

StreamView® Open Network Management System



HIGHLIGHTS

- ▶ Monitors, controls and administers PolarSat's MF-TDMA VSAT networks as well as terrestrial networks
- ▶ Graphically portrays network connectivity and status, individual node equipment, alarm and diagnostic information, and other system key performance indicators (KPI's)
- ▶ Historical graphical display of network performance and status
- ▶ Engineering rack view gives graphical display of equipment at each site
- ▶ Configuration management automatically tracks software versions as well as hardware tracking
- ▶ Hosted on a Linux server allowing multiple operators to connect to it for synchronous access
- ▶ Monitors multiple network elements including Communications equipment, RF, Routers, UPS, Terrestrial connectivity
- ▶ Supports ICAO mandated KPIs for Air Traffic Control Network applications

OVERVIEW

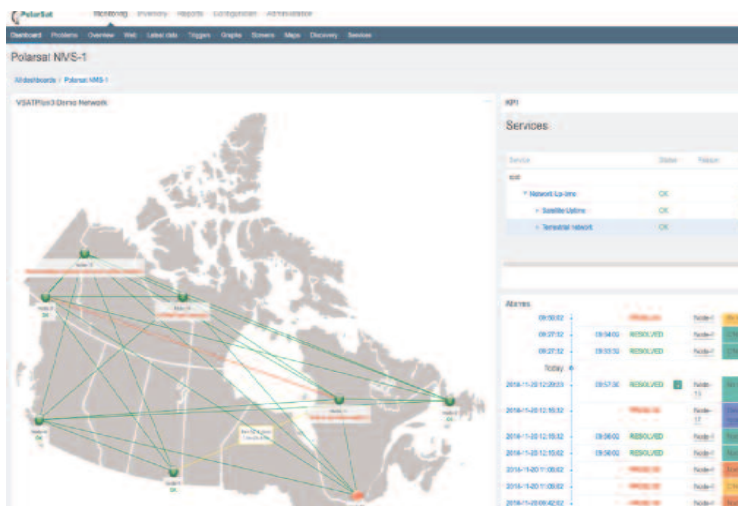
The powerful, new StreamView® Open network management system is based on an open architecture to graphically monitor, configure, administer and control a PolarSat VSATPlus 3® satellite communications network and terrestrial network if applicable. The StreamView Open Network Management System (NMS) is the dash board for the entire VSAT system. The StreamView Open NMS provides displays of the network topology, individual station configurations and status, network configuration and control functions, alarm detection and response, and network management access control. It monitors and controls the VSAT Modem, RF, Multiplexer, and Routers through SNMP or optional serial port interface.

The NMS-network configuration and control functions include discovering stations in the network, adding equipment to existing stations, displaying key performance metrics, constructing and editing IP routing tables, editing the customer's database, and downloading new software to the Remote Stations.



The NMS provides a graphical map view of the network. This places sites on a network and gives a summary status of the network. If a site is in alarm then the site icon color is changed alerting the operator that there may be an issue.

The network management application data collector module periodically polls the data from the remote devices at the rate set by the user to control the



StreamView Open Server is hosted on a multiprocessor Linux server that supports access from multiple operator PCs.

amount of traffic sent over the network.

StreamView also time tags and records alarm and status changes from all stations and devices. It provides an alarm and status log for report generation, an audible alarm and separate displays for alarm and status changes. This is a particularly useful tool for tracking and measuring network performance, managing network resources, etc.

Flexible and Open User Interface

The StreamView features an easy-to-use graphic, user interface which displays a user customizable top level dash board. This dashboard gives the operator the health of the network at a glance. A series of lower level windows (views or screens) present operational (input) to the operator for drilling down into the

network equipment. From the dashboard the operator can select KPI performance screens to check throughput and uptime, Engineering screens to see the status of the equipment, Alarm logs to see what issues have arisen and configuration screens.

To make it easy for the operator to learn and efficiently use the system, each operational activity has its own set of hierarchical windows. Operators and screens are not restricted by this hierarchy, and each operator can configure their own dashboard to

monitor the information that is of most interest to them. Screen arrangement, navigation options, functions available for each screen, on-line help and messages are designed to maximize typical operations and help prevent operator errors.

On-line help screens automatically displays the user manual page required to provide help and assistance for the accomplishing specific item selected.

FEATURES

Network Management with StreamView

the network operator can see the health of the network by looking at the GEOMAP. The links between sites indicate overall connectivity. For networks that have redundant terrestrial and satellite paths to site the NMS displays an aggregate picture. The operator can also select network sites into a group that allow multiple elements of the group to be displayed as a single icon simplifying the display for larger networks. StreamView also allows dynamic reconfiguration of network connectivity, to test the operational readiness of backup systems and networks.

