

THE WAY OF **DIGITAL** TRANSFORMATION

5G 
PRODUCTS

TELENTRA 5G MOBILE PRIVATE NETWORK

5G MPN



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TELENTRA
Networks

About TELENTRA Networks

TELENTRA Networks, an i2i Systems company, is a global Information and Communications Technology (ICT) provider specializing in next-generation core and access network solutions. Backed by extensive industry expertise, the company delivers a robust portfolio of advanced products tailored to meet the evolving demands of the telecommunications ecosystem.

TELENTRA Networks seamlessly integrates its proprietary core network products into both public and private 5G and LTE networks. Developed in strict compliance with 3GPP standards and specifications, these components offer maximum architectural flexibility, allowing for deployment either as a comprehensive, full-stack infrastructure or as independent standalone modules. Beyond its production-grade 5G Core Network Functions successfully deployed within Tier-1 mobile broadband operators, the company possesses profound expertise in PCF-PCRF solutions for mobile and fixed broadband, 5G Fixed Wireless Access (FWA), and private 4G/5G network deployments.

Customers



Partners



TELENTRA 5G MOBILE PRIVATE NETWORK

The Foundation of Digital Transformation

In the era of Industry 4.0, businesses seeking to maximize production efficiency must embrace digital transformation.

With TELENTRA's **5G Mobile Private Network (MPN)** solution, enterprises move beyond simple connectivity into real-time operational intelligence. The **TELENTRA 5G Core (5GC)** in the solution delivers deterministic performance, ultra-low latency, and carrier-grade reliability. Its cloud-native, highly available, stateless, and secure architecture is specifically tailored to meet demanding enterprise KPIs. The TELENTRA 5GC comprises a full suite of cloud-native network functions (AMF, SMF, UPF, PCF, UDM, UDR, AUSF, NRF, NSSF, CHF) deployed on any Kubernetes-compatible platform. Built on 3GPP Rel. 18 standards, the TELENTRA 5GC ensures seamless interoperability with any 3GPP-compliant RAN vendor, eliminating vendor lock-in.

By seamlessly integrating wearable devices, industrial IoT sensors, robotics, and AI-powered video analytics, the TELENTRA MPN transforms operational environments into data-driven, autonomous ecosystems.

TELENTRA 5G MPN – Solution Highlights

- Turn-key end-to-end solution supporting 5G across Core, Management layers, and 5G RAN.
- A robust and secure Operation and Management (O&M) Center to provide a user interface to MPN customers to manage the core network and its subscribers.
- Fully compliant with 3GPP Release 18 standards
- Ultra-low latency and high-performance architecture
- High availability and redundancy – intra-site and inter-site geo-redundancy with Active-Active deployment
- Secure, cloud-native architecture with stateless, scalable network functions deployable on any Kubernetes platform
- Vendor-agnostic – seamless interoperability with any 3GPP-compliant RAN vendor, eliminating vendor lock-in
- Flexible deployment models: On-Premise (SNPN), Centralized, or Hybrid – adaptable to any enterprise environment

Solution Architecture Overview

The TELENTRA 5G MPN is a complete, end-to-end solution built on three integrated layers: 5G Core, Radio Access Network, and Management System. TELENTRA develops and owns the 5G Core network functions and the O&M Center. For the RAN layer, TELENTRA partners with certified 3GPP-compliant radio vendors, enabling a vendor-agnostic approach. Together, these three layers are delivered as a single, fully integrated MPN solution, giving enterprises full control over their entire private 5G infrastructure. It is depicted in the following figure.

