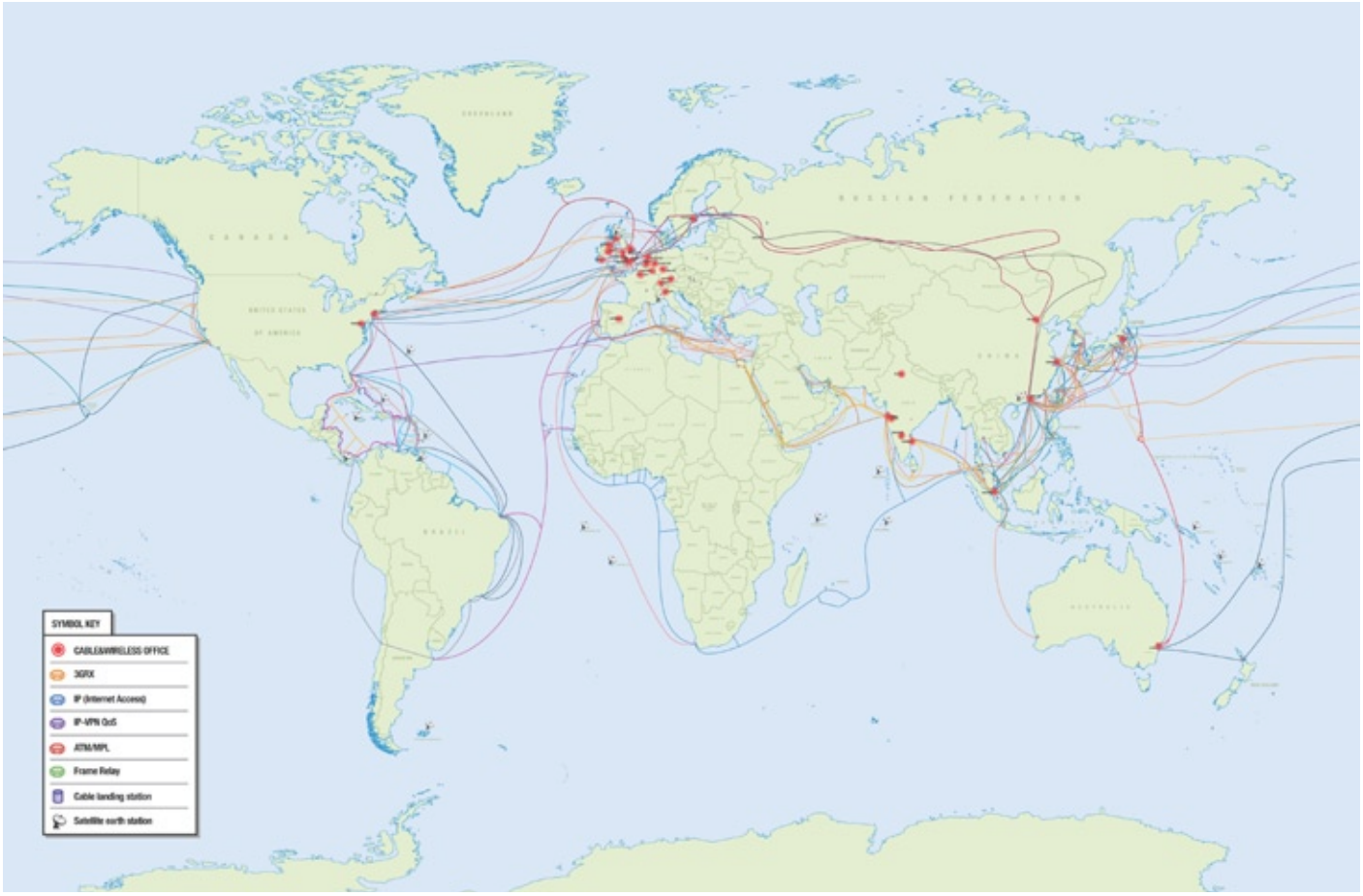
ABB has won an order from Cable & Wireless, one of the world's leading international communications companies, to supply a specialized utility telecommunication system as part of a customer contract.

ABB will deliver a range of utility communication solutions designed and developed for high performance in challenging high-voltage applications. The system supplied by ABB is an integral part of a project that involves a major upgrade of the core network infrastructure and operational systems that interconnect 410 high-voltage substations throughout the U.K.

"ABB's state-of-the-art communication system will provide greater control and benefits such as improved efficiency and higher reliability," said Jens Birgersson, head of ABB's Network Management business, a part of the company's Power Systems division. "It will also support the safe transmission of electricity in the country."

The project scope includes engineering, supply, cubicle assembly, installation, and commissioning of the system, including multiplexers that combine application signals and other services into one optical aggregate – all managed by a communication Network Management system.

CABLE & WIRELESS



Cable & Wireless network

ABB to provide network management solution for National Grid in the US

Common platform to help manage power network and enhance efficiency

ABB received an order to implement its Network Manager SCADA/EMS solution in the US for National Grid, a leading energy utility.

National Grid will deploy the technology in its upstate New York and New England electric operations control centers to manage the transmission and distribution networks in the region. This will facilitate a common platform for system support and operations, thus improving efficiency and maintaining a reliable and secure system.

"We are delighted to work with National Grid," said Jens Birgersson, head of Network Management at ABB, a part of the Power Systems division. "Network Manager is a market leader that enables reliable, secure, and energy efficient network operation and is an ideal base for smart grid applications."

