Telefónica Tech

Telefónica Tech's NOC (Network Operations Center)

Advanced operation of 4G/5G Mobile Private Networks in critical environments.

Connectivity is already part of the operational processes in factories, hospitals, energy infrastructures and large campuses.

A network outage can lead to downtime, operational risks or a direct impact on service.

4G/5G Mobile Private Networks make it possible to meet these requirements. **They provide reliability, security, low latency, and traffic control**, while at the same time introducing operational complexity: multiple technical layers, hybrid IT/OT environments, integration with critical systems, and the requirement for continuous availability. That is why **managing them as a conventional network is not enough**.

What is the NOC (Network Operations Center)?

The centre from which the network is governed

Telefónica Tech's Network Operations Centre (NOC) is the specialised centre from which **4G/5G Mobile Private Networks deployed for companies and institutions are monitored, operated, and optimised**.

This is where network performance is monitored in real time, incidents are detected, changes are implemented and service continuity is guaranteed.

Continuous operation close to the customer

The NOC is operated by specialised teams working **24/7/365, providing support in several languages (English, Spanish, and Portuguese)**.

The operation is organised into different levels of support, managing incidents through a tiered model to ensure efficient resolution that avoids both overreaction and inaction:

L0

Event logging and contextualisation

With knowledge of the customer's environment.

L1

Classification, diagnosis and resolution of basic issues

By correlating radio, core and service metrics.

L2

Specialised resolution of complex incidents

From the NOC itself, without immediate external dependence.

End-to-end management

The NOC centralises a wide range of operational services:

Monitoring and Incident Management

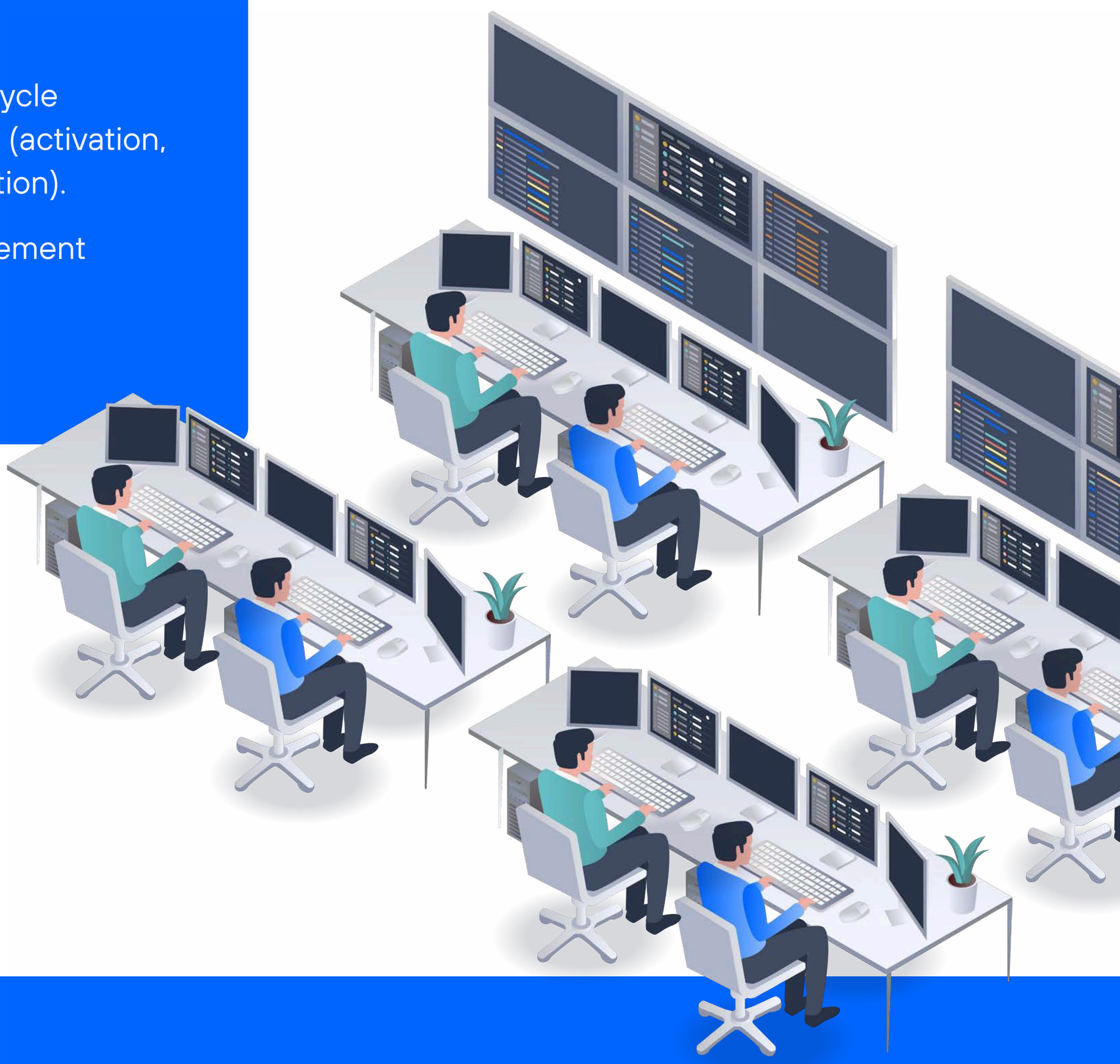
- Real-time monitoring of device topology, latency, and status.
- Proactive fault detection using algorithms and watchdog tools to identify problems before they affect the customer.
- Help desk and maintenance management (preventive, predictive, and corrective).

