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**Vendors Panel - Recent developments in ABB software technology for control center and market applications**

**Jacek Bujak,**  
ABB Enterprise Software

**Abstract**

ABB is constantly enhancing its Network Manager SCADA/EMS/GMS/MMS system. The functionality and solutions available in Network Manager reflect the ABB experience on the delivery of several hundreds of large SCADA systems, and a substantial number of market management solutions to the global electricity utility industry, over the past 20 years. Large TSOs and ISOs in Europe and US rely on Network Manager in operating their transmission networks and managing their electricity markets. Network Manager is also used for centralized generation dispatch and control at leading generation companies, operating under various national regulatory and trading environments.

ABB has been a pioneer in providing leading market management solutions for various market designs around the globe. ABB's solution used in one of the biggest markets in US is the only system of its kind which is capable of co-optimizing energy, ancillary services and congestion revenue rights. Another key feature of the system is its capability to comprehensively model combined cycle plants in its scheduling optimization. Furthermore, the advanced balancing mechanism that has been developed for a big European electricity market is designed to simplify their operations while enabling efficient and secure utilization of the transmission and other resources. The system meets all required ENTSO-E standards and is expected to facilitate substantial reduction of the TSO's balancing energy costs.

Network Manager is one of the core offerings from ABB Enterprise Software - the ABB company which provides industry leading software and deep domain expertise to help the world's most asset intensive industries such as energy, utilities and mining solve their biggest challenges, from plant level, to regional network scale, to global fleet-wide operations.

The presentation covers some of the latest innovations introduced in Network Manager to advance SCADA/EMS/MMS functionality and address the following requirements and challenges of tomorrow's smart grid:

- continuous evolution of electricity markets resulting in changes to main industry standards such as ENTSO-E, NERC, IEC and CIM standards, and requiring subsequent modifications of the control center software to achieve full regulatory compliance
- introduction of intermittent generation resources, with large wind parks inland or off-shore
- necessity for detailed modeling of protection schemes and devices to increase accuracy of load flow and security analysis calculations
- growing need for realistic operator training and power system studies using advanced training simulators
- increased requirements on security and efficiency of power system operation

- improved quality of network models to be shared between TSOs and DSOs
- emergence of DC-grids