As part of the project scope, ABB will provide design, engineering, software, hardware, system implementation, and related services to National Grid. The Network Manager platform includes the SCADA system, advanced power system applications, user interface with advanced visualization and situational awareness, and a fully integrated operator training simulator. It also has system integration capabilities including the use of a Common Information Model (CIM), full system redundancy, and offers scope for expansion. Network Manager meets industry mandated NERC Critical Infrastructure Protection Standards and National Grid cyber security requirements.

"This project is part of National Grid's continuing investment in enhancing service and reliability for our customers," said Masheed H. Saidi, National Grid's executive vice president and chief operating officer for U.S. Transmission. "We look forward to benefiting from ABB's resources and expertise." National Grid is an international energy delivery company, owning over 4,000 megawatts of contracted electricity generation capacity in the US and delivering electricity to approximately 3.3 million customers in Massachusetts, New Hampshire, New York, and Rhode Island. It also manages the electricity network on Long Island under an agreement with the Long Island Power Authority (LIPA).

National Grid believes that a well-managed transmission system is the key to enabling robust competitive electricity markets that offer customer choice, savings, and other benefits.

Enhanced Grid Management with Upgraded ABB Network Manager System

Gothenburg Energy manages a typical urban grid with significant numbers of transformers and switchgear and dense with load points. To manage this, they have the latest version of the ABB Network Manager SCADA.

High up in Gothenburg Energy's high rise building, one has a terrific view of what is going on in Sweden's second largest city: traditional blue trams move toward Central Station or turn down toward Stampen cemetery; traffic signals always change their red, yellow, and green lights; New Ullevi, the biggest sports arena in Scandinavia, lights up the skyline with its powerful floodlights before an evening game. Everything works thanks to a secure supply of electricity. Not only this, but the control room also keeps track of the parts of Gothenburg that are hidden to the eye. If the lights go out and the trams come to squeaking stops throughout the city and are unable to resume operations, it is known up in the control center at the very moment it happens.

Wide-screen Information Display

Around the clock, all year round, Gothenburg Energy monitors about 80 large and 1 200 small substations. The information is displayed on widescreen monitors with the new ABB Network Manager SCADA system.

"In the past, it took 50 meters of wall panels in one room for what we now can see at our monitors," said Lars Lundstrom, responsible for the SCADA system at Gothenburg Energy.

The monitoring of the grid was computerized as early as 1973 and from the start, ABB has had the privilege of being the system supplier of all Gothenburg Energy systems.

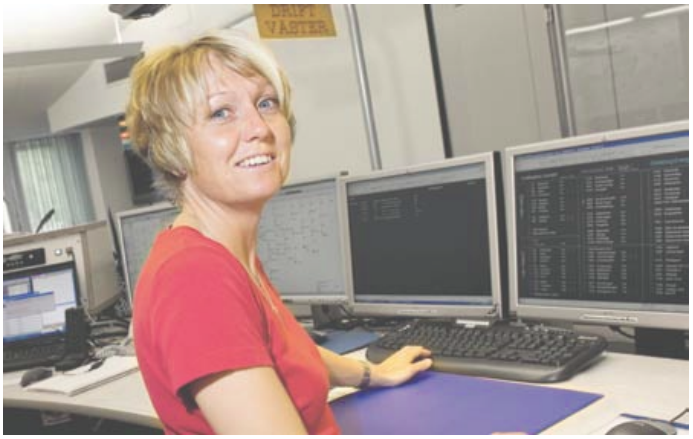
Gothenburg Energy

Owner: Gothenburg Municipal Management AB (City of Gothenburg)
Employees: 1097
Turnover 2008: 400 million Euro

Gothenburg Energy is Sweden's fourth largest energy company and leader in western Sweden. The company's products include production and distribution of electricity, district heating, gas, refrigeration (district cooling), energy services, and communications.

Network Manager includes applications for SCADA, Network Management, and outage handling to meet utility and power companies' needs to maintain a high level of service to their customers. With the Network Manager SCADA/DMS system, operators have a picture of the state of distribution networks with all events being updated in real time.

Per-Ake Folkesson, ABB provides support to Hans Andersson, Project Manager, and Lars Lundstrom, system responsible, from Gothenburg Energy.



The new widescreen monitors are now standard in newer Network Manager releases. Operating Engineer and Network Manager user Annica Andren has just started her shift.

Helmet on. Christian Roxenius, engineer at Gothenburg Energy, on his way out to do line trouble shooting after an alarm in the Network Manager system.

Gothenburg Energy has been able to upgrade their system over the years with ABB's newer versions. The recent upgrade to the latest version of Network Manager was performed in such a way that allowed Gothenburg Energy to run the old system in parallel with the new upgrade, and easily switch from one to the other during commissioning and the critical cut-over phase.

The new system will also bring in a lot of new functionality. "This version is more compatible with other newer IT systems, and we get a more efficient tool for our data maintenance." said Hans Andersson, who leads the project to install the system upgrade at Gothenburg Energy.

Once the system is installed and tested, Network Manager will be commissioned and set into full operation and the old system will be shut down.

Factory Acceptance Testing

Per-Ake Folkesson works at ABB Network Management in Västerås, Sweden and has been ABB's project manager for the Network Manager system delivery to Gothenburg Energy. Prior to delivery, staff from Gothenburg Energy visited the Network Manager center in Västerås and performed extensive testing of the system in a Factory Acceptance Test, with good results. A noted advantage of the new system is that the standard version of Network Manager contains all the functionality required by Gothenburg Energy, thus avoiding customer specific coding. "ABB transferred all data from the old to the new system, and the next upgrade will therefore become even more efficient and easier to install," Folkesson said.

