

VIAVI NITRO AIOPS

Network Automation

Empower Your NOC with Future-Ready Intelligence



Transforming NOC Operations with Automation

In an era defined by 5G, IoT, and evolving digital ecosystems, telecom networks face unprecedented complexity and operational demands. NITRO AIOps redefines network automation, enabling operators to streamline NOC operations, enhance service reliability, and proactively address challenges.

With its cutting-edge workflows and AI-driven insights, NITRO AIOps delivers real-time solutions to minimize downtime, optimize performance, and improve customer experiences.

VIAVI NITRO[®] AIOPS NETWORK AUTOMATION

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Overview

The Need for Network Automation

With the rise of 5G, IoT, and cloud-native technologies, manual NOC operations are becoming increasingly inefficient in handling the growing complexity of telecom networks. The reliance on manual processes slows down fault detection, incident resolution, and routine operational tasks, leading to higher MTTx (Mean Time to Detect, Diagnose, and Repair).

Revolutionizing Telecom Operations

Network automation enhances operational efficiency by proactively addressing issues and adapting to evolving network conditions. By automating NOC operations, operators can significantly reduce MTTx, streamline workflows, and shift from reactive troubleshooting to proactive service assurance. AI/ML-driven workflows optimize power-saving modes, mitigate high-load failures, and automate fault detection, ensuring faster resolution, reduced human error, and improved customer experience. This transformation enables operators to meet growing service demands while maintaining a resilient and efficient network.

Business Challenges

As telecom networks grow increasingly complex, operational efficiency is steadily declining. At the same time, the rising operational expenditures (OPEX) required to manage these networks are no longer sustainable in a highly competitive market. Operators must address these challenges to remain efficient, cost-effective, and customer-focused.

Key Issues



Reduced Operational Efficiency

Managing networks increasing complexity becomes more challenging. Manual workflows and reactive management fail to address real-time performance issues, leading to inefficiencies that slow operations and increase Mean Time to Repair (MTTR).



Service Impact

Growing traffic demands in modern networks result in high-load failures, mobility challenges, and capacity limitations. The absence of real-time adaptive workflows to adjust dynamically to network conditions further hinders operators from meeting ever-rising customer expectations.



Increased Churn Rates





The lack of automation in managing network faults and performance causes service disruptions and inconsistent quality, eroding customer loyalty. In a competitive market, unmet expectations drive higher churn rates, putting pressure on operators to retain their market share.

SOLUTION OVERVIEW

NITRO AIOps Network Automation addresses the telecom operations business challenges with a cutting-edge platform designed to streamline closed loop incident resolution workflows and provide real-time insights through advanced analytics. The solution automates your network operations by leveraging specialized capsules specifically designed for telecom MOP (Method of Procedures) executions.

The solution empowers telecom operators to enhance network reliability, minimize downtime, and deliver superior customer experiences, all while reducing operational complexity and costs.

Key Technical Capabilities

			
<p>Unified Network Automation Closed-Loop Workflows</p>	<p>Real-Time Incident Management</p>	<p>Intelligent Operations</p>	<p>Scalable, Configurable, and Seamlessly Integrated</p>
<p>Centralized dashboard for managing workflows, monitoring KPIs, and analyzing results</p> <p>Provides multi-domain insights, topology views, and incident tracking for seamless visibility</p> <p>Enables Vendor-Agnostic closed-loop automation by detecting faults, analyzing root causes, and executing corrective actions across all network generations</p>	<p>Delivers near real-time (NRT) insights for immediate anomaly detection</p> <p>Automates ticket generation and tracking for streamlined issue resolution</p>	<p>Develops standardized, reusable Methods of Procedures (Automation of MOPs) for tasks such as firmware upgrades and service provisioning</p> <p>Incorporates domain expertise into automation scripts and workflows to ensure tailored operational efficiency</p> <p>Integrates machine learning algorithms to dynamically optimize processes and enhance decision-making</p>	<p>Tailored workflows to fit any network size or complexity, ensuring adaptability across diverse environments</p> <p>Enable low-code/zero-code environments, simplify network automation and enable rapid deployment with minimal coding expertise</p> <p>Supports integration with 3rd party platforms like Maximo and incorporates AI/ML for predictive, proactive operations</p>

NITRO AIOps Network Automation is purpose-built to transform and optimize telecom business operations through intelligent automation.