TELENTRA 5G MPN - End-to-End Solution Overview

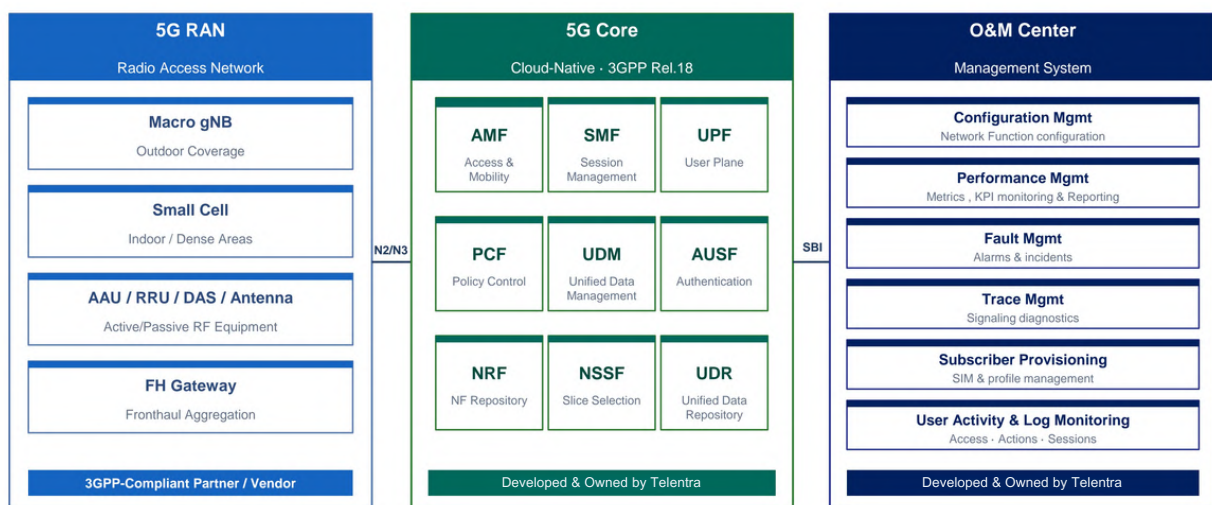


Figure 1: 5G MPN End to End Solution Overview

TELENTRA MPN enables:

- **Autonomous Systems**

Low-latency communication ensures deterministic control for AGVs, AMRs, robotic arms, and drones supporting precision navigation, collision avoidance, and coordinated fleet orchestration in dynamic industrial environments.

- **Industrial Automation & OT Convergence**

Secure integration with PLCs, SCADA, MES, and robotic controllers enables real-time synchronization across production lines. 5G replaces fragmented wired and Wi-Fi infrastructures with a unified, resilient wireless backbone.

- **Enhanced Operational Visibility**

High-definition video streaming combined with edge-based AI analytics delivers instant anomaly detection, quality inspection, perimeter security, and real-time asset tracking, reducing downtime and improving safety compliance.

- **Extended Reality (AR/VR/XR)**

High-throughput, low-latency connectivity supports immersive AR/VR applications for remote maintenance, digital twins, and expert-assisted operations, minimizing travel costs and accelerating workforce training.

- **AI-Driven Decision Intelligence**

Edge computing capabilities enable real-time data processing at the source, transforming raw operational data into actionable insights that drive improved throughput, predictive maintenance, and energy efficiency.

TELENTRA MPN Deployment Models

We offer three flexible deployment models based on the customer needs:

- 1. On-Premise (SNPN) Deployment:** A fully independent core established within your local facility for maximum data autonomy, sovereignty, and localized control.
- 2. Centralized Deployment:** High-tier connectivity via a multi-tenant O&M Center designed for reduced Capex and simplified, remote network management.
- 3. Hybrid Deployment:** Mission-critical components (such as the User Plane Function - UPF) are deployed at the edge for ultra-low latency, while control functions remain centralized for operational efficiency.

