

Network management



ABB Technology Guide

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What is network management?

Network management systems monitor and control the electricity network to keep power flowing and to preserve the balance between generation and consumption. They are the brain and central nervous system of the network and are known in the industry as SCADA, or systems control and data acquisition.



The background and technology

The roots of power control go back to the 1920s when ABB supplied its first remote control system for a power plant. It was not until the 1960s and the advent of computerized process control that modern power network control systems as we know them today became possible.

ABB has been at the forefront of developing this technology over the past 40 years and has delivered more network management systems than any other company.

In a SCADA installation, meters collect information from hundreds of thousands of data points in national and regional power networks and feed it into a computer system for storage and analysis.

Network management and energy efficiency

Network management is an important tool in reducing losses as it enables utilities to monitor and control their entire transmission and distribution networks from a single control room and in real time.

Armed with the data collected, utilities can perform network modeling and simulate power outages, helping them to devise the safest and most efficient way of operating their network. Network losses are minimized by controlling the voltage level in the transmission grid.

Network management enables immediate action to be taken to restore power if outages occur, and allows load shedding in a systematic manner to avoid grid collapse and complete black out. The immediate benefits include increased network uptime and optimal resource allocation.

ABB's SCADA system is called Network Manager and consists of 14 different software components that can be combined to meet the needs of a variety of customers including small municipalities, distribution companies serving big cities, countrywide transmission systems and industries and railways.

ABB installed the first network management systems for urban power distribution networks in India as part of a nationwide effort to stem losses. ABB was also chosen in 2003 to supply China's first energy management and power trading system for East China Electrical Power Group Corporation.



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