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Product Overview

Network Manager™ SCADA/EMS and SCADA/GMS

Manage your complex energy system processes and reduce your operating costs, while ensuring the required levels of cyber security.

As the leading supplier of electrical equipment and energy system solutions in the world, Ventyx has decades of experience in power system planning and operation. Our long-term commitment to control center IT solutions and energy know-how enhances our Customers' competitive strength and profitability.

Secure and Reliable Grid Operation

Network Manager SCADA/EMS/GMS is the right control center solution to manage your complex energy system processes and reduce your operating costs, while ensuring the required levels of cyber security. Network Manager SCADA/EMS/GMS is also an energy information system that provides reliable process information to all levels of decision makers in your organization.

Network Manager SCADA/EMS/GMS is an open and versatile system that conforms to all the relevant industry standards. It can be configured to meet the specific needs of each utility, allowing for simple integration with corporate information systems. It also provides a comprehensive set of tools for smooth system maintenance and expansion.

With Ventyx's solutions and support, our Utility Customers are able to increase profitability in both energy supply and business processes, improve network security and stability, minimize environmental impact and improve customer service.

Network Manager SCADA/EMS/GMS facilitates an efficient, secure and reliable grid operation, not only for managing today's power networks but also for tomorrow's Smart Grids, with rapidly expanding sources of renewable energy.

Real-time Power System Operation

The primary objectives in power system operation are security, quality, reliability and economy. To meet these objectives, Network Manager SCADA/EMS/GMS provides a comprehensive set of monitoring and control functions and an advanced set of power applications with state-of-the-art modeling techniques and solution algorithms. The Ventyx power applications have been deployed on numerous control centers around the world, some with over 12,000 buses and 1,000 generators.

The philosophy behind the Network Manager SCADA/EMS/GMS functionality is to provide both the tools and the incentives to increase efficiency and optimize the power system operation. To relieve the Operators from

tedious and repetitive tasks, some functions like Load Shedding and Supervisory Control Sequences can be fully automated. This creates the time and incentives to use the advanced applications in the most effective manner.

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Network Manager SCADA/EMS/GMS is designed to meet the high availability and performance requirements of real-time power system operations. Network Manager SCADA/EMS/GMS comprises a set of components that can be combined and implemented in a flexible way to meet the requirements of each individual utility. The system also includes real-time functions to assess the performance of the power system operation, for instance, transmission losses or the performance of Automatic Generation Control.

Network Manager creates a control center environment that encourages learning and continuous improvements in operational performance.

Transmission Management and Wide Area Monitoring

Managing the Transmission Grid involves planning, monitoring and controlling the available assets to achieve and maintain an optimal operating state. Network Manager SCADA/EMS provides a modern platform and advanced applications for the analysis and optimization of day-to-day transmission operations.

Network Manager SCADA/EMS also includes an integrated Wide Area Monitoring function (WAMS) that offers robust and scalable phasor data concentration and signal processing, a time series recording, and optional control of FACTS devices.

WAMS recordings for post fault analysis provide additional insights into the dynamic response of the power system. This provides new opportunities for benchmarking of transmission planning models, leading to improved planning and utilization of the transmission system.

The Major benefits of the Network Manager SCADA/EMS system for transmission operations include:

- Optimal utilization of the transmission network assets
- Enhanced network security and continuous monitoring of the system stability, with early warning of incipient operating conditions that could lead to widespread blackout
- Advanced visualization and situational awareness for operators, leading to enhanced grid operation
- Higher quality of supply

Generation Management

Managing Power Generation is all about optimizing the use of the available resources while meeting regulatory standards and contractual requirements. Network Manager SCADA/GMS performs real-time dispatch of the generation resources, including renewables, while minimizing production costs and keeping adequate levels of reserves. Optional modules are available for wholesale trading and minimization of financial risks in deregulated markets.

The major benefits of the Network Manager SCADA/GMS system for generation operations include:

- Optimal scheduling, dispatch and control of generation resources, subject to operational and environmental constraints
- Co-optimization of generation reserves
- Support for emission constraints
- Compliance with the latest reliability standards from NERC and UCTE
- Accurate weather-adaptive load forecasting
- Support for multiple markets and control areas, inhierarchical configurations and across multiple time zones
- Interfaces with Market Operations

Cyber Security

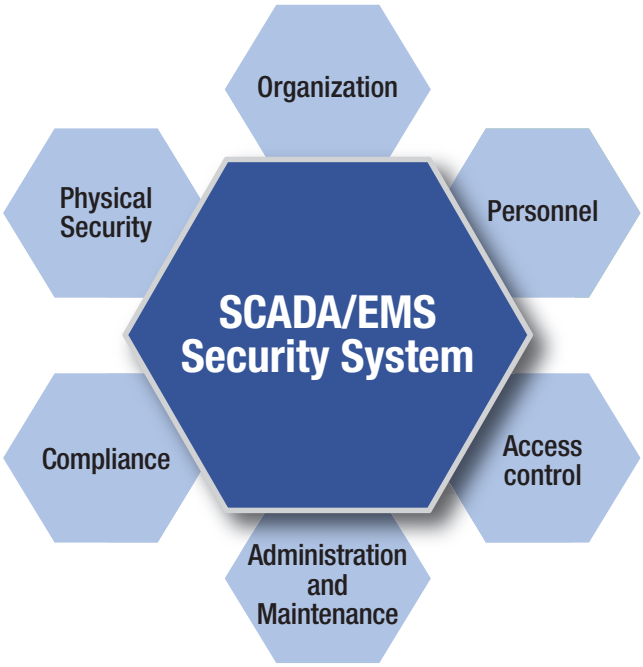
The security of SCADA and EMS/DMS/GMS systems in particular have become increasingly critical.

Network manager has been designed in conformance with security standards – CIP 002-009, ISO 17799, and FDCC. Strong authentication (Kerboros, 2-factor), Role Based Access Control, network security zones & encryption, and security hardening (ports/services lockdown, static host/ARP, patching, full source code review) are some of the basic security building blocks for the product. In addition penetration testing has been performed internally and externally by the Idaho National Lab.

Through our partnership with Industrial Defender, we can provide an advanced compliance automation solution with labor saving features:

- Automates data collection, analysis and archiving
- Consolidates event, log and configuration information into a centralized permanent data repository
- Provides historical reports needed for compliance audits

Ventyx helps customers meet their system security needs by offering integrated Network Manager security features, professional services and integration with third party solutions.



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Ventyx, an ABB company, is the world's leading supplier of enterprise software and services for essential industries such as energy, mining, public infrastructure and transportation. Ventyx solutions bridge the gap between information technologies (IT) and operational technologies (OT), enabling clients to make faster, better-informed decisions in both daily operations and long-term planning strategies.

Some of the world's largest private and public enterprises rely on Ventyx solutions to minimize risk, enhance operational and financial performance, and execute the right strategies for the future.

To learn more about Ventyx solutions visit **www.ventyx.com** or contact a Ventyx sales representative today.