TELENTRA 5G MPN - SNPN Deployment Model

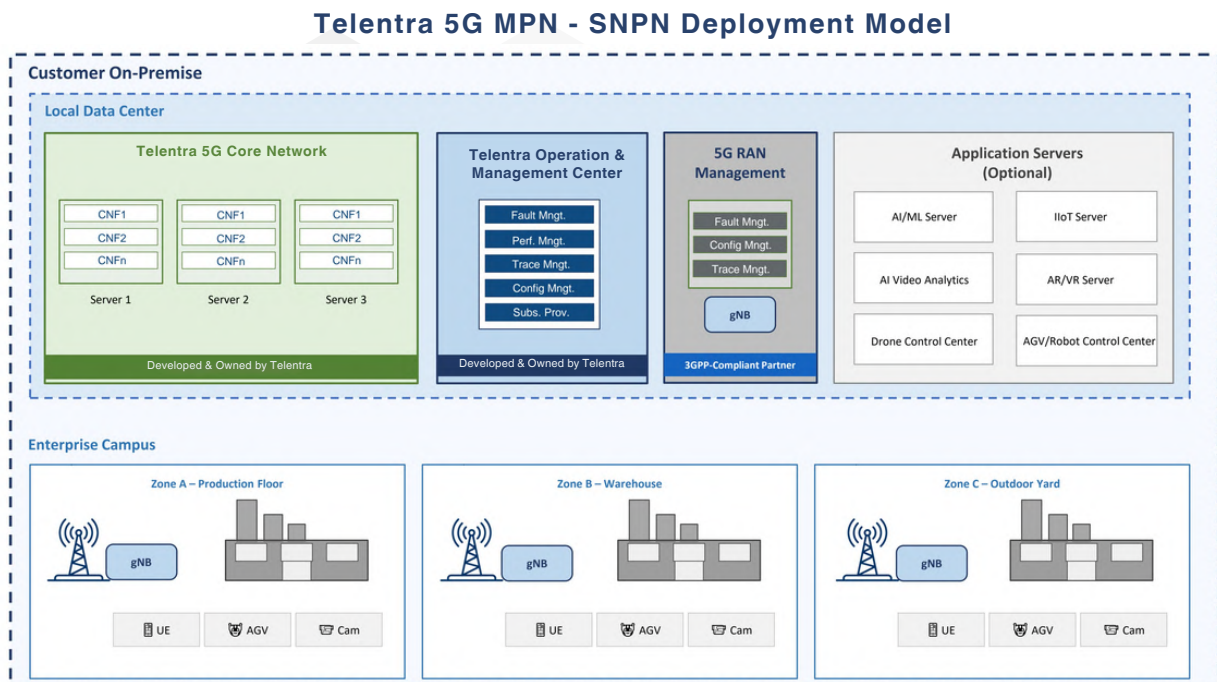


Figure 2: SNPN (On-Premise) Deployment — All 5G Core, RAN, and management components are hosted within the customer's local facility. Data remains fully on-premise, ensuring maximum sovereignty and security.