Network Manager scans the status of the grid in the City of Gothenburg and presents state information via optical fiber to the operation control center. "We are able to keep better track of network status," says Lars Lundström.

Network Manager controls the electricity grid and improves reliability and security, prerequisites for a modern city to work. It is of course essential that the controlling system work without interruption. To ensure this, Network Manager is configured with dual system servers. A remote emergency system (ECC) server is connected to the ordinary two servers to provide triple security. In an emergency, the complete operational staff can be relocated to the ECC site and operation can be resumed from there without any loss of data. "We have protected ourselves against the risk of exposure to a complete system shut-down by combining the base system from ABB with proper planning and our own work;" says Lars Lundström.

Customer Support

If a system error occurs, ABB support is close at hand. "If it is a serious thing, we receive help directly. We have never had a complete stoppage in which we were not able to do our main job, i.e. network operation," says Lars Lundström.

The last time Gothenburg Energy upgraded its SCADA system was in May 2005. Lars Lundström prefers not to wait for another four years. "The next version of Network Manager contains many new functions that are of interest to us " said Lars. "Clearly, it is a budget issue, but the idea is not to wait longer than a year and a half until the next upgrade."

ABB to deliver integrated Network Management solution for Malta

SCADA to facilitate real-time control and enable Smart Grid operation

ABB has recently won an order for a Network Manager SCADA system that will help monitor and control Malta's electricity supply network and provide a foundation for the evolution of a smart grid.

Contract signing ceremony; From left Ricardo Klatovski, Sales Manager, IBM; Alexander Tranter, Chairman of the Board of Directors, Enemalta Corporation; Mats Kristensson, Market and Sales Manager, ABB Network Management

ABB will implement an integrated Network Manager SCADA solution to monitor and control the power stations and substations on the island of Malta. The project scope includes design, engineering, installation, commissioning, and a three-year service agreement.

This will be the first computerized SCADA system for the Enemalta network. The control room today uses traditional map boards, and most of the substations have to be controlled from the substation itself. The new SCADA system will bring all control to a central control room where the entire Maltese network can be monitored and controlled in real time. When taken to full operation, Enemalta will able to substantially improve both the quality and the reliability of the supply of electricity under varying operational conditions.

"This project is a good example of how advanced ABB technology can help to enhance network reliability and efficiency through better monitoring and control. This solution will considerably improve the availability of the network, and will benefit consumers with a more stable electricity supply" said Lars Nilsson, Project Manager for ABB's delivery.

The Network Manager SCADA system for Enemalta includes station adaptation comprising 12 RTU 560 units and several substation automation units (SCS – Substation Control Systems). The system also includes features for optimal load shedding at peak loads and quick restoration of power in case of outages. Other benefits include operational flexibility, data archiving, and reduction in losses. The system will provide a good platform for smart grid operation and managing future interconnections in the Mediterranean region.

The project will be executed by IBM and ABB for Enemalta Corporation, an integrated government utility offering a broad range of energy services to the industrial, commercial, and domestic sectors and responsible for the operation of the power generation, transmission, and distribution network in Malta.

Detail from today's control room and the map board at Enemalta. All these schematics will be redrawn and displayed in the Network Manager system

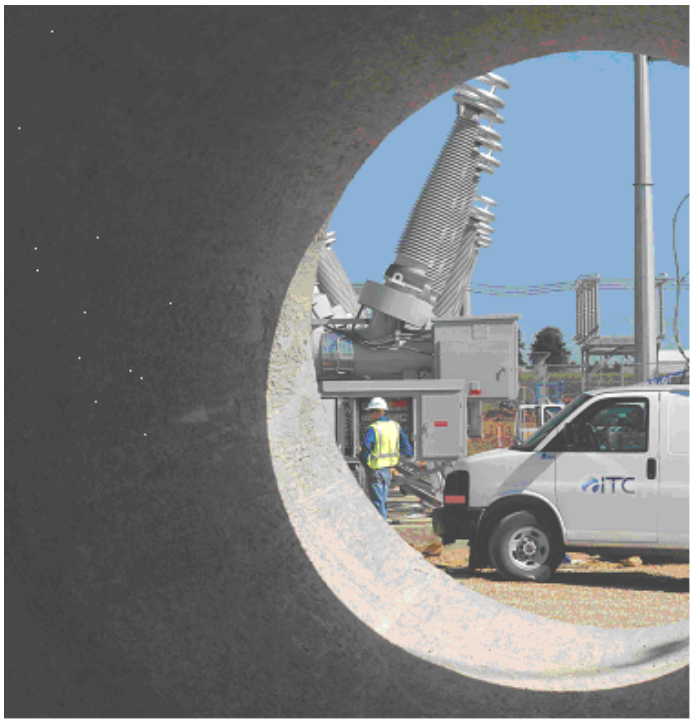
ABB delivers second Network Manager EMS to ITC Transmission

