

Product Overview

Network Manager™ MMS



The Ventyx Market Management System solution for modern electricity markets.

What is Network Manager MMS?

Network Manager MMS includes a set of advanced applications and a modern IT infrastructure that supports all market related functions performed by Market/System operators including Independent System Operators (ISO), Regional Transmission Organizations (RTO), and Transmission System Operators (TSO).

Network Manager MMS Coverage

Market clearing and congestion management for nodal and zonal markets:

- Forward, day-ahead, week-ahead
- Real-time
- Balancing
- Intraday

Network Manager MMS Includes:

Advanced applications:

- Security Constrained Unit Commitment - providing field-proven MIP and LR methodologies
- Security Constrained Economic Dispatch
- Smart Grid features (demand response, renewables, etc)

Market trading infrastructure:

- Wholesale trading - energy, ancillary services, transmission rights, capacity
- Participant registration
- Market rule administration
- Real-time publishing
- Dispatch messaging

ENTSO-E Systems and protocols

Enterprise integration/system services

Market surveillance

Meter data acquisition

Commercial reconciliation (Settlements, prudential risk, accounting, billing)

Stability Through Adaptation

Network Manager MMS provides the advantage of the flexibility and scalability required by market/system operators around the world. The system is built on open architecture and industry standards, with in-built flexibility to support various market designs and environments.

Network Manager™ MMS readily adapts to changing market rules and business practices with minimal rework and near-zero downtime. The system runs on various configurations of hardware and operating systems, including virtualized environments and the enterprise cloud.

In addition, it utilizes established third-party products. This flexibility offers our customers the lowest total cost of ownership.

Network Manager MMS is built on a modern and open enterprise architecture to provide maximum:

- Flexibility
- Availability
- Performance
- Interoperability
- Security
- Scalability
- Resilience
- Maintainability

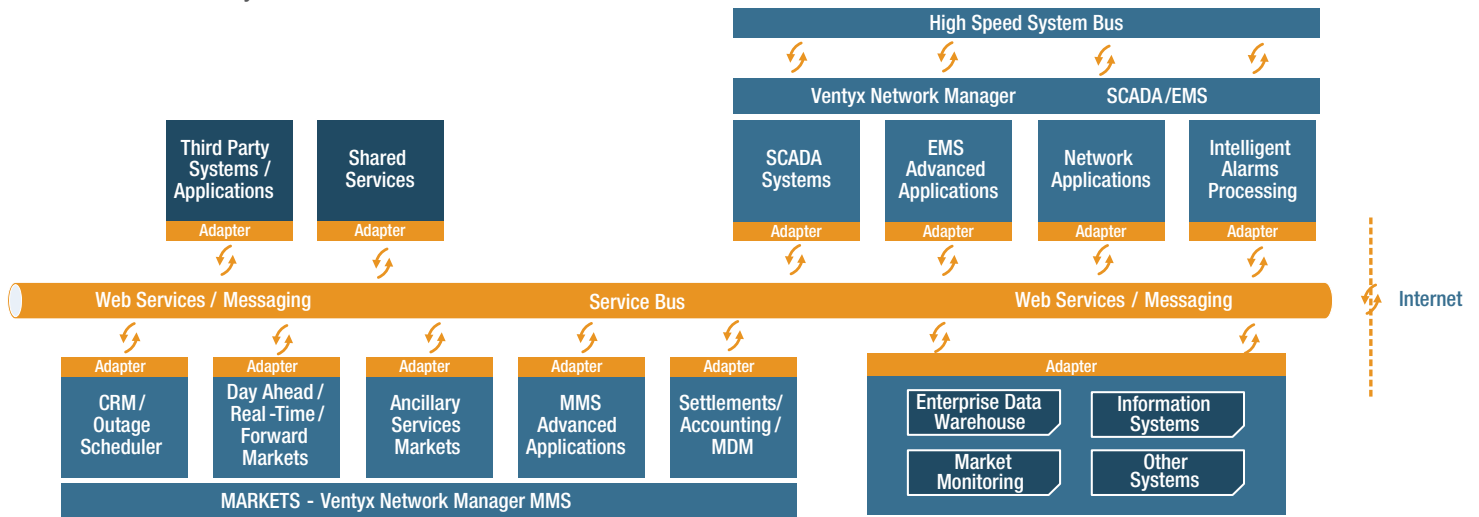
Proven Technology Solutions

Network Manager MMS technology solutions include features such as detailed and advanced models for transmission, combined cycle plants, reserve requirements, unit start-ups and shut-downs, ramping, storage and renewable resources. The solution includes both MIP and LR optimization

on methodologies deployed at some of the largest and most sophisticated markets around the world. It is built to meet stringent performance criteria, including support for extensive virtual bidding.