TELENTRA 5G MPN - Centralized Deployment Model

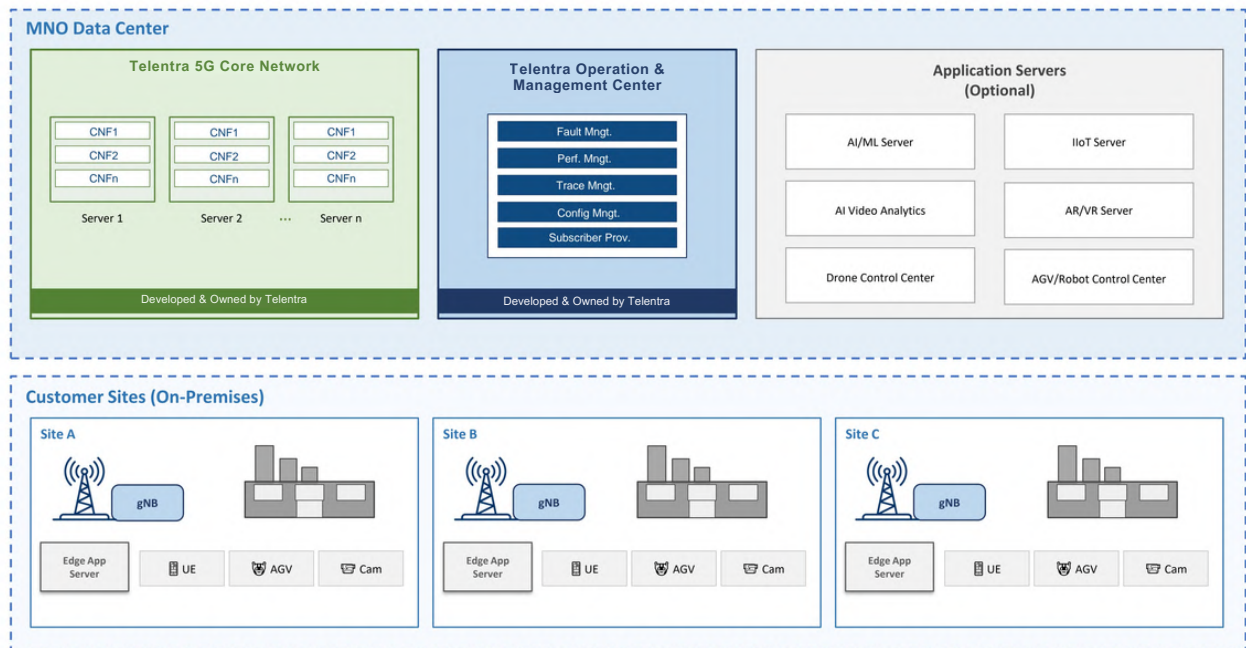


Figure 3: Centralized Deployment — The 5G Core and O&M Center are hosted centrally in the MNO Data Center; only the RAN equipment is installed at the customer site.

TELENTRA 5G MPN - Hybrid Deployment Model

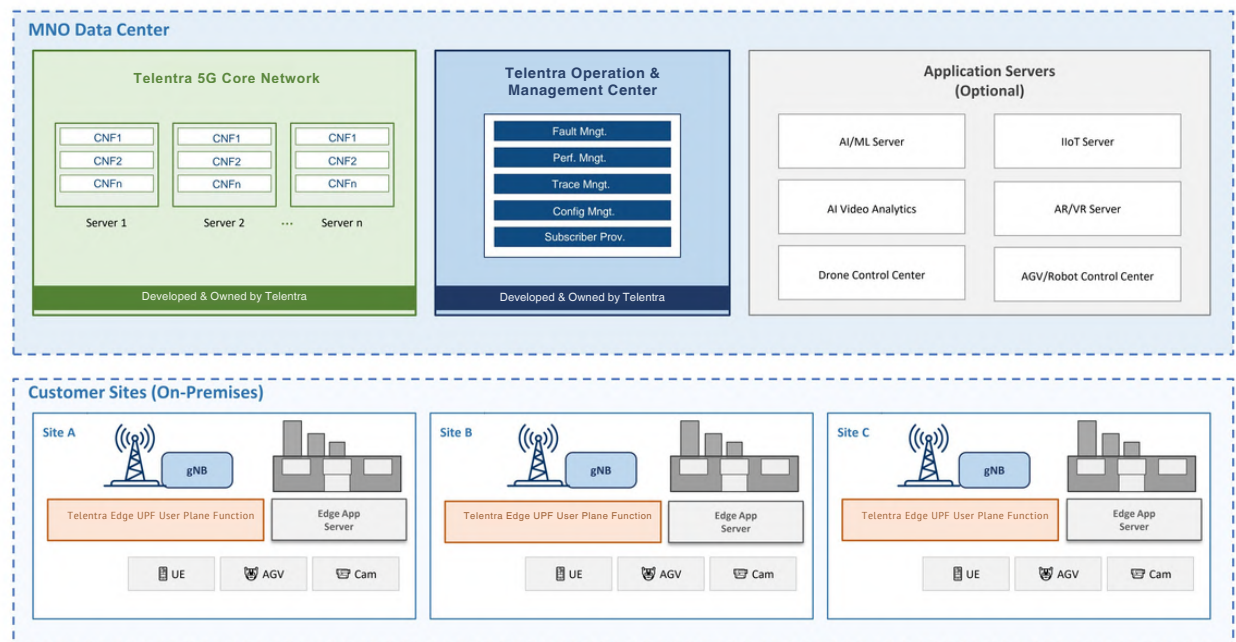


Figure 4: Hybrid Deployment — Core network functions and O&M are hosted centrally in the MNO Data Center, while the User Plane Function (UPF) and edge application servers are deployed on-site for ultra-low latency processing.