Network Manager expanded to cover ITC's newly acquired Midwest operations

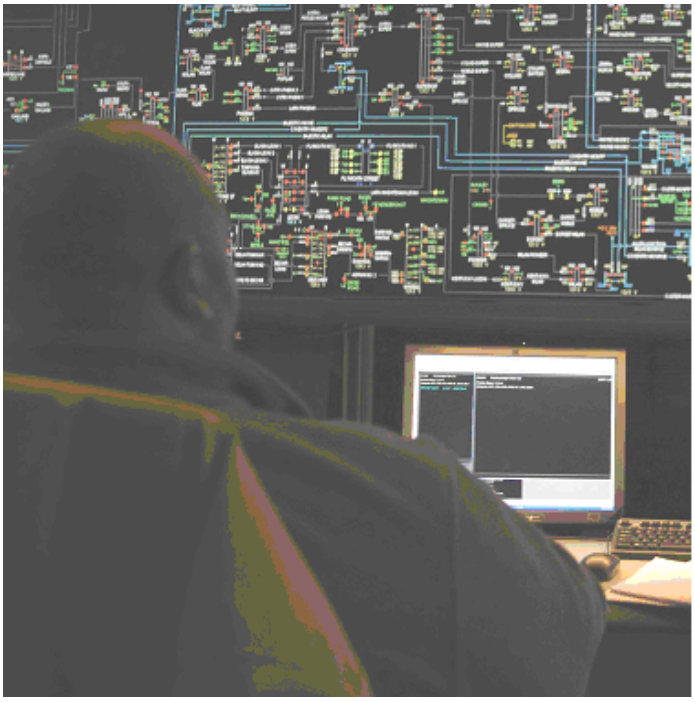
ITC Transmission is in full production with their second Network Manager system. This second transmission management system (TMS) facilitates the operation of the assets of ITC Midwest.

The ITC Midwest system, created by the acquisition of Interstate Power and Light (IP&L) in 2007, is operated alongside a previously commissioned ITC Michigan TMS, which was also delivered by ABB, at ITC Transmission's new Michigan headquarters in Novi.

ITC benefits from the continuity ABB provides in long term support agreements for the two systems. Another benefit for ITC has been ABB's reliable performance during project delivery, which was demonstrated by the on-time and on-budget delivery of the project.



ITC operates approximately 15,000 circuit miles of overhead and underground transmission lines.



ITC Transmission is in full prdocution with their second ABB Network Manager system.

The Network Manager system delivered to ITC Transmission is a complete SCADA/EMS including state-of-the-art, advanced power system applications, user interface with advanced visualization and situational awareness, and a fully integrated operator training simulator. Its distributed architecture provides for a highly reliable and seamless operation over multiple control centers with built-in business continuity and disaster recovery capabilities.

"ITC has been an important customer for ABB for many years, and we are proud of the teamwork that exists between our companies," said Salim Khan, Vice President and General Manager of Network Management. "ABB's ability to successfully implement advanced SCADA/EMS projects and provide innovative advanced applications continues to set ABB apart as a reliable partner for the utility industry as infrastructure and smart grid projects are rolled out."

Network Manager DMS selected by NV Energy

NV Energy to implement ABB's industry leading distribution management solution in northern Nevada

NV Energy recently placed an order with ABB for the industry leading Network Manager DMS to be implemented in NV Energy's northern Nevada operations in Reno, Nevada.

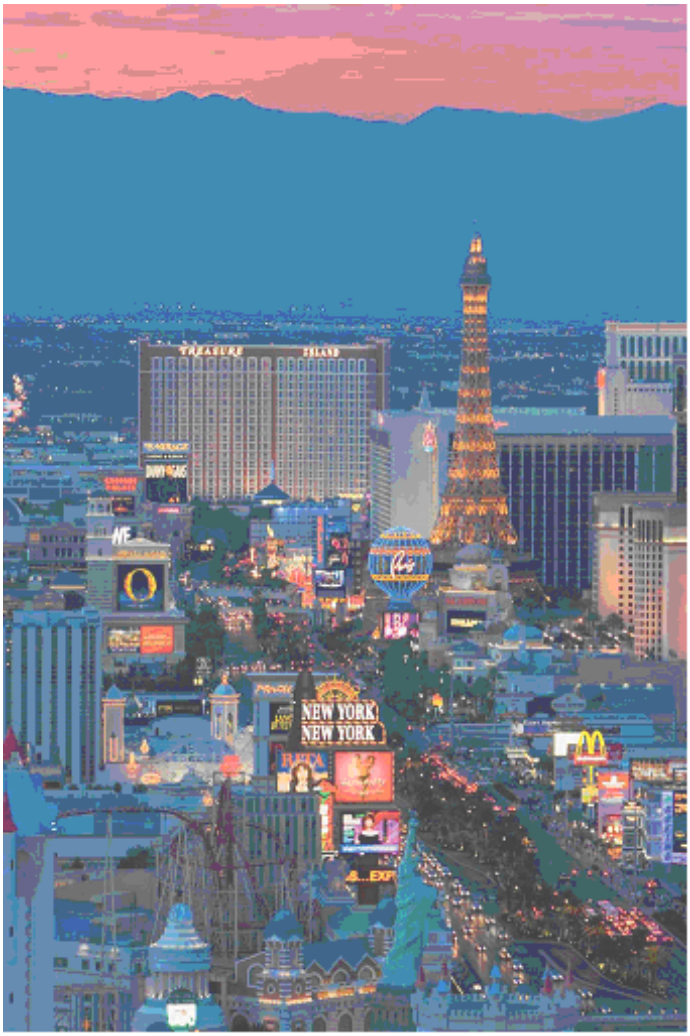
NV Energy has been using the Network Manager solution in southern Nevada operations in Las Vegas since 2001, which has helped improve system operations and outage response for over 800,000 customers. Expansion of the solution to northern Nevada will provide synergies and a common platform for distribution management across both its southern and northern Nevada territories, which currently serve approximately 1.2 million electric customers.

