Grid Solutions

ADVANCED NETWORK MANAGEMENT

Simplifying Optical Networks

Lentronics™ Advanced Network Management solution is a complete suite of software tools to securely manage the GE Vernova Lentronics family of telecommunications products, consisting of JunglePAX Hybrid MPLS/SONET/SDH, JungleMUX SONET and T1 Multiplexers, TN1U and TN1Ue SDH Multiplexers and E1 Multiplexers.

Solution Suite includes:

Advanced Network Management - EnerVista™ INSIGHT

- EnerVista™ INSIGHT is a customized software solution designed by GE Vernova to further simplify network management tasks for industrial communication devices
- Employs 'Smart Tile' technology to enhance usability and efficiency of primary NMS tasks through tile relationships (parent/child) for automatic tracking of actions
- Licensed to GE Vernova by Megasys Computer Technologies® to converge multiple platforms onto one pane of glass, including GE Vernova's SONET/SDH/TDM Multiplexers and JunglePAX Hybrid Transport platform; extendable to many other communication products
- A Linux-based server appliance and Windows-based clients offered in a Lite or Gold format, positioned as a Manager-of-Managers (MoM)

Embedded Management Solution (eMS) for the JunglePAX Platform

- Redundant embedded element managers running within each JunglePAX CORE modules provides operational staff with network-wide visibility from any node and without access or dependency on the EnerVista™ INSIGHT NMS platform
- Supports Netcof (RFC 6241) for secure connectivity with GE Vernova's EnerVista™ INSIGHT
- Offers CLI and HTTPS connection via a secure web-browser connection

VistaNET™ Element Manager for GE Vernova Multiplexers

- A Windows PC/Server-based that provides 24/7 monitoring, configuration and administration of your SONET/SDH/T1/E1 or Teleprotection Terminal (TTMX) Multiplexers
- Interfaces to EnerVista™ INSIGHT's solution via SNMPv1, 2c and 3 for security and confidentiality

Key Benefits

- Provides full FCAPS (Fault, Configuration, Administration, Performance and Security) support for GE Vernova's equipment under one pane-of-glass, with
- Edge-to-Edge provisioning of all VTU's, tunnels and services (JunglePAX) via NETCONF
- Monitoring of SONET/SDH Multiplexers alarms, performance and activity logs via SNMPv3
- Provides a high-availability, truly synchronized solution that allows operators to use all systems concurrently, and to ensure connectivity of the underlying network is always available
- Scalable – working with thousands of networking equipment vendor solutions to create an effective over-arching management solution that reduces complexity and Operational Expenditure (OPEX) of running multiple management platforms
- Extendable – allowing customers to pay as you grow with new features and functionality
- Cost effective – promoting convergence of multiple management platforms onto one Manager-of-Managers (MoM) to reduce overall cost and complexity
- Interoperable through optional Northbound interfaces (NBI) for integration with higher-order managers for Syslog, SNMP, Power BI Analytics, Email & Escalation services
- Email and Escalation feature allows users to escalate issues automatically via email or SMS
- Advanced Logic Processor monitors and correlates events in real time across multiple systems
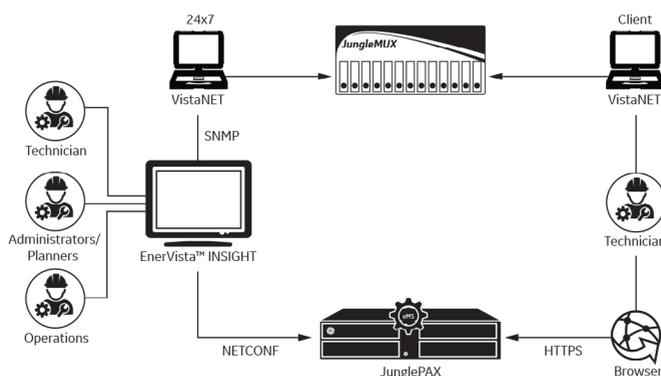

GE VERNOVA

FCAPS Model

GE Vernova's Advanced Network Management solution (NMS) suite provides network operators the functionality to all aspects of the FCAPS model. Each management task has been carefully designed and developed with utilities in mind, offering users with consistency when used across multi-vendor communication networks. Our purpose-built applications are designed for efficiency and security: processing resources are freed up when not in use by authorized personnel.

