



VeSion™ RFTS

Centralized Remote Fiber Test System

Bringing VeSion to the Network

VeSion RFTS ensures network reliability, reduces maintenance costs, and protects valuable fiber assets by proactively managing network health and diagnosing issues.

Platform Highlights

- Multi-platform, scalable, and flexible architecture. One system can scale from a single standalone server to a clustered, globally available monitoring platform
- Seamless integration with the rest of the VeSion monitoring platforms, like Ethernet or RF upstream/downstream
- Works with any end-user device: Linux®, Windows®, Android™, and iOS®
- Easy integration with a Northbound Interface (NBI) using Open API, SNMP, or Syslog
- Maximize organization flexibility and air-tight security thanks to VeEX Org-Chart
- Supports SMTP, SMS, SNMP, Syslog, and push notifications

Key Features

- Simplify fiber operations and reduce Mean Time to Repair (MTTR) and downtime
- Manage more than 2000 RFTS-400/RTU-4000 probes from single management interface
- Reduce unnecessary crew dispatch and activate a new service the right way the first time
- Simplify SLA management and improve service uptime with precise fault location
- Limit troubleshooting to zero thanks to the superior GIS integration feature
- Proactive monitoring helps protect the investments in the existing fiber infrastructure

Related Products



RFTS-400



GeoServer



Single System for Different Monitoring Applications

VeSion represents VeEX's one-stop server-based monitoring platform for the Optical, DOCSIS, and Ethernet-based networks. The system works with different network monitoring probes to cover all demands and challenges of modern communication networks.

The VeSion RFTS seamlessly integrates with the rest of the VeSion ecosystem to provide detailed visibility over an optical fiber network regardless of its type. It helps streamline the deployment and activation of new services and protects the investment in existing fiber infrastructure.

The system streamlines Mean Time to Repair (MTTR) by delivering accurate fault location information, which can be further enhanced with supplementary data from an integrated GIS platform. This way, the field teams will always have all the information to act the right way the first time without affecting other utilities or services.

The VeSion Return and Forward path monitoring system delivers end-to-end upstream and downstream visibility for CATV networks, helping operators detect and resolve issues before they impact customers. It monitors ingress, noise, and UCD performance in the return path, while downstream it verifies channel integrity across Analog, QAM, OFDM, and MPEG with key metrics like MER, BER, and constellation analysis. Real-time alarms and flexible notifications keep technicians focused on service quality, reducing downtime and ensuring a reliable customer experience.

Active Ethernet testing capabilities can further enhance VeSion system functionality. VeSion can coordinate the scheduling of popular Ethernet tests like RFC2544, Y.1564, or RFC6349 between two or more RTU-340 units or even perform service acceptance and verification tests with handheld units from the field.

Cloud-Based One System Platform

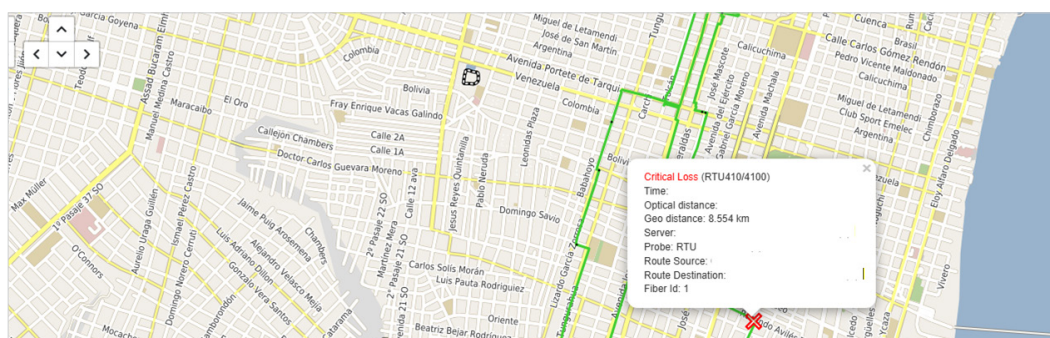


RFTS Operation

VeSion Remote Fiber Test System (RFTS) enables service and infrastructure providers to monitor and diagnose fiber optic networks from a Network Operation Center (NOC). The system serves as a single entry point to the entire RFTS monitoring environment. The system is agnostic to any active network elements or transmission technology; therefore, large organizations can deploy VeSion RFTS in any part of their network from the network core to the edge. Users can perform all RFTS-related tasks using a single server-based application, regardless of the system's scale, which increases overall productivity and supports any Data Governance policies.

