VIAVI NITRO CORE, LOCATION INTELLIGENCE AND AIOPS

Turning Network Intelligence into Operational Power

Driving Safety, Efficiency, and Performance in Modern Mining

DRIVING SAFETY, EFFICIENCY, AND PERFORMANCE IN MODERN MINING

Mining is a world where every second and every signal counts. Operations span deep underground tunnels, remote pits, and vast haulage routes often in conditions where communication can be a challenge.

When machines stop talking to each other, productivity drops. When safety systems lose connection, lives can be at risk. And when troubleshooting takes hours, every delay costs money.

At the same time, mining networks are becoming more complex. Connected vehicles, automated drills, sensors, cameras, and control systems all rely on steady, dependable connectivity. But maintaining that network does not always require a team of telecom experts. What mining operators need is a way to **see what's happening**, **understand the impact**, and **act quickly** without the complexity.

Downtime in mining is not only a technical issue but affects safety, production, and revenue. Network interruptions can delay shipments, stall equipment, or isolate workers. Traditional network tools often overwhelm teams with data, leaving them reacting to problems instead of preventing them.

NITRO AMS portfolio comprising **Core, Location Intelligence and AIOps** is designed to give mining operators the **clarity and confidence** to run connected operations without needing to be network specialists. It helps connect the dots between devices, vehicles, sensors, and control systems to show how the network behaves and how that affects the ground operations. Through its intelligent design, NITRO continuously monitors performance, highlights where issues are starting to form, and helps your teams take action before operations are impacted.

Three Ways NITRO AMS Portfolio Delivers Value

1   **Future-Ready Solutions**

As your operation grows and technology evolves, your network needs to keep pace. Whether you are expanding automation, adding new sensors, or moving to private 5G, NITRO AMS evolves with the needs.

It gives you a complete view of network performance across your sites, your equipment, and your connected workforce and adapts seamlessly as new systems come online.

With built-in intelligence powered by **NITRO AIOps**, it can even predict where network strain or interference might occur, helping you plan instead of reacting after the fact.

2   **Lowered Cost of Operations**

Troubleshooting network issues in remote or underground areas can be slow, expensive, and risky. The platform helps cut that cost by showing exactly **where** and **why** a problem is happening often before it affects your operations.

It learns the patterns of your network, automatically connecting performance drops to their cause. Teams no longer have to sift through alarms or send engineers onsite for guesswork. They get clear, actionable insights that help them resolve issues faster.
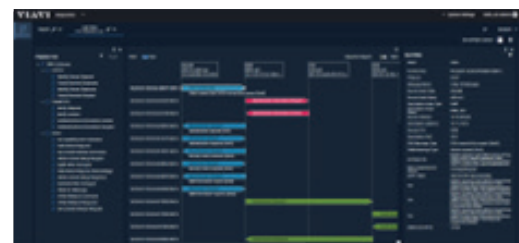
NITRO Core diagnostic insights and KPI views help operations teams resolve issues quickly, understand patterns, and keep the network performing without unnecessary field visits or deep technical analysis

With AI-driven automation, **NITRO AIOps** reduces manual effort, filters out noise, and helps operations teams make better decisions faster. This means fewer unplanned outages, fewer site visits, and lower operational costs across the board.