Reno, Nevada

Network Manager DMS is an operations management system that is designed to help electric distribution companies reduce operating and maintenance costs while enhancing customer service. It combines operational data, real-time communications, and advanced applications with a dispatch management interface to optimize performance through data sharing. Using Network Manager DMS, utilities can provide valuable, time critical information across the organization.

"We are pleased that NV Energy has chosen to expand the use of Network Manager DMS throughout their service territory," said Salim Khan, Vice President and General Manager of Network Management. "Network Manager DMS has a long history of providing distribution management and operations support to distribution companies, helping improve system performance, and increasing customer satisfaction."

NV Energy, Inc., with corporate headquarters in Las Vegas, has operations in northern and southern Nevada, and serves a 54,500-square-mile territory.



Las Vegas, Nevada

Network management for smart grids

Innovative operations centers to manage future distribution networks

Traditional power networks have been carefully managed at operations centers to ensure adequate power supplies are maintained despite peaks and troughs in demand. Each section of the grid has an operations center that conducts and coordinates various functions including system monitoring, control, crew administration and dispatch. It has been regarded conventionally as "the brain" of the power system, from which operations have been directed.

As distribution systems are gradually evolving into smart distribution systems, the operations centers that control them are evolving to take on new roles to manage such grids. The separate IT systems operating in these control centers are becoming more streamlined, communicating seamlessly to provide an integrated monitoring and management system. More advanced applications and analytical software are providing more sophisticated analyses and automated operations. The control systems of operations centers are not only helping to make the grid smarter but are also helping to improve support for decision makers responsible for operations, maintenance and planning. Such integrated operations centers are helping distribution organizations meet their goals despite ever increasing challenges.

Conventional monitoring and control systems for distribution networks have in the past been relatively low-tech. Wall boards displaying the system's status were commonplace. These boards could be covered with sticky notes, push-pins, and ad-hoc changes, which may have been difficult to monitor and inflexible. Paper based maps of the distribution circuits, which were often annotated manually and risked being out of date, were used to direct maintenance work on the system. Paper based switch orders were used to plan, execute and track scheduled switching on the system. Outage calls were received by operators, with little information to provide to customers about the outages. Paper based outage tickets were commonly used for tracking customer outages. Communications with field-based crews were conducted by radio. These crews had to supply their location to the operating centers, and the communication of switching, the placement of tags and other operations were made verbally.

This is not to say that distribution operations have stood still over time. As technology and business needs have changed so too have many distribution operations centers. Many Supervisory Control and Data Acquisition (SCADA) systems have been extended from the transmission system to include monitoring and control of medium voltage (MV) feeder breakers. In some cases, SCADA has been further extended out beyond the MV feeder circuit breaker to equipment such as reclosers, switches and capacitor switches.

	Separate IT systems	Incomplete real-time system status	Few advanced applications
Examples	Non-integrated systems for: ■ Customer information system ■ Geographic information system ■ Trouble calls ■ Crew management ■ Switch order management ■ AMI ■ SCADA ■ Mobile workforce management ■ Work management	Lack of: ■ Equipment loading information ■ Status of switches, voltage regulator taps, capacitor banks ■ Location of momentary faults on system ■ Status of distributed resources ■ Customer demand/load	Lack of applications for: ■ Fault location ■ Restoration switching analysis ■ Volt/var control ■ Distribution state estimation
Consequences	■ Inefficient work processes ■ Redundant and/or inaccurate data ■ Longer outage durations ■ Possible noncompliance of work processes with possible safety issues	■ Inefficient equipment utilization ■ Difficult to enable customers to connect distributed energy resources to grid ■ No understanding of automated operations on feeder	■ Longer outage durations ■ Inefficient use of crew hours ■ No chance to reduce customer demand through voltage control at peak times ■ Higher system losses ■ Increased customer complaints for voltage out of range

Deficiencies in today's distribution operations centers for grid management

Environmental sustainability and ways of limiting carbon emissions have led to increased interest in smart grids.

Modern computer based outage management systems (OMSs) utilizing connectivity models and graphical user interfaces have become more common. An OMS typically includes functions such as trouble call handling, outage analysis and prediction, crew management, and reliability reporting. At some distribution companies, an OMS can be utilized simultaneously by hundreds of users. It integrates information about customers, system status, and resources such as crews.

Status

Despite the progress that has been made, there are still fundamental issues that need to be addressed. The table provides examples and discusses the consequences of separate (non-inte-grated) IT systems, incomplete real-time system status and the lack of advanced applications in the operations of distribution organizations.

The case for change

Within the last few years, several external drivers have helped accelerate the development and expansion of applications for smart grid technology. Drivers for change include society and government, the business environment of distribution organizations and technology.

In many countries, legislation and regulatory initiatives have been targeted towards the modernization of the grid. Environmental sustainability and ways of limiting carbon emissions have led to increased interest in smart grids. The increasing costs of new power generation and transmission, both in terms of infrastructure and fuel costs, are also factors influencing technology change. Further drivers for the development and adoption of smart grid technology have been the public's interest to stabilize climate change through greater use of renewables and calls from utilities and governments for improved distributed generation and demand response. From a business perspective, however, distribution organizations are looking to smart grids to help them maintain or improve reliability, increase asset utilization, deal with aging infrastructure and help reduce the impact of knowledge loss as employees reach retirement age.