The system is compatible with both RFTS-400 and RTU-4000 Remote Fiber Test Units (RTUs), allowing for precise detection of breaks or other irregularities along a fiber link. The system manages and configures RTUs to continuously monitor fiber lines for any anomalies or signs of degradation that might affect optical signal quality while storing historical records for trend analysis.

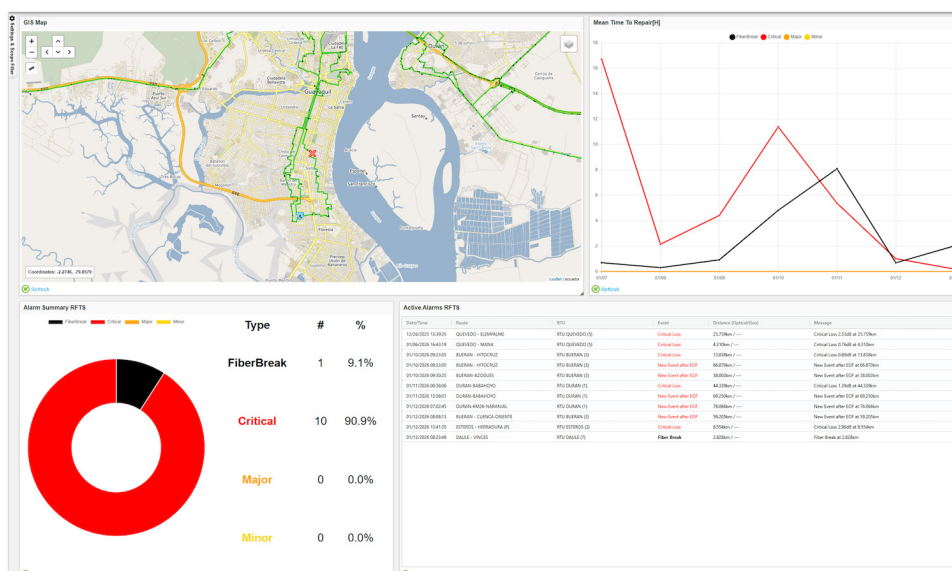
The system analyzes each monitoring cycle by comparing it to a reference trace of the fiber or a baseline recorded under standard conditions. The system generates an alarm for any deviation from preset thresholds and notifies the operator via text, email, and SNMP messages. The detected fault's location can be correlated onto a map using a Geographical Information System (GIS) or any other, which pinpoints the precise location and speeds up dispatch and repair.



