



Voltage Analysis

Itron® Eyva™ Grid Reliability

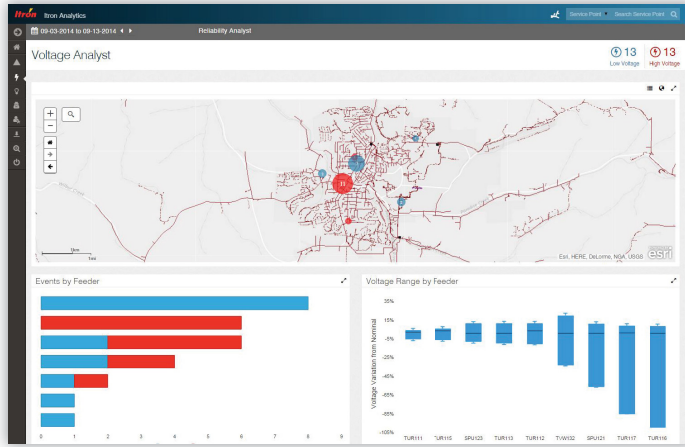
Ensuring power quality is becoming an increasingly critical business challenge throughout the utility industry. Your customers' needs are changing, distributed generation is more and more prevalent and utility-owned alternative energy resources are growing more diverse by type and geographic location. This new energy landscape and other factors are driving you toward a more proactive approach to voltage management to ensure the most efficient delivery over your networks while providing your customers with the power quality they require in an increasingly electricity-intensive economy.

Voltage Analysis, part of the Itron® Eyva™ outcomes portfolio, precisely monitors voltage at every delivery point in the system and presents the data and analysis within the context of your distribution network. This enables analysts to evaluate and understand the impacts of the multitude of variables affecting voltage levels throughout the grid. Identifying trends and developing system improvements with a holistic approach using measured data provides a much more proactive method, rather than relying solely on system models or reacting to customer complaints.

Voltage Analysis provides your analysts with a clear view of voltage levels throughout the grid under all load conditions, network configurations and equipment settings. This enables proactive, condition-based decision making with detailed measurements at a scale previously unattainable.

WITH VOLTAGE ANALYSIS, YOU BENEFIT BY:

- » Providing direct access to precise voltage measurements at all metered points in the delivery network
- » Alerting analysts to voltage levels outside of thresholds to enable action prior to customer complaints or equipment damage
- » Validating voltage problems prior to rolling trucks or other actions
- » Quickly differentiating isolated incidents from systemic voltage trends
- » Identifying problem areas and CVR/VVO opportunities to improve efficiency
- » Monitoring and fine-tuning VVO/CVR for optimal performance and validation
- » Isolating problem sources from low primary voltage to transformer loading or secondary service
- » Optimally managing the collection, storage and presentation of voltage data in conjunction with an AMI network



Voltage Analysis Dashboard

FEATURES AND BENEFITS

Voltage Analysis introduces a modern and intuitive web-based user interface that helps engineers see current and historic conditions and issues in their area.

Dashboard View

Voltage Analysis includes dashboard views that offer:

- » Quick summary information of voltage anomalies and feeder operating voltages by service territory, geographic area or distribution circuit
- » Identification of worst-performing feeders and troubleshooting tools to investigate
- » Geospatial mapping of service point voltages on each feeder over time
- » Voltage profiles along each feeder, highlighting areas with significant voltage deterioration
- » Voltage operating bounds on each feeder over time, indicating periods outside of target ranges
- » List of endpoints that experienced high- or low-voltage events with summary data

Custom Query Tool

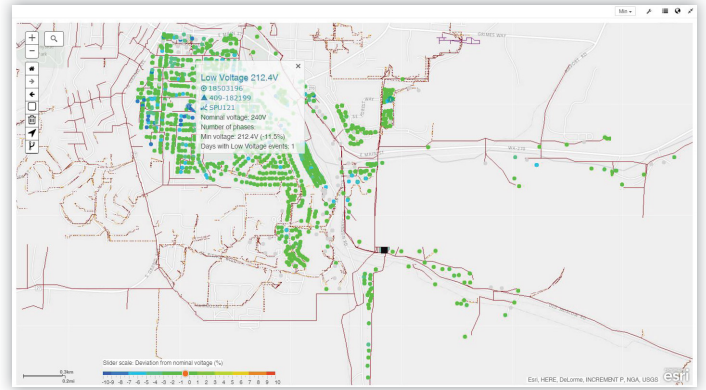
Voltage Analysis includes an intuitive and easy-to-use query tool that offers:

- » Creation of simple searches based on service point ID or other variables
- » Creation of more complex searches based multiple combinations of attributes
- » Geospatial view of search results
- » Tabular details of results displayed in a grid
- » Quick links from map or grid to service point detail view and measurements

Service Point Detail View

Voltage Analysis includes a Service Point Detail view that offers:

- » Map view of the service point with links to others on the distribution transformer
- » Graphical views and export of load profile measurements
- » Graphical views and export of voltage measurements
- » Tabular views of meter device events and analytic business events at the location



Map View Showing Service Points on a Distribution Circuit, Color-Coded by Voltage Level

Interactive Mapping

Understanding the state of your distribution grid requires spatial awareness of issues. Our Grid Reliability outcomes provide integrated mapping and interactive mapping features that empower operators to customize maps to the investigation needs of the moment. Using ESRI® technology, Grid Reliability incorporates maps into every view, allowing utilities to utilize existing GIS infrastructure and map layer assets. Included in our mapping features are:

- » Service point, transformer and substation representation with informative data popups
- » Relationships between transformers and service points using network connectivity lines
- » Tools to select service points to receive summary load information or update results
- » Interactive map buttons, display layers and slider controls allow operators to customize how the data is filtered and represented geospatially
- » Swappable base maps let utilities and AMI operators pick the mapping imagery that makes the most sense for them financially and operationally



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