Engineering View - The StreamView engineering view supports a rack view of each earth station in the network by just clicking on the sites The StreamView operator can see what piece of equipment is in alarm since it is highlighted in red and then click on this equipment to bring up trouble shooting and

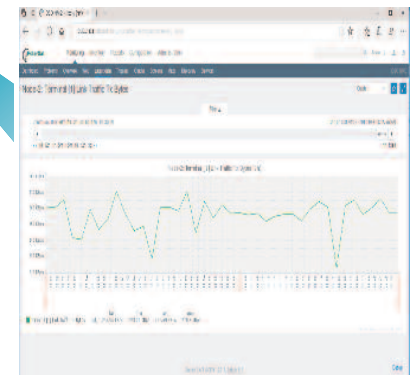
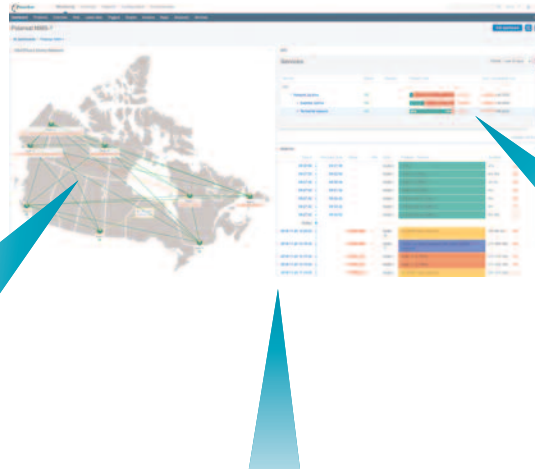
configurations screens . The system displays the earth station alarm status for StreamView operator evaluation and action. The operator can generate hard copy reports of individual earth station displays, logs and summaries.

Multi-User System - The StreamView is a multi-user system, which is particularly ideal for remote operation workstations, and large networks where there is a need to partition various

Geomap screen – Displays a full size geographic map of the network showing the location of, and identifying, each site. You can configure node equipment including rack and chassis selection and configuration, down to the individual card type and configuration. This screen allows a composite display of multiple network connectivity supporting both Satellite and Terrestrial network status information.



RACK VIEW: Display the equipment at each site. Can drill down to each piece of gear.



NETWORK TRAFFIC STATUS: Now see exactly how much satellite/terrestrial bandwidth is being used for both transmit and receive traffic.

| Problems by severity | Critical | High | Average | Warning | Information |
|----------------------|----------|------|---------|---------|-------------|
| Data-prob | | | | | 1 |
| Main Site | | 1 | | | |
| ODU | | | | | |
| Production | | 1 | | 1 | 1 |
| Terrestrial | | | | | |
| VSAT | | 1 | | | |
| Weather | | | | | |

Alarm View: Lets you see what is going on in the network. Color coded by the severity to focus your attention on what is most important.

network control functions or levels of operation, and assign them to different or multiple users. Operations can be controlled and restricted only to those required for specific uses, depending on the specific users log-in level. For example, a Monitor Only operator can view most of the parameters, but not change or modify any parameter.

Key Performance Indicator (KPI) – StreamView features KPI display for each node giving uptime along with other user specified KPIs. KPIs are hierarchical so the uptime for a site can be broken down to the uptime of the satellite network and the terrestrial network independently

Alarms screen displays Alarm Window which is the current alarm log. Color coding of each level of alarm, informs you immediately of network status.

Configuration Screens allows you to configure or reconfigure network and satellite parameters, see equipment configurations and track locations of hardware and perform software version audits. Issues such as interconnection of circuits and

network map processing and distribution, and global lists such as area codes, group connectivity and circuit descriptions.

Reports Screen displays a list of predefined report types.

Administration Screen allows you to perform user and network level administrative functions such as modifying the operator access level or the monitor & control configuration information.

Help Button features an on line help search that allows you to go directly to and display the information you need.



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StreamView® Open Network Management System

Summary Of Specifications

FEATURES

Network Management

- Enables one or more network operators to monitor, control, and administer a PolarSat based satellite communications network.
- Graphically portrays network connectivity maps and status, individual node equipment configuration, alarm and diagnostic information, and other relevant system information.
- Displays current and historical network bandwidth allocation and status.
- Allows dynamic configuring of the network elements.
- Provide Key performance Indicators KPI that follow ICAO Required Communication Performance Reporting
- Displays alarm log with severity
- Report generation for common performance, configuration, and alarms

Compatible with the most common satellite communications products:

- VSATPlus 3®
- VSATPlus II®
- RF
- Multiplexer
- Routers
- UPS
- MPLS terrestrial networks

Display and/or print network status reports, listings:

- Event log
- Uptime
- Network/node throughput
- Geomap
- Rack View of equipment configuration
- Current alarm log
- Network and individual node configuration
- Configuration management
- User configurable Dashboards
- User selected parameters reporting

VSAT Station Management

- Poll each station for status and alarms
- Display or print with status for each station
- Handle monitor and control messages from each station
- Collect and log alarm and status change information for each station
- Graphically portray each earth station connectivity Rack and status, equipment configuration, alarm and diagnostic information, and other relevant node information
- Control selected subsystem parameters at each station

NMS Server

- Multicore Linux server with 2x1TB hard drive in a redundant RAID configuration, 8GB RAM along with 27" monitor and keyboard

WEIGHTS/DIMENSIONS/POWER

NMS Server

Weight: 38.8 pounds (17.6 kg)
Height (1U): 1.68 inches (42.8 mm) , Width: 17.08 inches (434mm) ,Depth: 28.13 inches (714.62 mm)
Power: 450 watts 100-120/200-240 V ac, 47-63 Hz, single-phase, grounded neutral conductor

ENVIRONMENTAL CONDITIONS

Operating

Temperature: 5 C to 40 C
Relative Humidity: 0% to 80%

Nonoperating

Temperature: -40 C to 60 C
Relative Humidity: 0% to 90% noncondensing