Monitoring Features

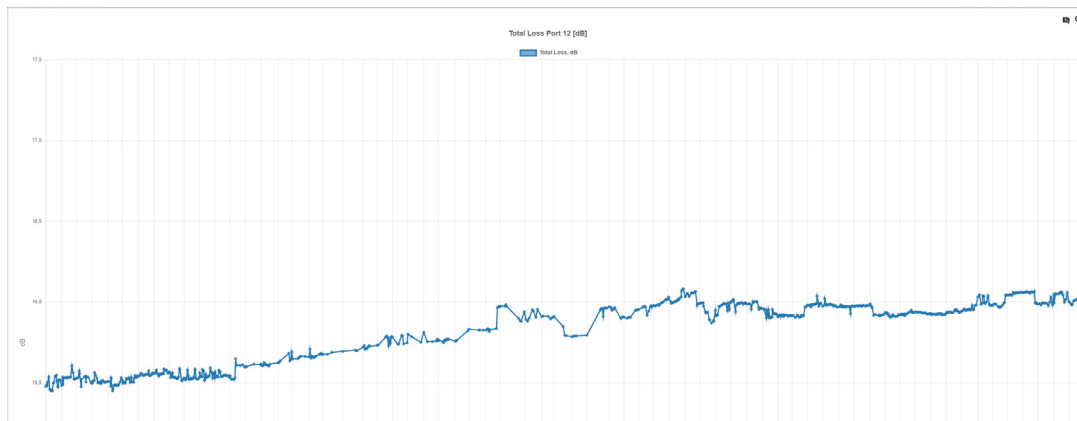
Fiber networks extend from the core to the network's edge, serving as the backbone for essential services that underpin the daily functioning of modern society. VeSion RFTS provides immediate, directed responses to any incidents that can affect service performance. VeSion RFTS administrators can set individual fiber thresholds, ensure SLA compliance, and minimize false positives from misconfiguration and assign notifications based on organizational responsibilities.

The system minimizes the MTTR by defining clear ownership rules for any alarm, ensuring that an alarm notification will always reach the right person. VeSion RFTS administrator can define a workflow for every alarm object, minimizing delays between the alarm occurrence and the resolution.



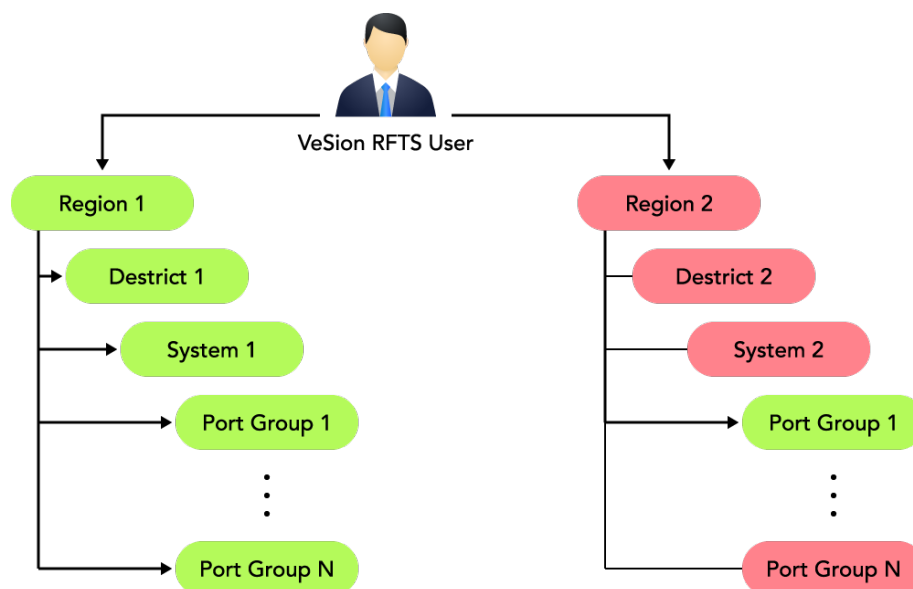
Proactive Fiber Monitoring

Fiber infrastructure is not only vulnerable to intermittent issues such as fiber cuts or loss events caused by vandalism or wildlife, which require an immediate response. Optical fibers are susceptible to tension, pressure, or temperature drift. They also suffer from aging effects, resulting in increased fiber attenuation. The proactive monitoring feature can detect and report any slowly developing issues, giving service providers enough time to take corrective action before the degrading event affects active service. VeSion RFTS uses machine learning-induced fiber aging modeling to analyze and predict fiber loss and attenuation, supporting the decisions of network planning teams.