FAULT	CONFIGURATION	ADMINISTRATION	PERFORMANCE	SECURITY
Alarm Handling	System Turn-up	Track Service Usage	Data Collection	Control NE Access
Trouble Detection	Network Provisioning	Store History for Billing	Report Generation	Enable NE Functions
Trouble Correction	Auto-Discovery	Automatic Archiving	Data Analysis	Access Logs
Test and Acceptance	Backup and Restore		Quality of Service	
Network Recovery	Database Handling			

Architecture

Advanced network management for hardened optical multiplexers and packet/hybrid platforms providing:

- A real-time synchronized architecture to meet five 9s.

- High performance engine supports hundreds of users, thousands of network elements, and numerous protocols, all concurrently!

- Supports industry standards as well as vendor-specific communication protocols to converge disparate NMS domains

- EnerVista™ INSIGHT is created to be the ultimate "Manager-of-Managers" application

GE Vernova EnerVista™ INSIGHT

GE Vernova's EnerVista™ INSIGHT is a turn-key, tile-based ecosystem that leverages the best graphical tools and controls available in the industry today. Special attention has been placed on reducing the number of clicks operators typically need to make when navigating between chosen assets (nodes, interfaces, facilities), their status (performance, quality, alarms and alerts), and the network management tasks needed to accomplish a desired outcome (provisioning, testing, problem resolution).

EnerVista™ INSIGHT is a unified management solution aimed at simplifying ease-of-use, manageability and maintainability across GE Vernova's industrial communication equipment.

GE Vernova EnerVista™ INSIGHT is offered in LITE and GOLD versions, both framed by a system map tile, known asSmart Tiles, to visualize inter-device connections and status, along with 'Physical' and 'Traffic' selectors that aid to refine navigation and asset targeting. EnerVista™ INSIGHT LITE is designed for operators focused on network-wide event detection and coordination only, with optional functionality to email and escalate issues to a global community of support staff. EnerVista™ INSIGHT GOLD provides expanded functions to monitor, configure and maintain the managed assets.

Smart Tiles

Smart Tiles are applications within EnerVista™ INSIGHT offering users contextual navigation and customizable dashboards which simplify tasks by reducing the number of application windows open at one time.

Offering users an optimized layout, EnerVista™ INSIGHT is comprised of individual Smart Tiles that constantly and automatically adjust based on the operator's input to feed the user with the associated data that supplements their primary request. Parent-child relationships between tiles are set up and torn down dynamically along with the tiles themselves to create an environment that's both effective and intuitive.

A number of tiles are available to users that separately display alarms, PM data, physical topology, facilities & circuits that interact dynamically to the operator's selection. Following Microsoft® standard Windows layouts including ribbon integration, this 'click once' technology provides a cohesive representation of network and device status and offers automatic tracking of actions through user-defined tile relationships (parent / child).

Smart Tiles Empower the Operator

- Enable users to define their custom views

- Predict user actions to improve operator effectiveness

- Accelerate user action and responsiveness

- Minimize user "clicking" and launching of additional applications

- Save preferred dashboard configurations and run concurrent dashboards

- Extend field technician capabilities with browser access to key tiles

Network Management System Features

GE Vernova's NMS for Hardened Optical Networks solution offers:

	ENERVISTA INSIGHT - LITE	ENERVISTA INSIGHT - GOLD
Topology	✓	✓
Alarms	✓	✓
Circuit tracing	✓	✓
Fault Management		✓
Performance*		✓
Utilization		✓
Email and Escalation	Optional	✓
Smart Scripting		✓
Advanced Logic Processor		✓
Traffic Builder		JunglePAX Only

*planned feature

Communication Protocols

Connectivity between SONET/SDH, T1/E1, MPLS-TP, Hybrid and Industrial Switch platforms is seamlessly managed through GE Vernova's Advanced NMS regardless of the device's communication protocol, including SNMP v1, 2c, 3, NETCONF, CLI, ensuring its effectiveness as a single network management solution for all your GE Vernova Industrial Communication devices.