In many countries, legislation and regulatory initiatives have been targeted toward the modernization of the grid.

Technology has also been a great driver in smart grid development. Communication technology has strongly developed in the last decade. Today distribution companies have the choice between many different solutions. The communication can be based on a dedicated network owned by the distribution organization (eg, SCADA radio networks), or on third party infrastructure (eg, global system for mobile communications, or GSM, provider networks). Depending on various factors, like required availability and bandwidth, the distribution organization can select the appropriate technology. Whatever the choice, it is certain that additional two way communication in distribution networks will increase.

There are increasing numbers of distribution equipment with sensing, data processing, control, and communications on the feeder. Automation systems are becoming more common, with smart devices and appliances within a home network. The deployment of this technology will depend upon the development and unification of interoperability standards. The development of such standards is ubiquitous in the United States and Europe.

Automation systems are becoming more common, with smart devices and appliances within a home network.

Systems integration

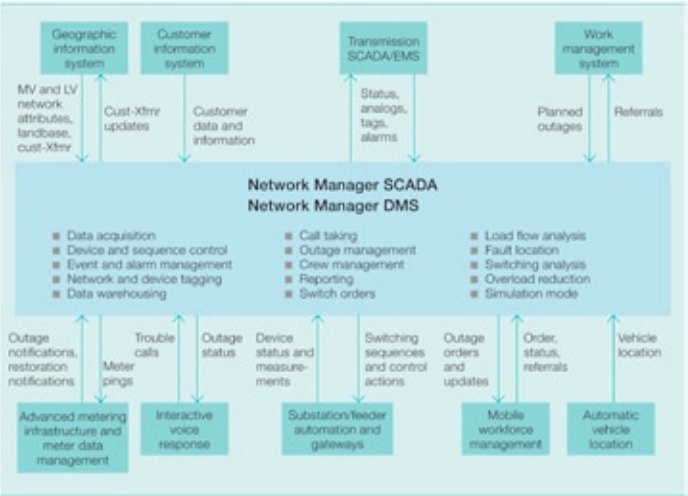
ABB is a leader in the development of smart grids around the world, and has invested time and resources to create the operations center systems that will control smart grids. Three important areas of systems integration are distribution management system (DMS) integration with SCADA, advance metering infrastructure (AMI) integration with the DMS, and the integration of data from substation gateways.

ABB has long been a leader in integrating SCADA at the distribution level with DMS applications. With the smart grid driving more distribution companies to install additional SCADA on the distribution system, ABB continues to improve its integration. Available functionality now includes the transfer of status/analog points from SCADA to the DMS; the sending of supervisory control and manual override commands from the DMS to the SCADA system; an integrated user interface running on the same PC operator console between the two systems; and integrated single sign-on for users.

The benefits of integrating SCADA with DMS include:

- Improved operations by close integration of DMS applications with distribution SCADA
- Increased operator efficiency with one system, eliminating the need to go to multiple systems with potentially different data
- Integrated security analysis for substation and circuit operations to check for tags in one area affecting operations in the other
- Streamlined login and authority management within one system
- Consolidated system support for DMS, OMS and distribution SCADA

Installation of AMI systems is rapidly increasing, and ABB is developing ways that distribution organizations can leverage AMI data for operational purposes. Interfaces between AMI/MDM (meter data management) and SCADA/DMS have been developed for meter status queries, outage notifications and restoration notifications. Benefits include reduced customer outage durations and more efficient use of field resources. The use of other AMI data in DMS applications, such as interval demand data and voltage violations, is being explored. This would provide additional benefits, such as improved knowledge of system loading and better voltage profiles throughout the system.



Systems integration for distribution-grid operations centers

DMS application	Functionality	Benefits
Unbalanced load flow analysis	Determination of the line currents and node voltages per phase for the entire distribution system, either online or offline in simulation mode	■ Improved system awareness ■ Higher asset utilization ■ Improved contingency planning
Load allocation and state estimation	Intelligent allocation of telemetered or historical measurements over the network to calculate estimated power flows, voltages, and limit violations based on real-time conditions	■ Improved load flow and state estimation calculations ■ Improved notification of overloaded equipment and voltage violations
Fault location	Identification of possible fault locations on system	■ Improved crew efficiencies in managing outages ■ Reduced customer average interruption duration index (CAIDI) and system average interruption duration index (SAIDI)
Restoration switching analysis	Evaluation of isolation and restoration switching schemes	■ Improved operator efficiencies during outages ■ Increased reliability
Distribution Volt/Var control	Monitoring and control of line capacitors, voltage regulators, and load tap changers (LTCs) to reduce peak load and system losses	■ Reduced customer demand at system peaks ■ Lower system losses ■ Improved voltage profiles
Line unloading	Computation and analysis of load transfer options, including overload reduction	■ Reduced thermal-mode failures ■ Longer equipment life due to reduced overloads ■ Higher asset utilization
Remote switching and restoration	Automatic feeder reconfiguration considering network operating conditions	■ Reduced CAIDI and SAIDI ■ Lower system losses