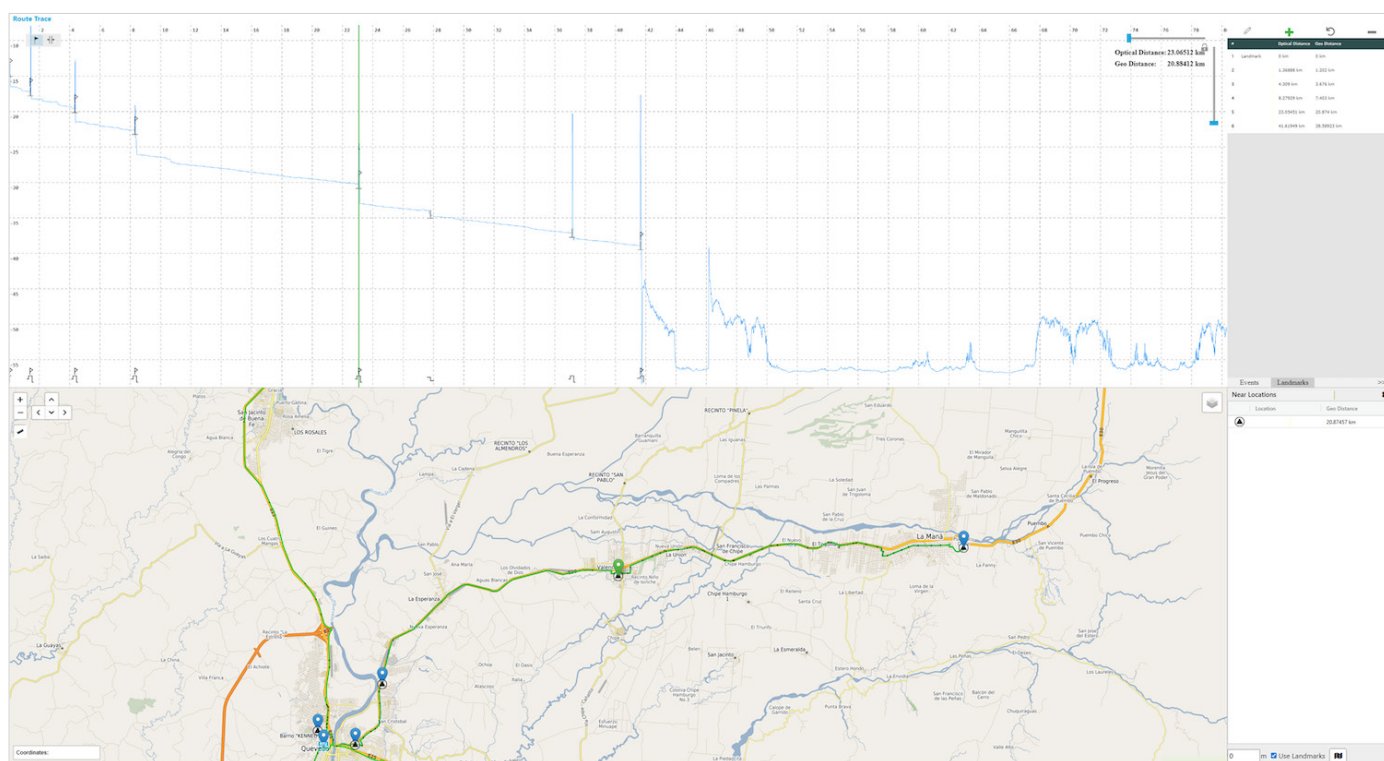
System Partitioning & Data Governance

VeSion RFTS utilizes state-of-the-art Org-Chart technology to improve user productivity and minimize the MTTR. The Org-Chart provides a four-layer tree-based structure, which can help system administrators define clear rules of data ownership. System administrators can partition the system into multiple Region-District-Systems tree-based structures to limit a user's visibility within the system. System administrators can segment the individual RFTS-400/RTU-4000 units to the level of individual test ports, so users can provide a targeted response if any alarm occurs. Users can have visibility over multiple Org-Chart entities regardless of their type to improve their productivity while keeping the system air-tight secure.