Operational Security

- Implementation of hardening measures and benchmarks for each core node.
- Monitoring of Operations and Maintenance (O&M) traffic for threat detection.
- Management of automated backups and adaptive recovery plans.
- Mandatory cyber security training for all operators.

Connectivity Management (SIM)

- Provisioning and lifecycle management of SIMs (activation, suspension, deactivation).
- Over-the-top management of SIMs through the NOC platform and associated APIs.



Unified Orchestration Platform

The NOC's operation is supported by a **Unified Orchestration Platform for Mobile Private Networks**, a proprietary tool (vendor-agnostic) that acts as a 'single panel' connecting all elements of the network, enabling:

Centralised management and analysis

The platform includes analysis modules to visualise different KPIs in real time (service quality, overall network performance, resource utilisation level, etc.).

Automate SIM management

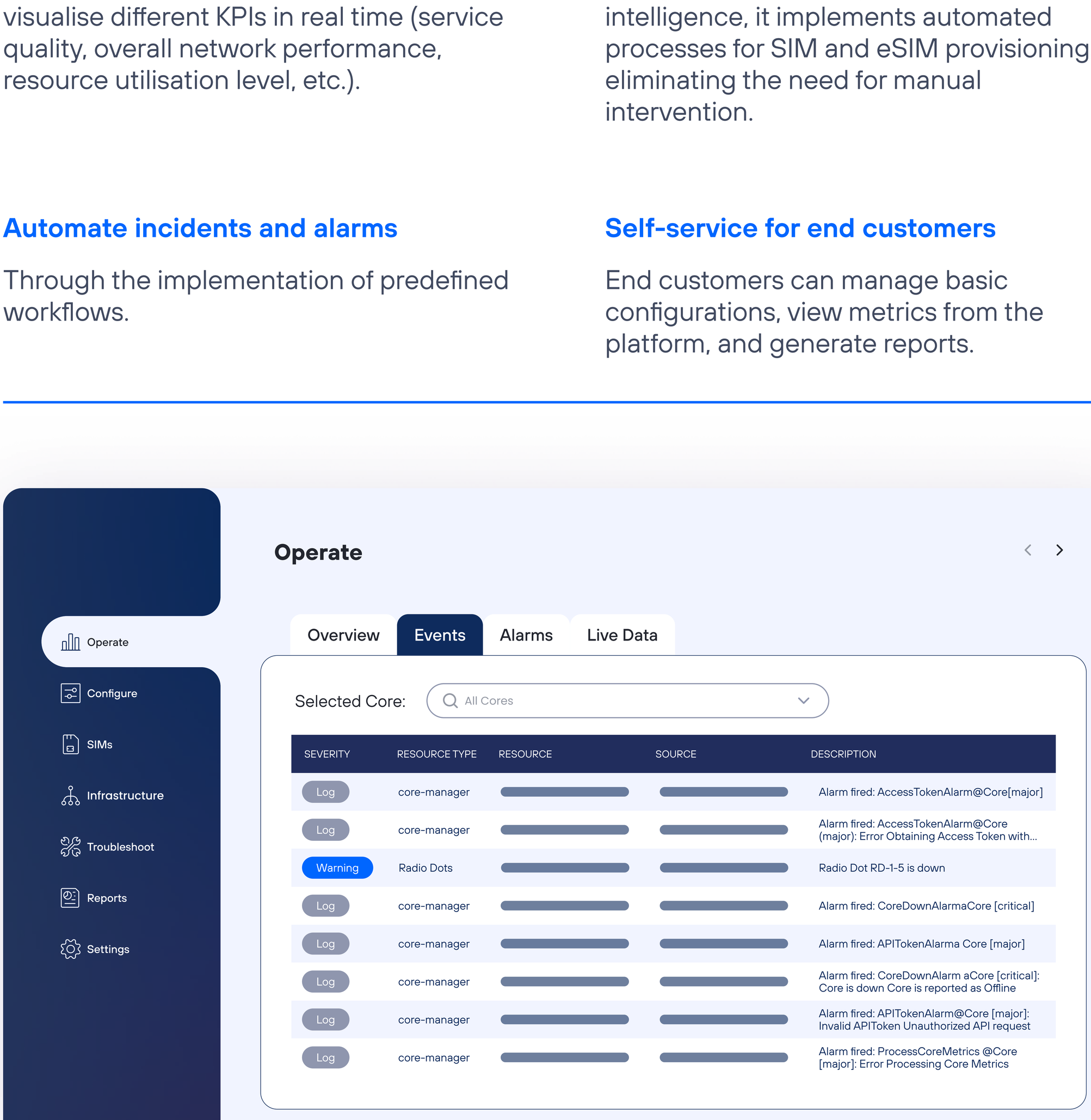
Using advanced analytics and artificial intelligence, it implements automated processes for SIM and eSIM provisioning, eliminating the need for manual intervention.

Automate incidents and alarms

Through the implementation of predefined workflows.

Self-service for end customers

End customers can manage basic configurations, view metrics from the platform, and generate reports.



Benefits for your business

Thanks to the NOC your organisation gains:

- **True operational continuity**

  The NOC reduces unplanned downtime and increases the stability of critical processes by detecting degradations before they turn into incidents that affect network operation.

- **Reduced technical complexity for your teams**

  Internal teams can focus more on the business since the NOC takes on the monitoring, diagnosis and technical coordination between layers (radio, core, services).

- **Greater control and visibility over network behaviour**

  End-to-end visibility enables informed decisions about evolution, expansion or new use cases, with less technical uncertainty.

- **Faster and more accurate response to incidents**

  The NOC works with prior knowledge of the customer's environment, topology and critical services, allowing it to quickly pinpoint the source of the problem, act on the exact point and minimise collateral impact.

- **Networks adapted to the business**

  Operation from the NOC allows the network to be adjusted to the customer's reality with operational changes, the incorporation of new devices or services, peaks in activity or process evolution. The network accompanies the business in its evolution.