Geolocated issues to identify drop locations

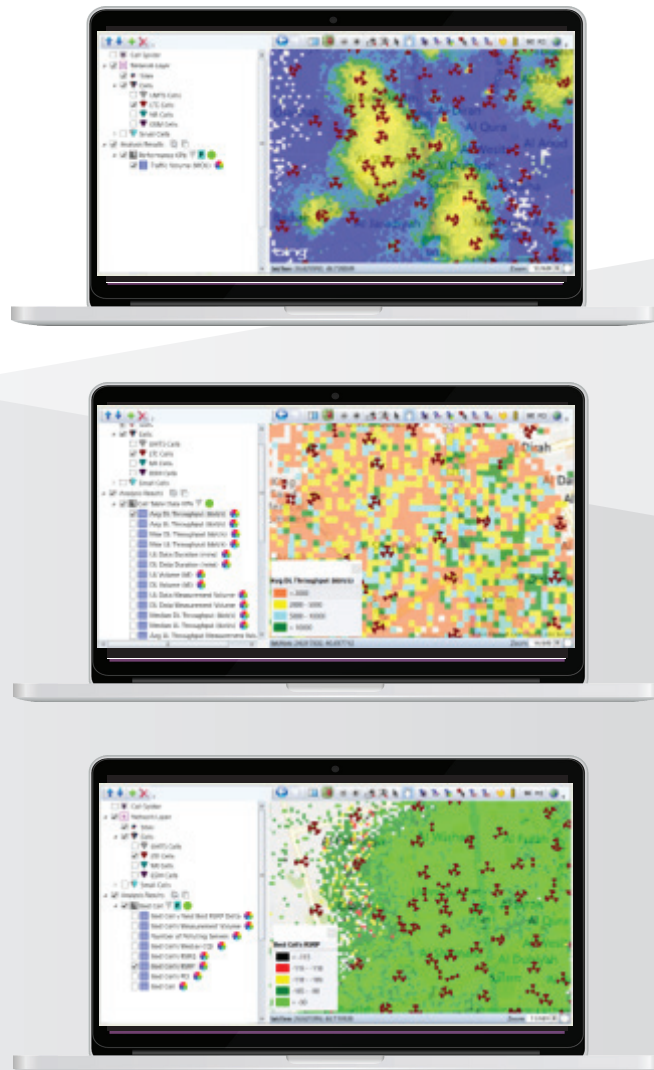KPI dashboards to understand patterns and keep network performing

3 **Safety and Ease of Use**

In mining, connectivity is about more than efficiency, it is about keeping people safe.

NITRO AMS portfolio shows you where coverage is strong, where it's fading, and how network health might affect critical systems. If a communication link drops or a zone becomes unreachable, the team can see it instantly and can respond before safety is compromised.
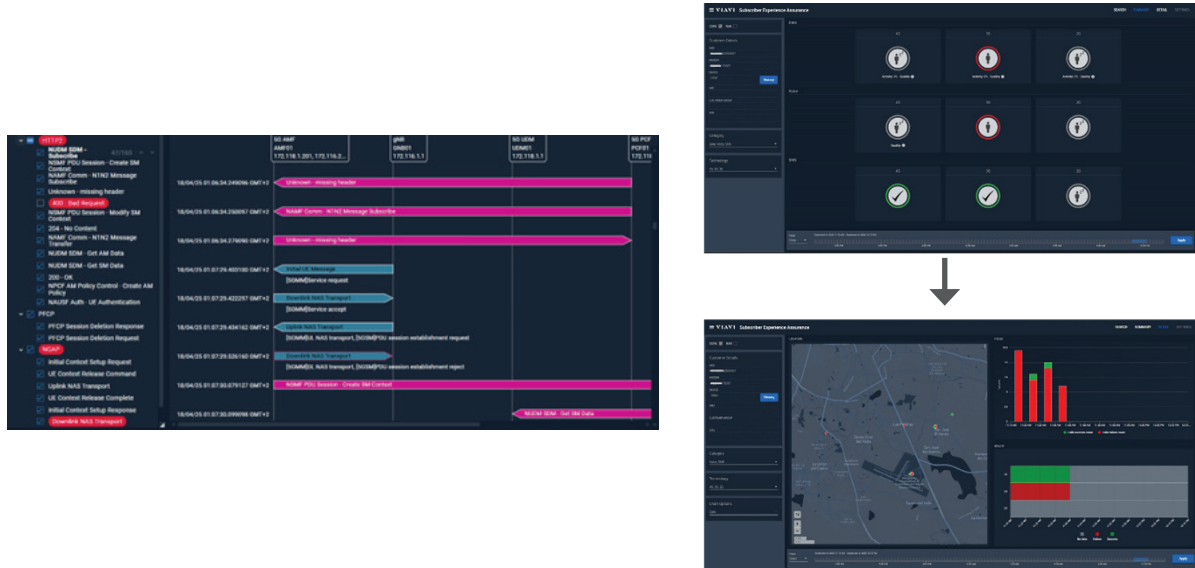
The entire platform is built with simplicity in mind, so that the field and operations teams can easily understand what's happening without deep network expertise.