Functionality and benefits of advance applications

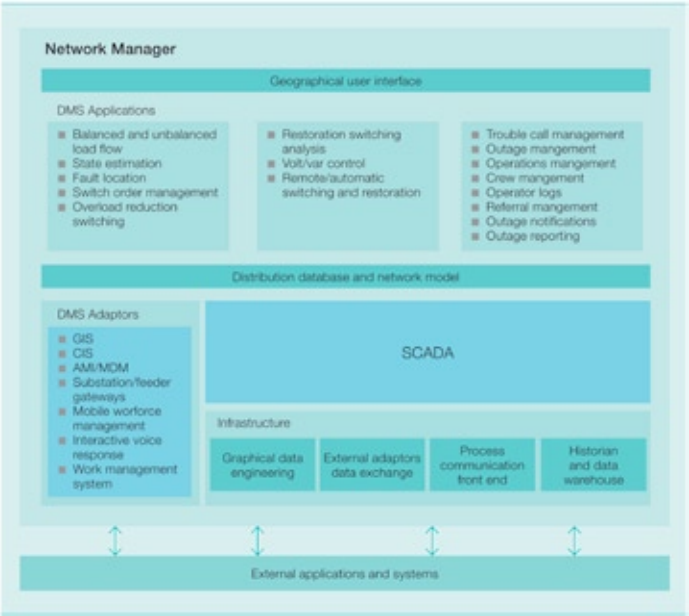
In addition, many organizations are increasing the amount of substation automation and substation gateways on their systems. This provides increased access to data in intelligent electronic devices (IEDs) that are installed in substations and distribution systems, many of which have communications capabilities. These include more intelligent recloser controls, switch controls, and voltage regulator controls. Integration of these systems with the DMS provides the benefit of decentralized local control at the substation/feeder level, while providing system optimization through the DMS at the system level. The integration of SCADA and DMS with other systems provides an integrated operations center for managing the smart grid.

ABB has long been a leader in integrating SCADA at the distribution level with DMS applications.

Advanced network applications

With its Network Manager™ platform, ABB is leading the distribution industry in the development of advanced applications for distribution system management. Advanced applications use the network model along with the monitoring of the network operating conditions to provide recommendations for optimal network operation. As shown in the table, advanced applications can provide solutions to many challenges that distribution organizations are facing today.

In many cases, distribution organizations choose to leave the operator in the decision loop so that the operator can oversee the system; however, as smart grids evolve, the desire to minimize human intervention will favor a closed loop or automated approach. In the future, the degree to which the system is automated will be a business decision for each distribution organization.



The architecture of a fully integrated distribution operations center

The operations center

The architecture of a fully integrated distribution operations center is shown above. DMS applications are utilized for the optimal management of the distribution systems with respect to equipment loading, efficiency, voltage control, work management, outage management, and reliability. The DMS applications utilize the distribution database and electrical network connectivity model. The network model is initially created using a one time data load from a geographic information system (GIS), and is periodically updated from the GIS using an incremental update process.

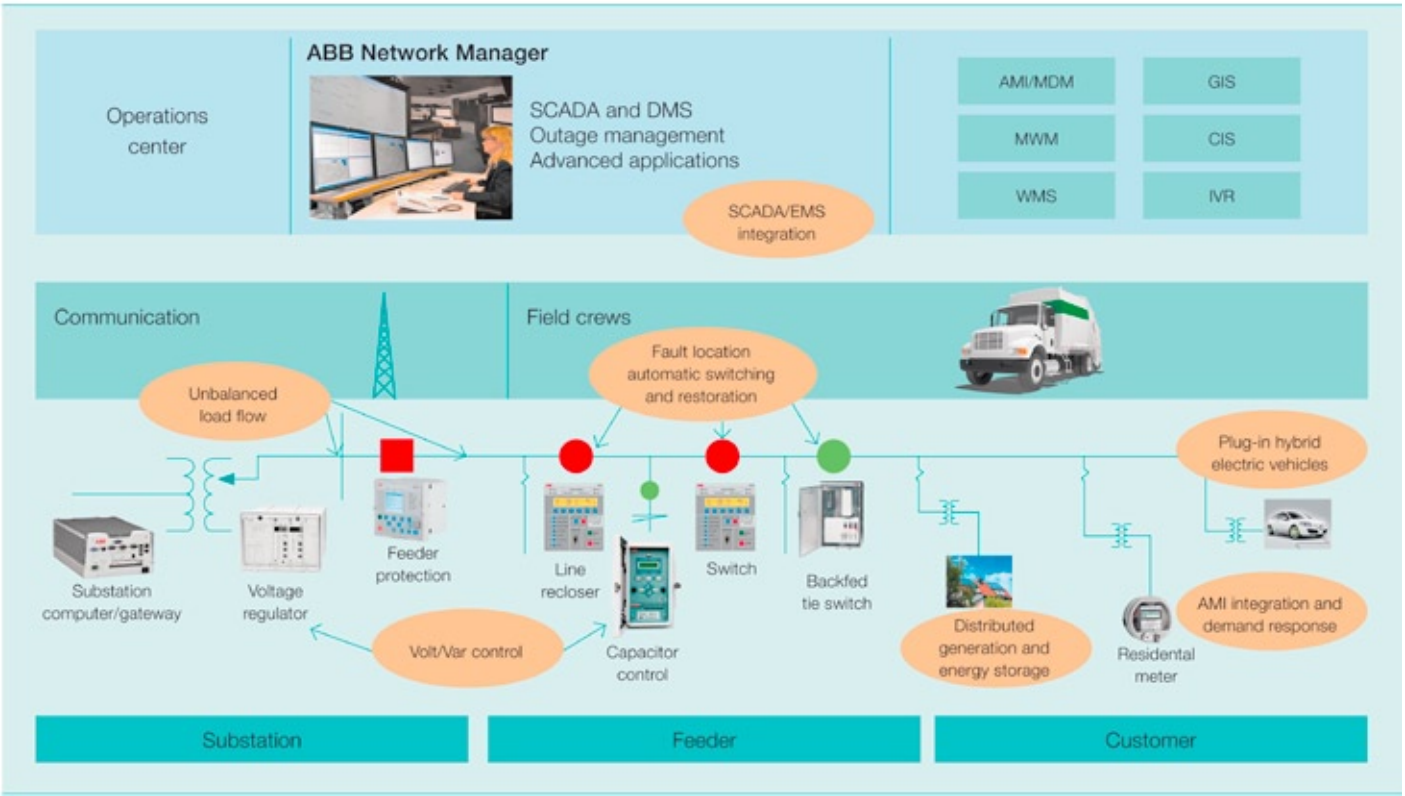
A key part of the integrated distribution control system is the integration of the different IT systems used in the operation of distribution systems. This includes the SCADA system as a key element of data collection and system control. The trend is for distribution companies to expand SCADA systems past the distribution substation and onto the feeders, providing improved situational awareness and control of the distribution system. Interfaces to other systems include AMI and MDM systems, and substation/feeder gateways and data concentrators. The architecture of how data is transmitted between field devices and the integrated operations center will vary among distribution organizations. There may even be several approaches within a single utility. Whatever the approach, such data transmission is critical for increased operational awareness.

