OVERVIEW

GridEye System Planning uses monitoring statistics to analyze the existing situation of the network and its assets. This application allows the system operator to determine additional generation and consumption size which can be safely added at every node and to estimate potential asset aging and their expected end-of-life based on short time overload.

TODAY’S CHALLENGES

- Impact of additional generation or load is not known in advance
- Without physical measurements, the only way to safe grid operation is simulation and over-sizing
- Grid reinforcement budgets are becoming more limited
- Lack of information about what an optimal storage solution would be
- Replacement prioritization with big numbers of assets
- Due to lack of information, assets are replaced after nominal age rather than at end-of-life
- Run-to-fall asset strategies result in a decrease of network security

NETWORK PLANNING

GridEye System Planning is based on GridEye measurements and its statistics. At first, the existing network situation is analyzed to identify critical points of the grid from a voltage and loading perspective.

Based on these statistics, the maximum consumption and generation that can be securely added at every node is determined. The network planning application allows a system operator to evaluate the value of alternative solutions, including:

- upgrade of network infrastructure
- acceptance of a certain overloading risk
- deployment of GridEye Optimal Control

Transformer is allowed to be operated up to 120% of its nominal capacity

Maximum generation and consumption that can be added at every node
ENERGY STORAGE SITING AND SIZING

Energy Storage Systems (ESS) provide promising technology for energy management and network control. GridEye System Planning allows identification of the optimal size and location of ESSs in order to take maximum techno-economic advantages from the investment.

ASSET MANAGEMENT

The asset management application uses GridEye measurements to automatically calculate asset aging due to normal operation and to estimate the expected end-of-life.

GridEye measurements are not only used to determine the status of the asset (i.e., failure probability), but also to identify the importance of the asset (i.e., impact of failure). This peculiarity enables an automated risk-based asset management, which is very efficient to support asset management decisions and to decrease the cost and complexity. Furthermore, it can perform informed decisions regarding time-to-repair, replace, retire, and replacement sizing of the assets. It consequently results in the reduction of the costs associated to asset management and also in the improvement of the quality of service.

HOW GRIDYE CAN HELP YOU

With GridEye System Planning, you have an important decision support system based on physical measurements of your network. It enables you to:

- determine additional consumption and/or production that can be added at every node without jeopardizing the technically secure operation of the grid
- evaluate the value of several alternative solutions for network planning purposes
- determine the optimal size and site of storage systems
- automatically determine the status and importance of assets and enable risk-based asset management

WHAT YOU CAN GET OUT OF IT

- Avoid or postpone cable and transformer reinforcements. By avoiding a $10,000 transformer replacement, GridEye hardware pays off up to 5 times.
- Providing information about maximum acceptable additional generation or consumption. Manpower needed to perform this analysis is typically decreased by up to 90%.
- Increase duration of asset utilization without endangering the network security.