VIAVI NITRO AIOps Network Automation (with Telco Automation Pack)

 <p>Automating Time/Resource Intensive Tasks</p>	 <p>Reduction of Manual Errors</p>	 <p>Enhanced Service Reliability</p>
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USE CASES

Driving Network Transformation

The following use cases highlight the powerful capabilities of NITRO AIOps Network Automation. Adaptable and customizable, the solution supports RAN, Core, Fixed, and Transmission networks, enabling tailored workflows and seamless integration to drive efficiency and transformation.

Use Case	Description	Key Features
Power Savings Analysis	Assesses the impact of power-saving modes on network performance and user experience. By dynamically analyzing KPIs, the workflow identifies under-performing sites during critical hours, ensuring that power-saving strategies align with operational needs.	<ul style="list-style-type: none"> • Dynamic Threshold Analysis for PDCP volume and power-saving KPIs • Automated Ticketing via Maximo or similar for affected sites • Scheduled Monitoring: The workflow will periodically analyze sites with high load and monitor them using NRT/hourly/daily intervals
High-Load Cell Optimization	Detects and mitigates high-load conditions in 4G cells to ensure optimal network performance and user experience.	<ul style="list-style-type: none"> • Load Detection based on PRB usage, throughput, and DL volume • Automated Ticketing for high-load cells with incident prioritization • Result Viewer Analysis of top-affected objects for targeted resolution
User Capacity Management	Analyzes and resolves user capacity constraints in high-density 3G/4G networks to maintain service quality.	<ul style="list-style-type: none"> • Capacity Analysis to monitor and identify sites nearing maximum user thresholds • Neighbor Availability Monitoring to mitigate resource constraints • Incident Automation with Maximo integration for seamless ticket creation
Comprehensive Accessibility & Retainability Tracking	Provides dynamic insights into accessibility and retainability issues across 2G/3G/4G networks.	<ul style="list-style-type: none"> • KPI Monitoring with color-coded trends for real-time issue detection • Region-Level Filtering for granular analysis of problem areas

USE CASES

Driving Network Transformation continued

Use Case	Description	Key Features
HW/SW Configuration Failures	Tracks and notifies hardware/software version changes to maintain system accuracy and performance.	<ul style="list-style-type: none"> • Change Detection against inventory baselines • On-Demand Execution with real-time alerts • Manual Reconciliation for validation
Proactive Traffic Monitoring	Identifies and resolves traffic degradation in 2G/3G/4G networks, ensuring consistent throughput and availability.	<ul style="list-style-type: none"> • Degradation Detection for traffic patterns using historical data • Automated Workflows to address throughput and availability issues
Interference and RTWP Failures Management	This use case resolves interference and RTWP failures in 3G/4G networks, ensuring stable performance and minimizing disruptions.	<ul style="list-style-type: none"> • Adjacency Analysis and Threshold Monitoring: Detects RTWP variations across sites and neighbors, flagging issues for proactive resolution • Automated Ticketing and Dynamic Alerts: Integrates with incident management platforms, providing notifications and topology views for efficient issue handling
Handover Success Rate Improvement	This use case improves handover success rates within and across sites by monitoring mobility and interface failures	<ul style="list-style-type: none"> • Failure Detection and Root Cause Analysis: Monitors inter-mobility and X2 interface failures, identifying issues affecting handovers and enabling timely resolution • Automated Workflows and Visualization: Triggers corrective actions and provides topology views for comprehensive analysis and effective fault management

BUSINESS BENEFITS

NITRO AIOps Network Automation delivers significant business benefits by enhancing operational efficiency, reducing costs, and improving service quality. By automating complex workflows and providing real-time insights, it enables telecom operators to optimize network performance, minimize downtime, and enhance customer satisfaction. Its scalability and adaptability empower businesses to stay competitive in a rapidly evolving digital landscape.

