

VIAVI NITRO LOCATION INTELLIGENCE

Device Performance Analysis

**Geolocation Intelligence to Expose Faulty Devices, Fix Firmware Issues,
and Reduce Network Degradation at Scale**



NITRO® Location Intelligence Device Performance Analysis

Delivers geolocation-driven intelligence to identify malfunctioning or firmware-affected devices that silently degrade network quality.

By correlating device behavior, location patterns, and performance anomalies, it empowers operators to uncover hidden root causes, protect customer experience, and optimize network efficiency through precise, data-driven actions at scale.

"Typically, more than 20% KPIs Degradation in the network due to Rogue UEs"

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Overview

Mobile operators lose millions annually due to hidden device- and firmware-driven degradation that distorts KPIs, misdirects CapEx, inflates OpEx, and harms customer experience. NITRO Location Intelligence Device Performance Analysis provides a geolocation-driven, TAC-aware intelligence layer that uncovers these silent degraders, enabling precise, automated remediation and smarter investment decisions. The result: faster RCA, 20–30% CapEx avoidance, 8–15% fewer care tickets, and stronger revenue protection in high-value segments.

The Hidden Cost of Device-Driven Degradation

When faulty devices remain active in the network, their impact extends far beyond the individual user. They distort KPIs, contaminate cluster performance, trigger recurring service issues, and misdirect optimization priorities. The result is wasted effort, misaligned investments, and persistent degradation that remains unresolved until device-level intelligence brings it to light.

Introducing NITRO® Location Intelligence – Device Performance Analysis

NITRO Location Intelligence detects rogue devices, validates their impact, and monitors them with geolocated KPIs—revealing hidden root causes and enabling precise corrective actions.

KEY ISSUES

RISING CUSTOMER CARE AND CHURN COSTS



Rising Support Costs: Repeated troubleshooting and compensation efforts escalate when root causes remain unknown.

Increased Churn Risk: Unresolved issues degrade experience and drive customer dissatisfaction.

INEFFICIENT NETWORK INVESTMENTS



Misguided CapEx Decisions: Without device-level insights, issues are wrongly attributed to coverage or capacity, leading to unnecessary investments.

Ineffective Network Upgrades: New sites or optimizations fail to resolve problems when the true cause is a small set of faulty devices.

HIDDEN DEVICE-DRIVEN DEGRADATION



Invisible Root Causes: Faulty or firmware-affected devices go undetected in traditional KPI monitoring.

Widespread Impact: A few problematic devices trigger large-scale degradation and persistent complaints.

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SOLUTION OVERVIEW

NITRO Location Intelligence Device Performance Analysis detects malfunctioning or firmware-affected devices, validates their impact through TAC- and model-level intelligence, and maps their contribution across cells and clusters using geolocated KPIs. The solution highlights degradation hotspots, quantifies the impact of each rogue device or TAC, and provides targeted remediation actions. The result is a clear, prioritized view of which devices cause what degradation, where, and what actions will resolve it with maximum efficiency.

Key Technical Capabilities



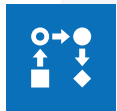
Geolocated Device KPI Correlation

Links device KPIs with precise location data to pinpoint where faulty or firmware-affected devices degrade the network.



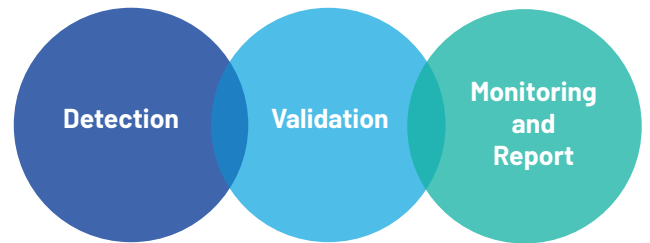
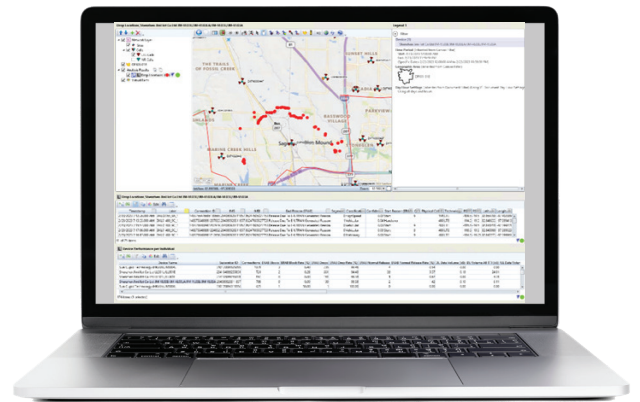
TAC and Model Intelligence

Analyzes TAC, chipset, and OS performance to detect device-specific issues, firmware defects, and capability gaps.