- **Solid foundation for scaling and evolution**

  A well-operated network is a network that is ready to grow. The NOC provides the control and stability necessary to reduce risk in future projects and accelerate their implementation.

- **Operational efficiency and responsible use of resources**

  A mature operation avoids oversizing, reprocessing, and inefficient configurations. The result is a network that makes better use of available resources, consumes less unnecessary energy, etc.

- **Operational peace of mind**

  Above all, the NOC provides something that is difficult to quantify but key in critical environments: peace of mind. The certainty that the network is being monitored, understood and managed by a specialised team, even when the customer is not looking.

Sector adaptation

Industry | Connected factory

The network supports the production process, not the other way around.

Robots, AGVs and AMRs, computer vision, and OT systems share infrastructure with different latency and priority requirements. The NOC manages deterministic traffic, domain isolation, and stability under continuous load.

Controlled latency ▶ Critical traffic ▶ Coexisting OT/IT

Energy and mining

Coverage in isolated regions.

Autonomous trucks and all types of mining machinery require reliable, low-latency IoT connectivity to ensure proper operation in mines around the world. The NOC ensures high availability and operation of the private network.

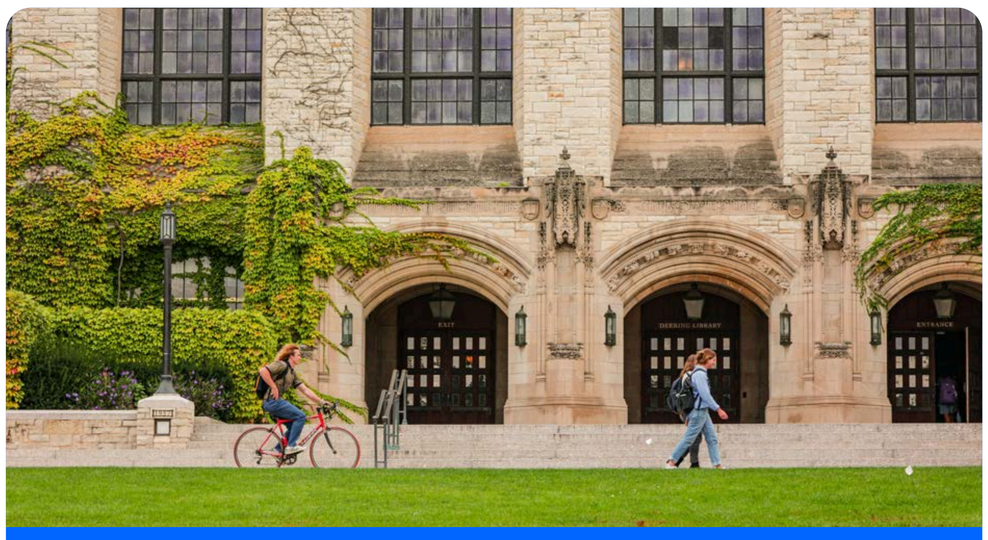
Availability ▶ Low latency ▶ Coverage

Ports, airports and logistics

The network moves at the pace of operations.

Vehicles, cranes, drones, and management systems operate in large, dynamic environments. The NOC maintains stable coverage, capacity, and latency while topology and load constantly change.

Mobility ▶ Large scale ▶ Stable latency



University campus

One network, multiple simultaneous realities.

Research, teaching, security, and digital services coexist with very different needs. The NOC manages segmentation, prioritisation, and scalability to enable innovation without compromising stable operation.

Segmentation ▶ Scalability ▶ Coexistence of uses

Health | Healthcare environments

Continuous availability in a zero-tolerance environment.

Clinical communications, real-time video and medical devices require strict segmentation and absolute control of changes. The NOC prioritises stability, traceability and isolation of sensitive traffic.

High availability ▶ Segmentation ▶ Sensitive traffic

Connectivity ▶ Interoperability ▶ Cyber Security