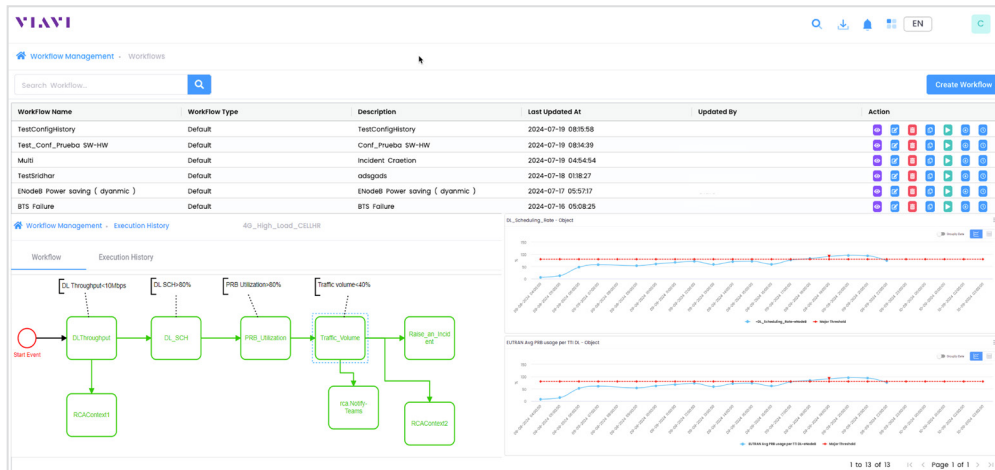


Figure 1. Network Automation dashboard and workflow using NITRO AIOps

Enhanced Network Reliability

Proactive Issue Detection:

Leverages real-time monitoring and automated workflows to identify and resolve issues before they escalate, minimizing downtime

Consistent Service Availability:

Maintains high SLAs and builds customer confidence through uninterrupted network performance

Operational Efficiency

Closed-Loop Automation:

Automates end-to-end workflows, from fault detection to resolution, reducing manual intervention and human error

Resource Optimization:

Enhances resource allocation to lower costs and streamline network management processes

Improved Customer Experience

Superior Service Quality:

Reduces outages, enhances throughput, and improves call and data performance for end-users

Proactive Customer Care: Resolves issues before they impact customers, ensuring seamless and high-quality user experiences

Scalability and Competitiveness

Future-Ready Scalability:

Adapts to the growing demands of 5G, IoT, and other emerging technologies effortlessly

Market Competitiveness:

Enables rapid deployment of innovative solutions, keeping operators ahead in a fast-paced industry

PROVEN SUCCESS

Customer Leading mobile and fixed-line service provider in Latin America

Problem The customer faced challenges managing complex networks due to siloed systems lacking end-to-end visibility, causing delays in issue detection and service disruptions.

To meet growing demand for reliable connectivity, they required real-time monitoring and predictive analytics to proactively improve service quality.

Solution

- The solution utilizes AI-based tools for real-time monitoring and predictive analytics, enabling proactive detection and resolution of network issues. It provides end-to-end visibility across fixed and mobile networks, consolidating multi-vendor and multi-domain data into a unified view.
- By improving operational efficiency and enabling predictive, preventive, and corrective actions, the solution enhances service reliability and customer experience. This approach reduces downtime, accelerates issue resolution, and ensures the network meets growing performance demands.

Benefit

Operational Efficiency

- Monitors ~24,700 sites hourly, detecting ~2,500 issues daily.
- Up to 3 major incidents per hour reported autonomously.
- Reduces manual troubleshooting and site visits.


Cost and Energy Savings

- Automated power-saving strategies for ~16,000 sites, cutting energy use and costs.

Network Reliability

- Mitigates ~1,100 daily high-load and throughput issues.
- Proactively addresses ~400 daily mobility failures.

Customer Experience

- 800+ daily traffic-related failures reported
 - Minimizes service disruptions, improving VoLTE, data, and voice
 - Enhances customer satisfaction and retention.
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WHY VIAVI?



Comprehensive and Customizable Network Automation

NITRO AIOps Network Automation delivers tailored, multi-domain workflows across network technologies and domains. Its Telecom Automation Pack, a unique curated capsule library designed for telecom-specific operations, enhances NOC automation, streamlines workflows, and reduces MTTx.



Real-Time Visibility and Incident Response

Unified dashboards offer a single pane of glass for centralized monitoring, enabling near real-time detection and resolution of critical issues, driving efficient and data-driven operations.



Seamless Integration and Streamlined Operations

Easily integrates with third-party systems, facilitating automated ticket creation, fault resolution, and end-to-end incident management through a single interface.



Actionable Insights for Proactive Management

Advanced visualizations and KPI trend analysis empower operators to anticipate and resolve issues, ensuring optimal network performance and service quality.



VIAVI NITRO AIOps is shaping the future of intelligent network operations.

As your strategic partner, we drive continuous innovation to keep you at the forefront of the rapidly evolving telecom landscape.

Embrace the future with VIAVI NITRO AIOps. Visit us at viavisolutions.com/aiops today.



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