Intuitive dashboards, clear maps, and automatic prioritization make complex data easy to act on.

Service Assurance visibility: Showing Traffic hotspots, user throughput, LTE Signal strength

NITRO Core brings clarity to how your network behaves. Its diagnostic tools help teams quickly understand what's happening behind the scenes, while KPI dashboards and explorers highlight trends and early signs of degradation. Combined with subscriber experience insights, teams get a complete picture of how reliably the network is supporting workers, vehicles, and critical applications without needing deep telecom expertise.

(left to right): Diagnostic capability and Subscriber Experience Assurance workflow

Working together with **NITRO Location Intelligence**, it brings a geographic perspective mapping where performance dips occur, which zones see higher traffic, and which devices may be struggling to stay connected.
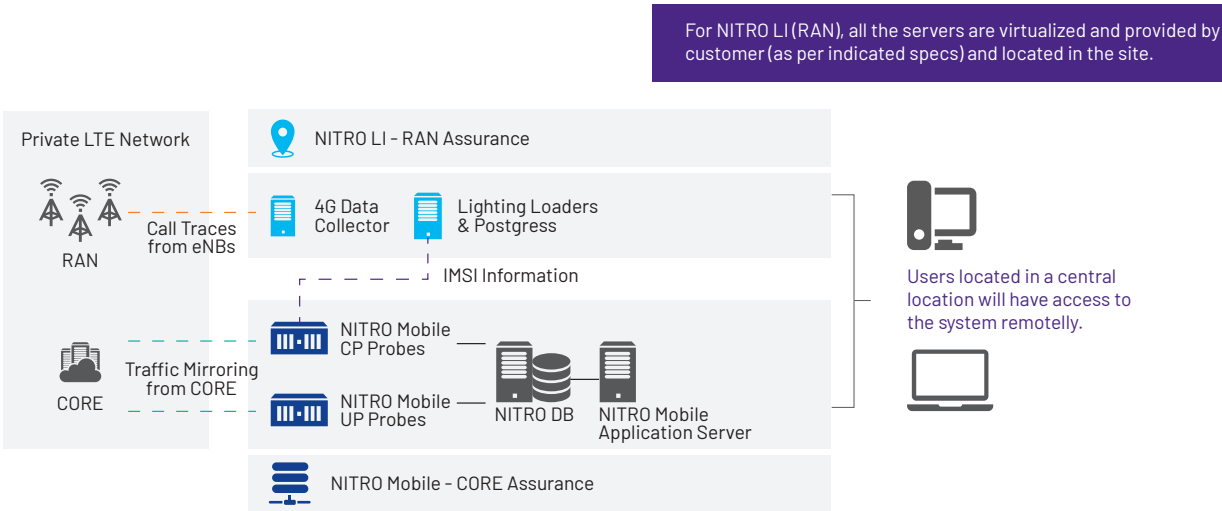
Supporting both is **NITRO AIOps**, the platform's built-in intelligence layer that learns from your network, predicts potential disruptions, and recommends actions before they become problems.

Together, they create a closed-loop system of visibility, learning, and action so your network gets smarter every day, without adding complexity to your operations.
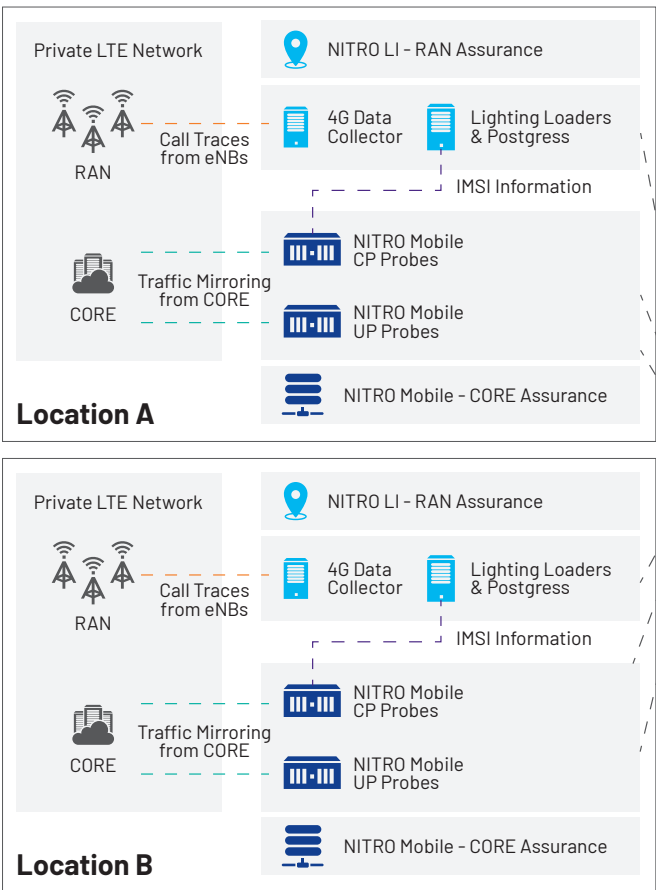
Typical Solution Architecture

