Utility Telecom Management

Foundations for Critical Utility Networks

Utility communications provide the backbone for intelligent energy grids of tomorrow. The fundamentals of success hinge on a multitude of factors, none more important than equipment that’s secure and dependable, interoperable through open standards and manageable.

Maximize each Networks potential

The Need: A comprehensive end-to-end network manager has long been desired by utilities to better capitalize on the installed equipment, help improve operational efficiency and lower the overall cost of ownership. Furthermore, such tools should expose weakness and opportunity that maximize the potential of the entire installed base. Additionally, today, utilities are challenged with the introduction of a new breed of energy services without compromising as-built service quality.

Following extensive research, GE have recognized that one of the primary requirements of our customers is a holistic management solutions that transcends product and functional utility boundaries, that strives to bridge the gap between equipment and network management. At a recent conference, over 80% of our customers identified traffic management and circuit design as their number one priority. The flexibility offered within the JMUX provides for a virtually unlimited combination of service types and traffic routing paths, leaving customers searching for a tool to manage this complexity.

ONE Solution for Smarter Utility Grids

The Solution: With that in mind, GE Digital Energy have been working to bring network planning, provisioning, capacity management, monitoring and performance processes together within a common platform. Treating the entire infrastructure as ONE centralized entity, that provides a holistic yet simple approach to manage critical assets within complex communications networks, enabling the Smart Grid transformation today.
Big changes happening that require advanced communications networks

Advanced Metering Infrastructure & Distribution Automation
- Large number of monitoring and control devices connected via a two-way high speed, high availability secure communications network

Backhaul network capacity
- Enhanced utility grid operations will put extra demand on the comms backhaul network

Commercial business services
- Utilities exploiting communications network to provide telecom services

End-to-end Comms network infrastructure management
- Complete network asset tracking
- Ties distribution and backhaul communications network topologies together
- Proven with leading telecoms/cable and utility companies
- Supports key business processes and IT drivers
- Integration with Digital Energy communications capability for the utility industry

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Advanced Asset Management for the Utility

The Smallworld Network Inventory solution from GE Digital Energy provides unrivalled functionality to plan, design, build and document the complete end-to-end physical (both inside and outside plant) and logical network infrastructure. Over 120 telecommunications network operators use Smallworld to manage their communications networks in 37 countries worldwide, including an increasing number of Utility companies who need to manage their communications assets.

Smallworld Network Inventory is a portfolio of products that provide an end-to-end solution for managing multi-vendor, multi-technology networks, encompassing integrated service and network-level data. The products provide a comprehensive, integrated view of the entire network, bringing together inside and outside plant for the planning and engineering of physical and logical networks.

A layered, end-to-end management approach for intelligent energy grids
**Benefits**

- **Improved information accuracy** – capturing domain expertise and centralizing information storage
- **Improved asset utilization** through better decision support for justifying capacity upgrades or simple unit inclusions within a node
- **Better network control** through reduction in provisioning conflicts (i.e. circuit override) and improved Network optimization and Integrity
- **Reduced Operational Expenditure** via simplification and reduction of the cost of ownership through a streamlining of network design & engineering workflow

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**Features**

- **Logical circuits management** providing improved network capacity and circuit availability and individual circuit routing over the entire network infrastructure
- **Intra/Inter nodal asset management** based on modeling of Inside Plant (ISP) racks/shelf/slots; nodal interconnects including locations, network elements, service ports, and facilities
- **Generation of physical reports** of the Lentronics network including rings and the physical communications medium (OSI Layer-1); nodes and the unit interconnects; ports and their physical attributes
- **Generation of logical reports** for circuit usage within the SONET network
- **Design engineering** including planned physical changes and planned logical changes (e.g. physical interconnections and end-to-end availability based on complex engineering rules)
GE Digital Energy’s NEW Asset Manager Offerings

**Smallworld Flexible offerings**

*Physical Network Inventory (PNI)*

*Inside Plant (ISP) rack-mount equipment (RME)*

*Logical Network Inventory (LNI)*

**GE’s Smallworlds** solutions for Lentronics Multiplexers will include the Physical Network Inventory, Inside Plant rack-mounted equipment (RME) and Logical Network Inventory (LNI) product modules. There are approximately 140 individual RME specifications for the JMUX network equipment product line. The shelf and slot records are mapped to the corresponding card specifications that fit (or are allowed to be placed) within them. The LNI configuration rules are populated in order to reflect the actual network equipment, topologies, channels, connections and services that can be deployed and provisioned in the real world. These include the LNI configuration rules such as the various type mappings and channel structures.

**Preconfigured for simplified JMUX integration**

*Design Rules and Templates for JMUX networks*

*Data model mapping and alignment*

*JMUX data upload and reconciliation*

**GE’s Smallworld** solution is now available pre-configured for GE Lentronics customers using the JMUX optical networking equipment to facilitate a fast, simple and cost-effective off-the-shelf implementation of Smallworld for these customers. The Smallworld solution will provide the network resource/asset management, planning, design and provisioning/assignment business capabilities that complement the VistaNET real-time configuration, monitoring and alarm functions. Through this layered management approach, network control can be returned to customers, and in doing so, empowering each customer to make informed business decisions.

![Visualization of JMUX Equipment within the substation facility](image)
Enhance your utility communications...

GE’s Smallworld Network Inventory is ranked by industry analysts as the #1 geospatial network infrastructure management solution for both telecoms and utilities and GE has the strongest electric and telecom customer references in the industry.

Smallworld’s Utility Telecom Infrastructure Management (UTIM) is a proven and low-risk solution supporting key network business processes, and adding a new level of control, accuracy and automation to network management.

JungleMUX communication Multiplexers provide best in class protection switching and extremely low end-to-end service latency, while specialized utility interfaces designed to protect critical utility assets operate within the harsh utility environment.

GE builds great utility networking products and solutions... let us also help you better manage them with Utility Telecom Infrastructure Management

CONTACT US for more details at: Lentronics@GE.com