Database Performance and Synchronization

Connectivity between SONET/SDH, T1/E1, Hybrid MPLS-TP & TDM platforms is seamlessly managed through EnerVista™ INSIGHT regardless of the device's communication protocol, including SNMP v1, 2c, 3, NETCONF, CLI, ensuring its effectiveness as a single network management solution for all your GE Vernova Industrial Communication devices.

Graphical User Interfaces and User Applications

EnerVista™ INSIGHT provides several different dynamic graphical user interfaces to easily navigate, diagnose and solve network issues. Graphical Screen Manager (GSM) provides a geographical view that presents alarms and their network location on a GIS map; and depicts a real-life representation of physical equipment for each type of device.
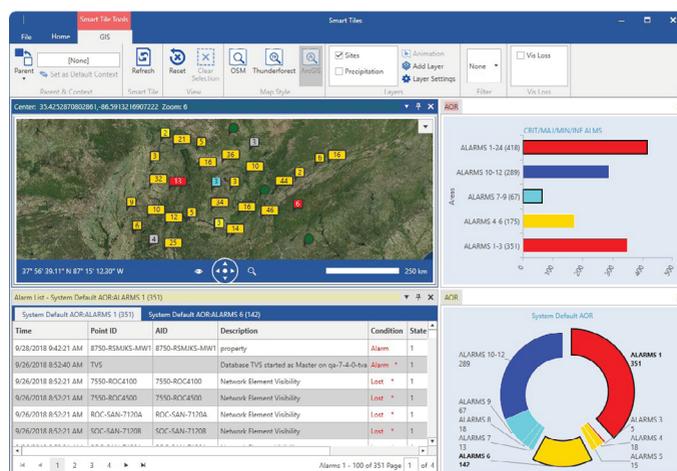
Customizable arrangement of smart tiles

Ordering

COMPONENT	PART NUMBER	FEATURE
Lite	90000-50	INSIGHT Lite, Per node, supports existing licensed user(s)
Upgrade	90000-50/UG	INSIGHT-Lite Upgrade to GOLD, Per node, supports existing licensed user(s)
Gold	90000-50/G	Network Manager - GE Vernova INSIGHT (GOLD), Per node, supports existing licensed user(s)
HA	90000-51/G	Network Manager - High.Availability for GE Vernova INSIGHT (GOLD), Per node, supports existing licensed user(s)
Server	90000-52	Dell NMS Server
Analytics	90000-54	Network Manager - Telenium Analytics Data Source
Client Seat	90000-55	Network Manager - Single Client Seat license (Lite or Gold)
Ping	90000-56	Network Manager - PING Utility
Syslog	90000-57	Network Manager - SYSLOG North Bound Interface
SNMP	90000-58	Network Manager - SNMP North Bound Interface
Email Escalation	90000-59	Network Manager - Email & Escalation North Bound Interface

Embedded Management System (eMS)

The JunglePAX (JPAX) solution follows a utility telecom model for device, element and network management functionality. Central to the overall architecture, a highly functional and redundant embedded Management System (eMS) is running within each CORE module to complement external managers and to simplify their complexity.

eMS exists within each CORE module, independent of data and control planes. It facilitates:

- Device-level requests, and
- Network-wide service & infrastructure requests from element and network management solutions.
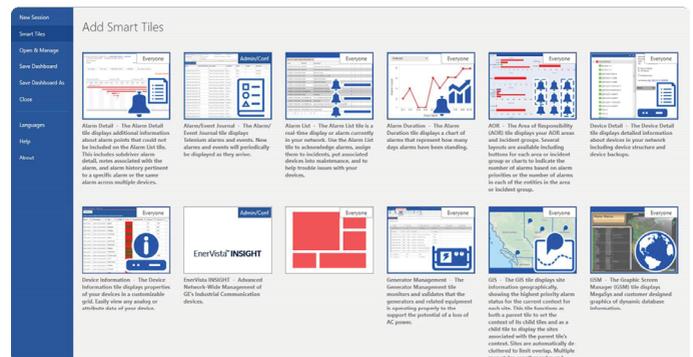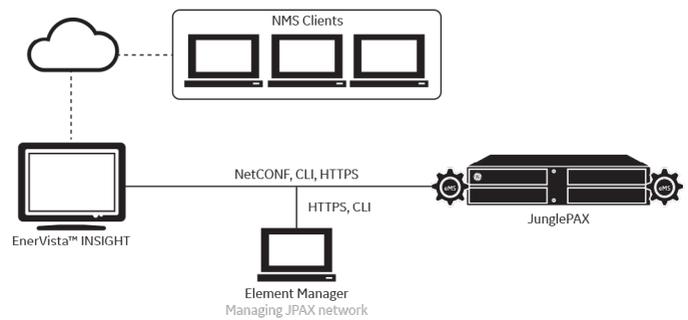
From a user's perspective, network management of a JPAX network is performed through EnerVista™ INSIGHT, local-management of a node is performed via the embedded manager hosted within the gateway node acting as a secure agent for FCAPS functions. eMS is also used by technical staff for initial equipment setup, local configuration changes, alarm and event analysis through an off-the-shelf web-browser such as Google Chrome. Web browsers establish a secure connection through an NMS port at any JPAX node acting as a proxy (eMS gateway node) to visualize the entire JPAX network, independent from the NMS platform. eMS is also implemented in a software redundant manner within each JPAX node to ensure high availability and reliability.

VistaNET

VistaNET is a complete suite of software tools to manage the GE Vernova Lentronics family of multiplexers, consisting of JungleMUX SONET and T1 Multiplexers (T1MX), TN1U and TN1Ue SDH and E1 Multiplexers (E1MX). VistaNET comprises different licensed features including:

VistaNET may be installed on to any of the following operating systems

- Windows 10 OS (recommended)/ Windows 7
- Windows Server 2019 / 2016/ 2012 R2
- Microsoft Azure™

COMPONENTS	PART NUMBER	FEATURES
VistaNET Network Interface (VNI)	86456-01	Standard NMS offering, providing remote configuration and monitoring
VistaNET Local Access (VLA)	86456-02	Low-cost, rudimentary NMS solution ideal for small networks
VistaNET Server Application (VSA)	86456-04 (SONET/SDH nodes) 86456-14 (T1/E1 nodes)	Provides a single instance RTU license for the VistaNET server gateway to run on a Windows 7 or 10 PC or LAN server computer, including Windows Server 2012 R2, 2016 and 2019. Expands VNI functionality from a remote VistaNET session over TCP/IP
VistaNET Serial Communication Port Expansion	86456-05	Right to Use (RTU) license offered for each additional VNI serial communication port connection privilege (required when further redundancy is needed, or a new network segment is added)
Alternate Traffic Routing (ATR)	86456-07	Provides a RTU license, enabling creation and activation of primary and backup traffic routing schemes in certain Lentronics optical transceiver units
VistaNET Traffic Manager (TM)	86456-21 (SONET/SDH nodes) 86456-24 (T1/E1 nodes)	Shows current traffic usage and available traffic capacity and identifies physical port availability. Captures inter- and intra-node connectivity, inventory, and unit performance values, and then compares with historic values to determine inconsistencies. Additionally, the discovered data is accessible through SNMP GET commands to help MoM's visualize network topology, inventory, circuits, logs, and performance data
VistaNET Clear Error & Traffic Counters	86456-31	System-wide license used by technicians to clear error counters at the node and ring level in one click, saving time and speeding up troubleshooting
VistaNET Bulk RSS	86456-32	Allows configuration of unit's Rack/Shelf/Slot so that SNMP-based managers can correctly position the units within the Node's chassis.
VistaNET SNMP Agent (vSNMP)	86456-51	Enhances VistaNET service with SNMP functionality, converting VistaNET alarms into SNMP traps and forwarding them to a user-defined list of SNMP managers. The agent supports Get commands of active and cleared alarms

For more information, visit
gevernova.com/grid-solutions

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