Single Location Scenario

For NITRO LI (RAN), all the servers are virtualized and provided by customer (as per indicated specs) and located in the site.

Private LTE Network

NITRO LI - RAN Assurance

4G Data Collector

Lighting Loaders & Postgress

RAN — Call Traces from eNBs

IMSI Information

CORE — Traffic Mirroring from CORE

NITRO Mobile CP Probes

NITRO Mobile UP Probes

NITRO DB

NITRO Mobile Application Server

NITRO Mobile - CORE Assurance

Users located in a central location will have access to the system remotely.

For NITRO MOBILE (CORE), all the servers are BARE METAL provided by VIAVI and located in the site.

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Multiple Location Scenario

Private LTE Network

NITRO LI - RAN Assurance

4G Data Collector

Lighting Loaders & Postgress

RAN — Call Traces from eNBs

IMSI Information

CORE — Traffic Mirroring from CORE

NITRO Mobile CP Probes

NITRO Mobile UP Probes

NITRO Mobile - CORE Assurance
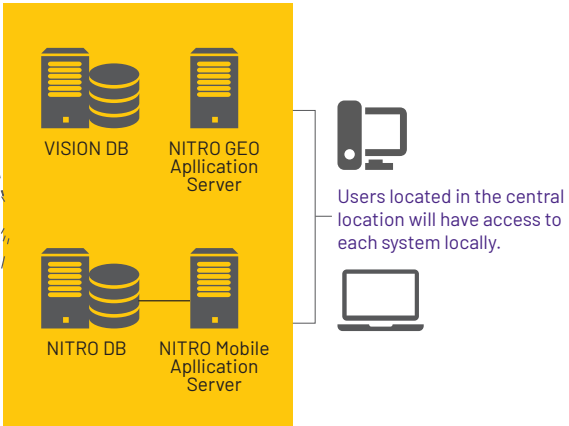
Location A

For NITRO LI (RAN), all the servers are virtualized and provided by customer (as per indicated specs). The 4G Data Collectors and Lightning Loaders MUST be located in each site, however the VISION DB and App Server can be located in the central office, as long as the connectivity requirements are met.

Central Site

VISION DB

NITRO GEO Apllication Server

NITRO DB

NITRO Mobile Apllication Server

Users located in the central location will have access to each system locally.

Private LTE Network

NITRO LI - RAN Assurance

4G Data Collector

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RAN — Call Traces from eNBs

IMSI Information

CORE — Traffic Mirroring from CORE

NITRO Mobile CP Probes

NITRO Mobile UP Probes

NITRO Mobile - CORE Assurance

Location B

For NITRO MOBILE (CORE), the Probes must be BARE METAL provided by VIAVI and located in each site, however the VISION DB and App Server can be virtualized and provided by customer, located in the central office, as long as the connectivity requirements are met.

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The Result: Reliable, Safe, and Smart Mining Operations

With **NITRO AMS**, mining enterprises gain a partner in operational reliability.

Every connected asset, every worker, every machine is all supported by a model in which you can trust. Whether your operation is underground or spread across vast terrain, the platform gives you the intelligence to keep it safe, connected, and performing at its best.

Because in mining, connection is not about data, or the connectivity it is about keeping your entire operation moving.

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