Voltage Analysis

Landis+Gyr
manage energy better

Maximizing the Benefits of AMI Investments by Presenting a Geospatial Display of Historic and Real-time Voltages

Overview

As distribution systems become more complex, due to feeder length, distributed energy resources, and transforming loads, grid planners and operators are challenged with ensuring the delivery of high-quality power to all points on their distribution systems.

Landis+Gyr's Voltage Analysis application allows utilities to maximize the benefits of AMI investments by presenting a geospatial display of historic and real-time voltages. Utility system planners, engineers, and customer service personnel can leverage the visualization tools and interactive drill-down capabilities to quickly and effectively assess voltage profiles along a feeder and identify voltage conditions outside of target ranges. The application enables utilities to proactively correct anomalies, avoid power quality issues, minimize customer complaints and reduce field effort by providing more accurate guidance to crews.

Additionally, the application uses the historical voltage data to recommend bellwether meters for each distribution circuit and then interfaces with the AMI head-end systems to reconfigure meters, giving operators updated voltage monitoring as changes on the system occur.

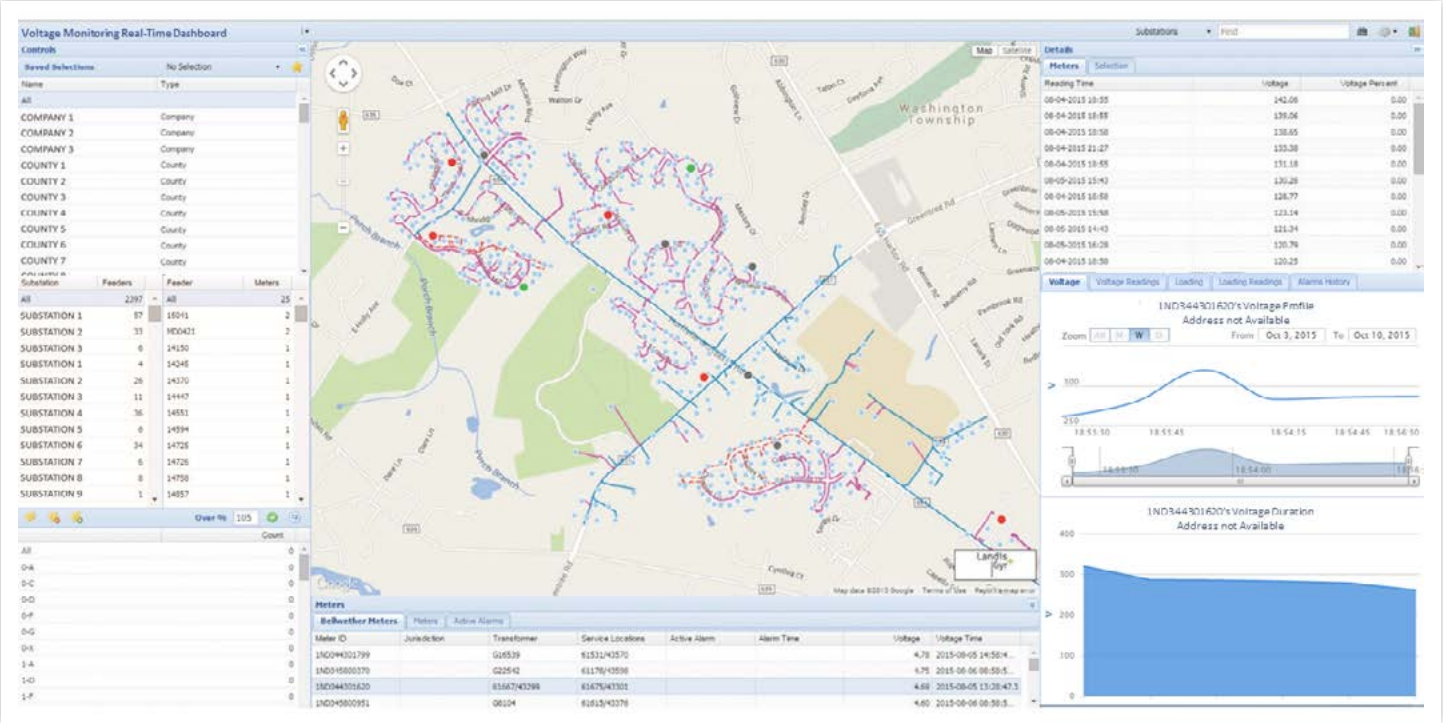
By leveraging bellwether meter readings (5–15 minute intervals), the application provides operators with a system-wide voltage analysis that monitors and reports based on real-time network measurements—identifying areas where voltages violate utility and regulatory limits. The application allows gird operators to monitor voltages on a 24x7 basis and proactively notifies grid operators of power quality issues by raising alarms and sending notifications.

The browser-based, dynamic user interface offers exportable reports and geospatial visualization of the full distribution connectivity model and grid assets by utilizing Google Mapping service. The database and analytical capabilities allow interactive, color-coded geographic display of all individual system components. The fully interactive drill-down functionality provides detailed data retrieval and display for individual substations, feeders, distribution transformers, and meters.

FEATURES & BENEFITS:
Why Landis+Gyr makes a difference.

- System-wide visualization of historical voltage and identification of grid assets that consistently read over and over voltages using both measured and calculated voltage values
- Improve power quality through identification of voltage anomalies, expediting troubleshooting and reducing customer complaints
- Monitor sudden changes in voltage as indicators of system problems due to equipment malfunction, load, or distributed resources
- Identify voltage changes that are a precursor to asset failure
- Support CVR, DVR, or Voltage Management programs
- Validate emergency switching plans through real-time verification of impacts on voltage levels

Advanced Grid Analytics: **Voltage Analysis**



Sample Screenshot: Voltage Monitoring Application – limit violations

Platform

The Voltage Analysis application utilizes Landis+Gyr's Advanced Grid Analytics platform that enables utilities to leverage data integration, visualization and advanced algorithms for multiple analysis and business cases. With adaptive, modular functionality, the platform and data can be utilized to support evolving utility needs, leveraging economies of scale and eliminating data silos and the need to manage multiple vendor systems.

Each application can be deployed individually or as part of an enterprise solution. Flexible deployment options ensure that the benefits of the Advanced Grid Analytics platform is quickly achievable and easily accessible for utilities of any size, by deploying the platform within the utility's own infrastructure, hosted in the cloud or delivered as a service offering.

KEY PRODUCT FUNCTIONALITY

- Visualize historical voltages measured from meters and real-time circuit voltage profiles
- Identification and proactive notifications to grid operators of voltage and power quality issues
- Complete system-wide analysis based on real-time network measurements from bellwether meters
- Robust reports and Google Maps integration
- Licensed, hosted, or service-based delivery options

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