TELENTRA MPN O&M Center Capabilities

The TELENTRA MPN O&M Center is a unified, web-based management platform providing customers a single-entry point for all 5G Core management tasks (no local tools required). All applications share centralized Single Sign-On (SSO) and Role-Based Access Control (RBAC), with LDAP/Active Directory integration for enterprise environments. The O&M Center acts as the primary graphical user interface (GUI) for critical management functions, including:

- **Configuration Management:** Version-controlled NF configuration with lifecycle state management (Draft → Ready → Active). Changes apply at runtime (no service restarts required).
- **Performance Management:** Real-time KPI dashboards (Grafana) with metrics collected from NFs, threshold alerting, and report export.
- **Fault Management:** Automated alarm detection and instant notification across all network functions.
- **Trace Management:** End-to-end subscriber signaling trace with multi-protocol decoding (HTTP/2, DIAMETER, PFCP, NGAP, NAS-5GS), interactive sequence diagram generation, and PCAP export for Wireshark analysis.
- **Subscriber Provisioning:** Web-based SIM and subscriber management (SUPI, MSISDN, IMSI, service packages) with REST API for automated BSS/OSS integration.
- **User Activity & Log Monitoring:** Centralized audit trail tracking all user access, actions, and active sessions across the O&M platform, supporting compliance and security governance.

The 5G Advantage: Performance Guaranteed

The TELENTRA MPN infrastructure is engineered to meet the most demanding industrial KPIs, delivering sub-1ms latency, up to 100 Gbps throughput, and carrier-grade availability.

Performance Guaranteed - TELENTRA 5G Mobile Private Network

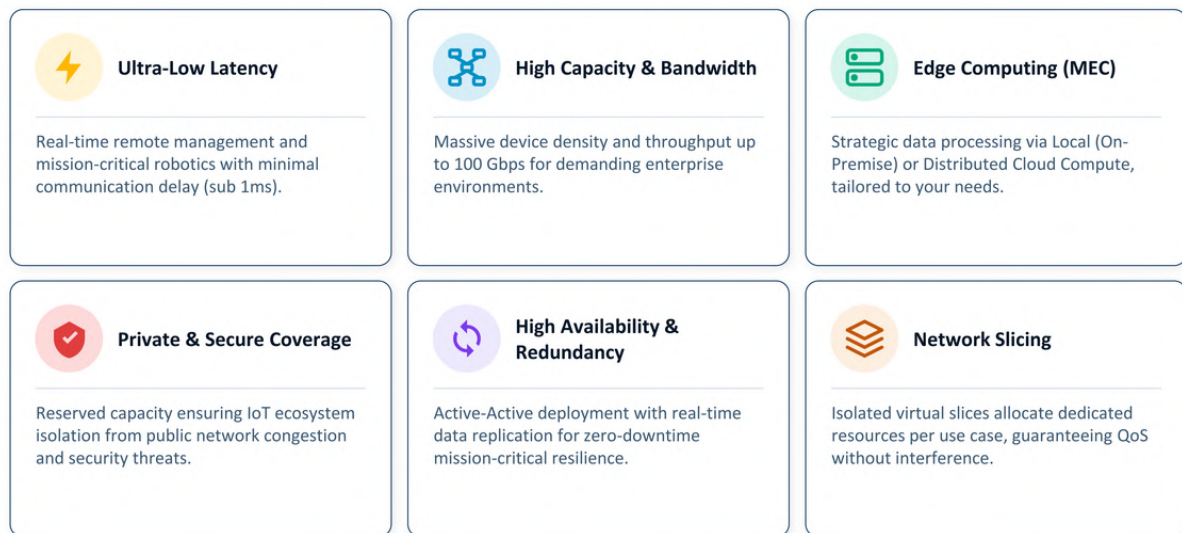


Figure 5: Performance Guaranteed — TELENTRA 5G Mobile Private Network

The TELENTRA MPN provides dedicated coverage within a defined geographical area, ensuring exclusive and secure access for your organization.

Get Started with TELENTRA 5G MPN

Ready to transform your operations with a private 5G network? Please contact us to get more information.

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