Rogue Device Detection Workflow

Identifies poor-performing or high-impact devices and quantifies their contribution to localized degradation.



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BUSINESS BENEFITS

NITRO Location Intelligence Device Performance Analysis delivers measurable operational and financial gains by revealing the true device-driven contributors to network degradation.

Lower OpEx Through Accurate Root-Cause Resolution

By pinpointing the specific devices responsible for KPI degradation, NITRO® GEO reduces troubleshooting cycles, prevents unnecessary field interventions, and lowers customer-care escalations.

Smarter CapEx and Network Planning Decisions

Device-level intelligence eliminates false coverage or capacity assumptions, avoiding ineffective upgrades and enabling more reliable network optimization and long-term planning.

Stronger Customer Experience and Revenue Protection

Removing rogue devices improves service quality, reduces drops and failures, and prevents chronic complaints—strengthening customer satisfaction and reducing churn, especially in high-value segments.

PROVEN SUCCESS STORY

Business Challenges	<p>A Tier-1 Operator struggled to identify a small subset of malfunctioning or firmware-affected devices that were distorting KPIs, triggering chronic customer complaints, and misdirecting both OpEx and CapEx. Traditional monitoring tools masked device-driven degradation, leaving engineering teams blind to the true root cause.</p> <p>NITRO Location Intelligence provided clear visibility, enabling immediate action and preventing millions in unnecessary upgrades.</p>
Solution Multi Use Case Capabilities	<ul style="list-style-type: none"> • Rogue Devices Identification and Monitoring • iOS vs Android Supported Devices Performance Benchmarking • Device and Handset Segmentation and Performance with Carrier Aggregation • FWA (Fixed Wireless Access) Performance Monitoring • VIP Performance Analysis and Monitoring • Carrier Aggregation Performance Analysis • Traffic Load Balancing Investigation • 4G CQI, RF Histogram, and TA Distribution Analyses • CRAN, Small Cell, and WiFi Traffic Offloading (including small-cell hit rate) • Poor Performing Devices Analysis
Benefit	<ul style="list-style-type: none"> • 5–10% improvement in accessibility/retainability – by removing rogue or malfunctioning UEs. • 20–30% CapEx savings – by deploying 5G/new carriers only where devices fully support them. • 2–5% uplift in real 5G usage – through targeted fixes on poor time-on-NR behavior. • 8–15% fewer customer care tickets – thanks to OEM/TAC-specific device quality scoring. • 10–12% lower FWA churn – via proactive monitoring of CPE performance issues. • 30–40% faster VIP/FirstNet and enterprise RCA –device-level reducing diagnosis time. • \$2M–\$8M CapEx avoided per market – by identifying unnecessary upgrades early. • 10%+ IoT reliability improvement – through fast detection of TAC/firmware-driven issues. • 5–8% throughput gain – from smarter load balancing based on device analytics. • 40–60% fewer recurring device failures – by rapidly identifying poor-performing TACs.

Don't let hidden device issues drain revenue, erode customer trust, or misguide critical investments. With NITRO Location Intelligence, operators finally gain the clarity, precision, and confidence to act with impact. The sooner you see the truth behind the KPIs, the faster you unlock real value.

WHY VIAVI?



Competitive Differentiation: VIAVI provides advanced geo-intelligence and TAC-level device analytics that go far beyond OEM and vendor-native tools, exposing degradation that traditional KPI- or OSS-based monitoring cannot detect.



Modular Roadmap: A scalable evolution path

Device Performance → QoE Benchmarking → FWA Optimization → Automation
Ensuring operators gain immediate impact today while building toward AI-driven, autonomous operations.



Proven Operator Impact: Validated across multiple Tier-1 deployments, VIAVI consistently delivers measurable OpEx reduction, CapEX avoidance, and CX improvements by revealing device-driven degradation that other tools miss.



Seamless Ecosystem Integration: Designed to plug into existing OSS/BSS, data lakes, and AIOps solution, VIAVI ensures fast adoption, minimal disruption, and a unified intelligence layer across engineering, care, and strategy teams.

VIAVI NITRO Location Intelligence is shaping the future of network operations through advanced geo-intelligence, enabling smarter, cost-effective decisions without compromising user experience.

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 Location Intelligence.

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