Future operations center

The integrated operations center will be a key to the smart distribution grid. ABB continues to increase the functionality of operations centers to meet distribution organizations' technical and business requirements. A vision of the smart distribution grid utilizing an integrated distribution operations center is shown in.

In a general sense, the operation of distribution systems will become more complex. Additional amounts of distributed generation and energy storage will impact the magnitudes and directions of power flows on the system and may vary over time. Demand response, either controlled by the electricity provider or the consumer, will also impact power flows and voltage profiles. In addition, there is already an increasing trend to place additional intelligence in devices on the distribution system, such as intelligent electronic devices (IEDs), substation computers and gateways, sensors, and advanced meters. Some of these devices will result in additional local control actions, further increasing the complexity of distribution systems' operation.

Even in the presence of increasing amounts of decentralized intelligence and control, the integrated operations center will be a centralized way of overseeing and coordinating the entire system. It will not be practical or even desirable to transmit all data and information to centralized systems in the integrated control system. Instead, to ensure the optimal operation of the system, the systems in the integrated distribution operations center will only collect and act upon the particular data and information that is passed to it.



An integrated distribution operations center overseeing the distribution grid

Meeting the challenge

Smart distribution grids will require innovative operations centers for effective system management. ABB has been continuously working to define and develop integrated operations centers for smart distribution grids, including advanced integration of existing systems and the development of new applications. Smart grid operations will provide a comprehensive view of the distribution system, including system status and monitoring, control, outage response, planned work, optimal equipment loading, improved control over distributed generation, energy storage and demand response resources. The integrated distribution operations center will help distribution companies in their mission to meet the goals of customers, owners, employees and society.

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PEA Thailand representatives visit ABB RTU production site

Thailand's Provincial Electricity Authority (PEA) supplies electricity to 73 provinces, covering approximately 510,000 km2, and accounting for 99% of the country's total area.

ABB Germany is the product supplier to ABB Thailand, who in turn performs the engineering, assembly, testing, and commissioning of RTU560G as feeder RTUs (FRTUs) and Distributed I/O Modules (DIMs) for PEA substations. RTU560A is also delivered as a Central Processing Module (CPM) for PEA substations.

In July 2009, PEA sent a delegation to Germany as part of the PEA DDC2 Project, currently under execution. The PEA delegation had the chance to witness the factory in which the delivered RTU components are manufactured.

The visit's destination was the BMK factory in Augsburg, which is the production site of the 560CMU01 for the RTU560G. Twenty three representatives from PEA, six from Loxley Public Company Limited, and five from Sahamit Machinery Public Company Limited had the opportunity to see ABB's RTU manufacturing process and the quality processes applied.

PEA was impressed with ABB's manufacturing process, which meets our high quality standards. The visit also provided PEA, Loxley, and Sahamit Machinery with an outlook on ABB's involvement in Smart Grid applications such as the Meregio project in Germany. It also provided an opportunity to assure the customer that its investment in ABB RTUs is protected.

If you are interested in participating in a customer visit to an RTU production site please contact the RTU sales team at rtu-sales-support@de.abb.com

PEA Thailand visitors in Germany

RTU Newsletter now available

The RTU Global Feeder Factory (GFF) now provides a quarterly RTU newsletter. Two different versions of this document are being offered.

The RTU Customer Newsletter informs readers about the latest news regarding ABB's RTUs, projects, and events. This document is tailored to end customers and is forwarded by the local unit to customers.

The RTU Partner Newsletter is tailored to RTU partners. It informs readers about product and organizational news, and upcoming events. Project news, upgrade strategies and cost-saving tips for RTU configurations are also part of this publication. This newsletter is for internal use of partners only. Both newsletters are circulated quarterly. Quarters one and two of 2009 are already available, and the third quarter 2009 release is expected in September.

The RTU customer and partner newsletters are available at the RTU Information database.

Please contact us at rtu-sales-support@de.abb.com to be added to the RTU newsletter distribution list.

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