The system includes a secure Web-engineered operator interface that provides a rich set of user-friendly capabilities for both dynamic visualization of information and operator interaction.

The system has a modular and scalable design that meets modern architectural alignments. It leverages the use of service oriented architecture like web services, messaging and CIM/XML technologies.



Enterprise Integration

Network Manager MMS is available fully integrated with Network Manager SCADA/EMS. In addition, the system can be integrated with any other supplier's SCADA/EMS, Settlement/Financial package and other RTO/ISO systems. Various configurations are already operational at many customer sites. Such versatility allows our customers to draw on our state-of-the-art technology while building a complete solution that fits their unique needs.

Network Manager MMS supports the CIGRE/VLPGO Enterprise Integration model.

Innovation

In many cases, we have had the challenge of developing IT solutions where none had previously existed. This spirit of innovation has produced a number of firsts in the industry. This has included pioneering work such as incorporating Phase Shifters within Dispatch and Scheduling applications. In addition, the system implemented at New York Independent System Operator (NYISO) was the first to simultaneously optimize energy and ancillary services in calculating market clearing prices.

This capability was subsequently included in FERC's initial Standard Market Design specifications, and the later Wholesale Power Market Platform.

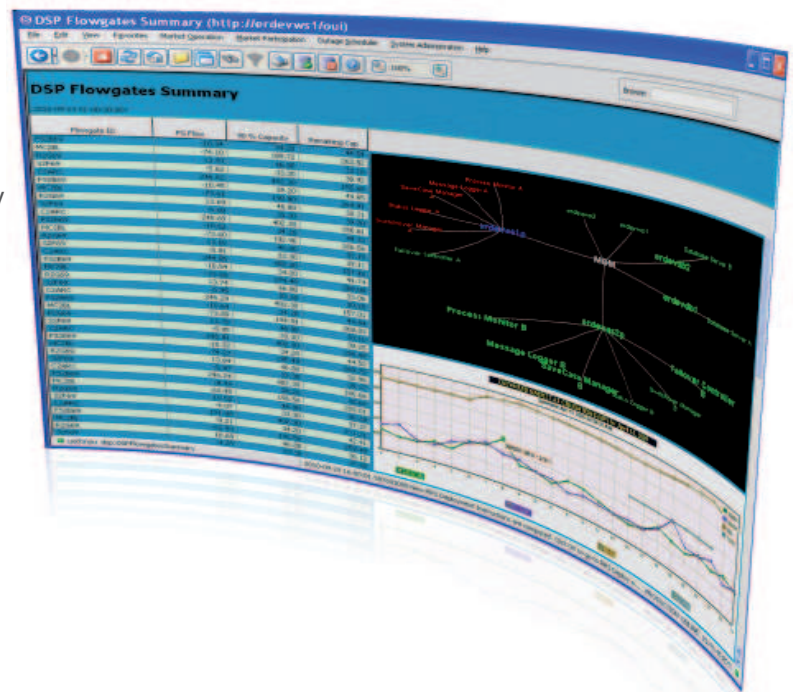
Smart Grid Features

Network Manager MMS fulfills realization of Smart Grid by providing support for Demand Response, Renewable Resources, Storage and other initiatives.

Network Manager MMS Benefits

Ventyx, an ABB company, has established itself as the global leader in MMS implementations by delivering tangible benefits to ISO/RTO's worldwide such as:

- Advanced functionality, proven technologies
- Lowest total cost of ownership
- Easy-to-use Systems
- Fastest time-to-market



www.ventyx.com

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.