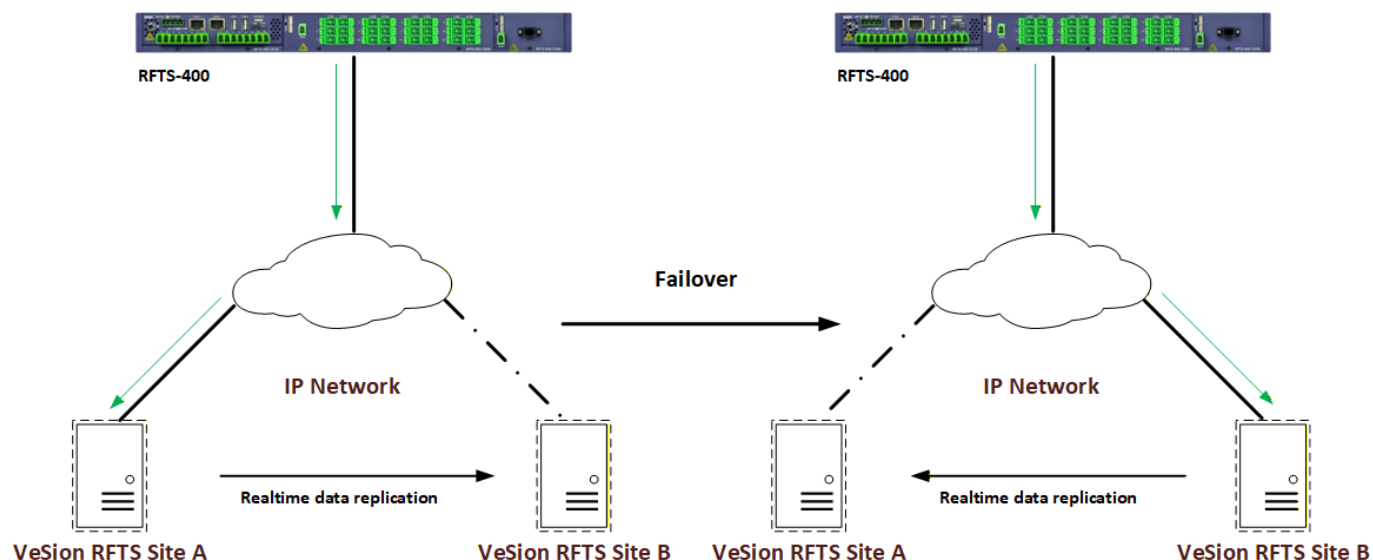
GIS Integration

VeSion RFTS supports GIS integration using KML/KMZ files or using an API supported by the GIS vendor. A user can load geospatial data from any KML/KMZ file with just a few clicks, but it also supports integration with third-party GIS systems using an API provided by the GIS system vendor. The system can send alarms to GIS so Network Operators can immediately dispatch a repair crew. GIS systems also hold valuable information about the fiber inventory that can be pulled from the GIS into VeSion RFTS to enhance the monitoring data and increase the fault location accuracy, like using the landmarks (patent pending) algorithm to correlate the optical and geographical distance when reporting an alarm.



System Architecture

VeSion RFTS employs a scalable system architecture designed for deployment on either a single physical or virtual server, with the capability to expand into a globally accessible, geographically distributed monitoring environment. The system supports active/hot-standby highly available deployment with fully automated failover. The system can work in a distributed mode where a Network Load Balancer (NLB) distributes the monitoring workload to the individual VeSion RFTS worker nodes. A single system can support more than 2000 RFTS-400/RTU-4000 monitoring probes regardless of operating mode.



Supported Hardware

VeSion RFTS supports RFTS-400 Remote Fiber Test Units and supports full backward compatibility with RTU-4000 units. Both units provide superior fault location accuracy thanks to the 500000 datapoints sampling resolution and support 1550/1625/1650nm OTDR modules with up to 50dB dynamic range. Both units support low insertion, high port density (up to 288 ports), and MEMS-based switches. A single RFTS-400/RTU-4000 unit can control more than 4000 test ports.

