

Nokia MX Industrial Edge

An on-premises edge solution for accelerated OT digitalization

NOKIA

An integrated edge solution for Industry 4.0

Enterprises are embracing Industry 4.0 to improve efficiency, flexibility and the ability to adapt and scale quickly to changing customer and market needs. The key area for many industries is the transformation of operational technology (OT) environments. OT provides the technology solutions to monitor and control physical processes, systems, devices and infrastructure in many diverse production environments.

OT automation

Automation is a key focus of OT technologies, which depend on the integration and analysis of data from IoT sensors and other devices in real-time using algorithms created by artificial intelligence and machine learning (AI/ML). This processing of operational data, made possible by ubiquitous wireless and wireline connectivity, must be done close enough to the automated operation that edge clouds are preferred to ensure ultra-low latencies. Edge cloud processing on premises also ensures data sovereignty for the enterprise.

The Nokia MX Industrial Edge solution

The Nokia MXIE provides a high performance, resilient and secure edge solution or mission-critical industrial OT needs. It comes with a portfolio of ready-to-use industrial applications as well as industrial connectors to link to systems from a variety of vertically oriented OEMs. The MXIE provides an ecosystem neutral platform that enables enterprises to swiftly adopt any edge cloud application from public cloud providers, industrial partners and ISV applications to accelerate their digital transformation.



A fully integrated and scalable edge solution

Accelerate your time to business value with the Nokia MXIE solution. Simply install it on your premises and choose the applications you want from the application library. The MXIE takes care of application deployment and lifecycle management, automatically provisioning and prioritizing resources. All configurations, updates and upgrades are automatically replicated across all your industrial sites. The MXIE is available in a flexible consumption based Edge as a Service model to optimize your TCO and simplify management and operations complexity.

Mission-critical performance, reliability and security

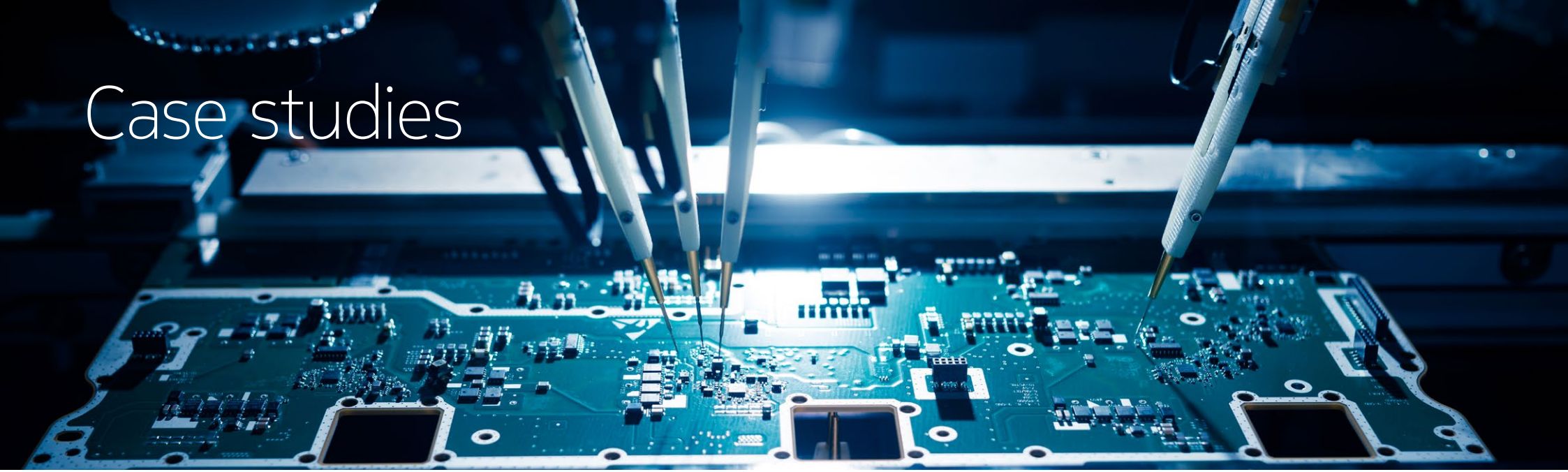
Enterprise customers from asset-intensive industries such as manufacturing, power utilities and transportation can be assured that the MXIE is designed to meet their most stringent mission-critical needs. The MXIE utilizes the high performance compute capabilities of Nokia AirFrame Open Edge with Intel Edge optimizations. Through the network exposure function, MXIE brings intelligence to end to end service performance management. The solution is fully redundant for high availability (HA) and geographical redundancy (GR). Security is assured with app-app isolation, transport layer security and role/attribute-based access permissions.

Simplified IIoT support

Industrial connectors ease integration with industrial automation systems. Protocols supported include: Profinet, Sigfox, Modbus, BACnet, ODBC, OPC-UA, CAN and BLE. The MXIE has a protocol-agnostic message bus for application to application and device communications. Integrated device management capabilities simplify device discovery and auto-provisioning and enables over-the-air software updates. The Integrated Operations Center on MXIE enables workflow automation across cyber-physical systems in the industrial OT environment.



Case studies



Port of Seattle employs the MXIE with 5G

The customer needed to increase the efficiency of port operations by simplifying the end-to-end workflow and better sharing data between different elements in the handling of containers from ship to yard to transport. They turned to Nokia to deploy private wireless based on 5G for the entire terminal. They used the MXIE edge cloud to not only host distributed functions of the 5G core, but as well, to handle terminal operating system data and their own industry-specific applications.

Handheld devices such as ruggedized workpads and handheld terminals were used across the terminal for mobile voice communications and yard inventory applications. This improved workflow by eliminating time-consuming paperwork and created improved situational awareness for workers for increased safety.

Global durables and electronic manufacturer, Arçelik, deploys MXIE

Arçelik recently selected Nokia and Turk Telecom to deploy Turkey's first 5G-ready private wireless network. The network will provide pervasive, reliable low-latency coverage throughout the facility to enhance automated guided vehicle (AGV) performance. With AGVs used throughout the manufacturing process for component logistics, improved connectivity will enhance AGV speed, control and operational efficiency.

The Nokia MX Industrial Edge hosts the private wireless core functions as well as specific applications such as high-accuracy indoor positioning for real-time asset location tracking as well as new video analytics-based applications for site safety and security. Further potential use cases include augmented and virtual reality, digital twins, inventory control, safety and facility management, quality control, high-resolution video for remote inspection, and facility-wide voice and video communication.

Why Nokia?

Over 300 large enterprise customers depend on Nokia's industry leading private wireless solutions today for resilient high performance industry connectivity. Our MX Industrial Edge solution extends the same mission critical resilience, high performance and security hardening for industrial OT edge computing. Delivered as a fully integrated Edge-as-a-Service, the MXIE optimizes your cost of ownership while simplifying IIoT integration complexity.

We have a wide portfolio of blueprint solutions that are enabled on the MXIE for manufacturing, transportation, energy and the public sector. In addition ,our professional services experts can help you customize industry specific use cases for your OT environment.



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About Nokia

At Nokia, we create technology that helps the world act together.

As a trusted partner for critical networks, we are committed to innovation and technology leadership across mobile, fixed and cloud networks. We create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Adhering to the highest standards of integrity and security, we help build the capabilities needed for a more productive, sustainable and inclusive world.

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