ABB ABILITY™ NETWORK MANAGER X

Advanced Distribution Management System
Operational confidence.
ABB Ability Network Manager X

Industry challenges

The continued rise in renewable distributed generation and the prosumer has made the distribution grid more complex to operate. This has created a need for increased visibility into the grid. Advanced network applications that were only found at the transmission level (state estimation, load flow, volt/VAR optimisation, etc.) now need to be extended to the distribution network, to provide the operators with the situational awareness required to manage such a large and complicated system.
Solution

ABB Ability™ Network Manager X is a real-time system for managing operations in a distribution control centre. It provides monitoring and control, network analysis, network optimisation and outage management capabilities in an integrated software platform, developed to meet the evolving needs of distribution operators.

A key component of the distribution control room, Network Manager X enables the efficient management of medium- and low-voltage distribution networks in a single unified environment.

Benefits

• A common working environment provides a seamless workflow for control room staff and increased operational awareness
• A single network model that is easy to maintain
• Advanced data engineering tools ensure higher data quality with easier data migration and integration
• A full suite of network applications including distribution state estimation, FLISR (fault location, isolation & system restoration), DERMS (distributed energy resource management system) and VVO (volt/VAR optimisation)
• Advanced switching management supports complex automatic switching for planned and unplanned events
• Integrated analytics solution provides insight to all levels of the organisation
The heart of the distribution control room

- **SCADA**
  - High performance, availability and cyber security
  - Fully redundant, supports multiple redundant schemas
  - Multi-site configuration, seamless failover with no loss of data
  - Distributed architecture
  - Integrated historian
  - Centralised database maintenance
  - Easy to implement, deploy and maintain
  - Unmatched interoperability with external adapters and data exchange interfaces

- **Network applications**
  Full suite of distribution network applications including:
  - Distribution state estimation
  - Distribution load flow
  - Volt-VAR optimisation (VVO)
  - Short circuit analysis
  - Optimal feeder reconfiguration
  - Fault location, isolation and service restoration (FLISR)
Outage management system (OMS)
- Advanced planned and unplanned switching management
- Improve crew efficiencies during outages and reduce CAIDI and SAIDI with:
  - Trouble call management and outage prediction
  - Crew and referral management
- Integrated outage and reliability reporting tool provides real-time and event-driven reporting
- Provides outage information for consumer-facing websites and mobile apps
- Operations management dashboard provides current and historical view of the outage restoration process to enable tactical and strategic decision making

Distributed energy resource management system (DERMS)
- Supports active power management and volt/VAR optimisation of millions of DERs
- Provides insights to DER events for monitoring and control of assets downstream of the substation and behind the meter
- Maintains grid reliability and performance for significantly reduced voltage excursions and higher network stability
- Significantly increase network hosting capacity for DERs to achieve regulatory targets for renewable generation, with minimal network investments

DERMS registration
- Collect and store installation data of small-scale DERs for communication, control, forecasting and optimisation
- Easy device registration from built-in catalog that includes smart inverters, solar panels, batteries, etc.
- Display details of individual DER Installations, including electrical parameters, configuration of the entire installation and devices installed

DERMS forecasting
- Provide distribution operators with visibility and information on DERs below the substation and behind the meter
- High quality forecasts of true demand and DER generation using machine learning algorithms such as neural networks
- Use AMI data to generate accurate forecasts, which are used by advanced power applications

Analytics
- Integrated outage and reliability reporting tool provides real-time and event-driven reporting
- Provides outage information and maps for consumer-facing websites and mobile apps
- Operations management dashboard provides current and historical view of the outage restoration process to enable tactical and strategic decision making
- KPIs and IEEE reliability indices
Unmatched interoperability

ABB Ability Network Manager X makes it easy to integrate both ABB solutions and third party data sources via common data exchange interfaces and external adapters.
Have absolute confidence in your system with ABB.