Intelligent Feeder Automation
Fault Location Isolation and System Restoration (FLISR)
Leverage communication networks to advance self-healing power networks

With greater pressure from regulators for utilities to improve performance against metrics such as Customer Average Interruption Duration Index (CAIDI), the need to deploy self-healing distribution networks has increased. A key element to achieve a more resilient delivery is the use of intelligent switches which detect and isolate faults rapidly and quickly restore power to unaffected segments of the network from alternative sources. Although classical loop automation schemes have been around for some time, the addition of networks to allow peer device communication brings a new dimension to creating an effective, safe, and rapid loop automation scheme.

Schneider Electric, a world-leading supplier of intelligent controllers, switches, and reclosers, has successfully tested and demonstrated the efficacy of this next level of feeder automation with CISCO Connected Grid Routers (CGR). Many utilities are deploying this solution as part of the Field Area Network (FAN) solution. The use of secure and reliable peer-to-peer communications now enable these switches to execute strategies that eliminate customer outages associated with distribution segments that do not have fault and isolates faulted segments to improve restoration efforts.

The addition of communications also facilitates migration to a hierarchical approach to support a centralized control philosophy, aligning with the adoption of Advanced Distribution Management Systems (ADMS).

Make the most of your energy™
Benefits of Schneider Electric’s Intelligent Loop Automation

- Improves reliability and resiliency of the electric network, along with customer service
- Automatically coordinates switching schemes on the distribution network
- Intelligent switching logic and fast device response with peer-to-peer communications to minimize outages
- Minimizes possibility of energizing faulted network segments, extending the life of field assets
- Safely operates network switches without manual intervention and reports actions
- Reduces restoration costs, saves time, and simplifies workflows for utility crews

Technical Information

- Compatible with Schneider Electric’s switch control devices and 3rd party using DNP3 protocol
- Operates over IPv6 Communications networks
- Easy to upgrade or expand existing switching zones on distribution network circuits (feeders)
- Easy to design, validate, configure, monitor, and commission using powerful WSOS Software
- Easy to integrate with existing SCADA/DMS/OMS System using industry-standard protocols
- Applicable to balanced or unbalanced, radial, or weakly meshed distribution networks
- Handles grounded and un-grounded (isolated) networks
- Applicable to permanent and transient faults
- Automatic (closed-loop), manual, and mixed modes of operation supported

The Cisco vision for the Utility Field Area Network (FAN) is to help enable pervasive monitoring and control of energy distribution networks to enhance energy delivery and build a low carbon society. The Cisco multi-service FAN solution is based on a flexible two-tier architecture that generates IP network services such as security, quality of service, resilience, and management supporting use cases such as Advanced Meter Infrastructure (AMI), Distribution Automation, and work force automation.

The Cisco FAN solution consists of three main components:

- Cisco Connected Grid endpoint which can enable devices to communicate on an IPv6 RF Mesh
- Cisco ruggedized modular 1000 Series Connected Grid Router
- Highly scalable Cisco Connected Grid Network Management System (CG-NMS)

Designed for highly secure, reliable, and scalable field infrastructures, the Cisco Connected Grid FAN Solution supports today’s transition from transmission to consumption by offering:

- Optimization of localized and regional CapEx and OpEx, with improved efficiency and visibility
- A new level of reliability and monitoring across large distributed territories
- Ruggedized hardware and software designed for continuous FAN availability
- Open standards-based tools to securely aggregate and manage network traffic and information
- A “future-proofed” infrastructure that can serve as a foundation for new standards and applications as they are developed

For more information...

on Schneider Electric, scan the QR code to email one of our subject matter experts about our networking solutions or visit http://goo.gl/McnUGJ.

on CISCO Systems networking solutions visit http://goo.gl/363fVu.