

**SOLUTION BRIEF**

# Nokia Technical Support Services with AI and ML

Proactive AI solutions for  
today's network challenges

**NOKIA**



# Harnessing AI for smarter, more efficient network support

As today's networks evolve, they bring increased complexity and new demands on performance, capacity and energy efficiency. Nokia's Technical Support Services with artificial intelligence (AI) are designed to address these challenges, providing an intelligent solution that meets the pressing and intricate needs of today's network environments.

The increasing complexity of mobile networks demands a technical support approach that can efficiently navigate artificial intelligence and machine learning (AI/ML)-powered environments. Traditional support models face significant hurdles:

- Identifying the root cause of network issues becomes more difficult with the growing number of interconnected components and potential failure points.
- Troubleshooting complex issues is often time-consuming, leading to extended downtimes and diminished customer satisfaction.

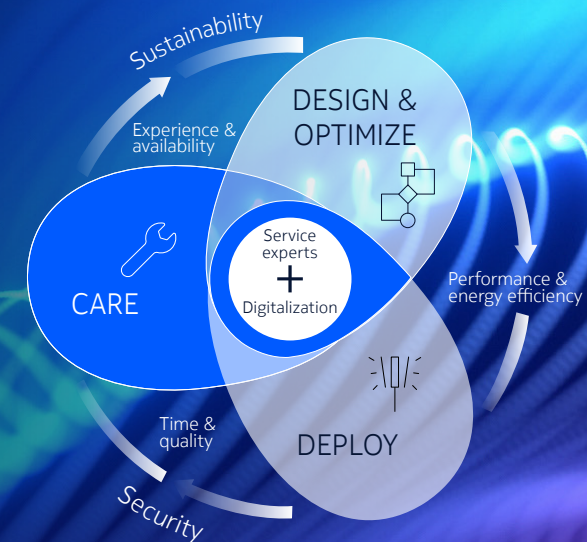
- Traditional support structures struggle to keep up with the rising volume and intricacy of network support requests.

To meet these challenges, Technical Support Services employs advanced AI and ML technologies to:

- **Automate Troubleshooting:** AI-based tools analyse network data to identify potential issues swiftly, reducing the time and effort involved in problem-solving.
- **Enable Predictive Maintenance:** ML algorithms forecast network failures before they occur, enabling maintenance before an issue occurs and minimizing downtime.
- **Enhance Knowledge Management:** AI optimizes technical documentation management, enabling support teams to access the right information efficiently.

- **Scale Support Operations:** AI-based chatbots and virtual assistants handle high volumes of support requests, allowing human teams to focus on more intricate cases.

In this solution brief, we will explore Technical Support Services as an integral part of the comprehensive Nokia Services Portfolio, delivering specialized support for efficient operations.



# Nokia's portfolio

Nokia's Technical Support Services offers a comprehensive AI and ML portfolio that supports telecommunications providers in managing complex, high-performance networks. The solutions in this portfolio drive measurable improvements, including up to 40% reduction in field maintenance costs, at least 85% accuracy in hardware failure predictions and 30% faster issue resolution with AI-based digital tools. Nokia's AI and ML solutions redefine network support, empowering customers and engineers alike with tools that improve operational efficiency, prevent issues before they arise and optimize network performance - all while significantly reducing downtime and costs.


## Specific solutions in Nokia's portfolio include:

### Nokia AI Digital Assistant

A key aspect of Nokia's AI and ML offerings is the Nokia AI Digital Assistant, the telco industry's first AI chatbot. Enhanced with Generative AI powered by Nokia's Large Language Model, developed in partnership with Bell Labs, this innovative solution streamlines information retrieval for faster and more effective support, empowering users with precise answers in record time. It streamlines operations for both customers and engineers, aiding in case deflection of simpler issues and reducing the volume of support tickets, ultimately resulting in more satisfied customers.

Available in two packages, the Nokia AI Digital Assistant is included in the basic software maintenance package.





An advanced option offers enhanced capabilities, correlating network data to provide rapid insights and reduce operational complexities. Currently, Nokia is expanding the Digital Assistant's reach to support deployment and network planning activities, significantly accelerating deployment timelines.

### **AI/ML-Driven Predictive Maintenance**

Nokia's Predictive Hardware Analytics Services leverage AI to provide a proactive approach to network health and performance. By analysing configurations, performance management data, alarms, RAN data and historical records, this service predicts hardware issues with at least 85% accuracy up to 14 days before a potential failure. This precision, which extends down to the exact serial number of individual network cards, enables network teams to address issues proactively, minimizing operational disruptions and enhancing hardware optimization.

With Predictive Hardware Analytics, Nokia customers can prevent unexpected failures, maintain continuity and reduce downtime, planning necessary maintenance actions in advance for uninterrupted network performance.

### **Predictive Software Analytics**

Nokia's Predictive Software Analytics service provides a comprehensive monitoring of network performance, allowing operations teams to identify anomalies, review performance trends, verify configuration changes and monitor alarms.

AI-based Predictive Software Analytics can predict critical network events and performance anomalies before they occur. It leverages Generative AI to provide intelligent analytics, enabling faster troubleshooting by isolating network issues and proactively detecting issues that affect end-user service.

### **Unified Troubleshooting Framework**

Nokia's Unified Troubleshooting Framework (UTF) provides an intelligent way to collect logs, traces and network data to support troubleshooting activities.

With multiple trigger mechanisms (on-demand, periodic, alarm based, real time health check based and auto-sending of logs), UTF ensures that the right data is automatically collected from the right network elements at the right time, significantly accelerating the troubleshooting process.

### **Case Handling Automation**

Nokia has implemented a range of AI/ML-powered automation assets to accelerate and augment troubleshooting activities once a customer raises a ticket.

These assets include structured data collection at case opening, intelligent and automated case assignment, smart analysis of network data and log/traces using large language models (LLM), and comprehensive knowledge capture and capitalization.

### **Software Upgrade Services**

In today's highly competitive telecom industry, maintaining superior network quality and accelerating time-to-market for innovative end-user services are tantamount to business success. Nokia's Software Upgrade Services addresses these needs by taking full responsibility for the successful deployment of software changes. This minimizes the risks associated with introducing new software into live networks while maximizing return on investment in network infrastructure.

Nokia's Software Upgrade Services leverages advanced automation tools to minimize human error and ensure consistency and quality during upgrades. Backed by AI-driven insights from an extensive data repository and global upgrade expertise, Nokia achieves high rates of first-time success in software deployments.

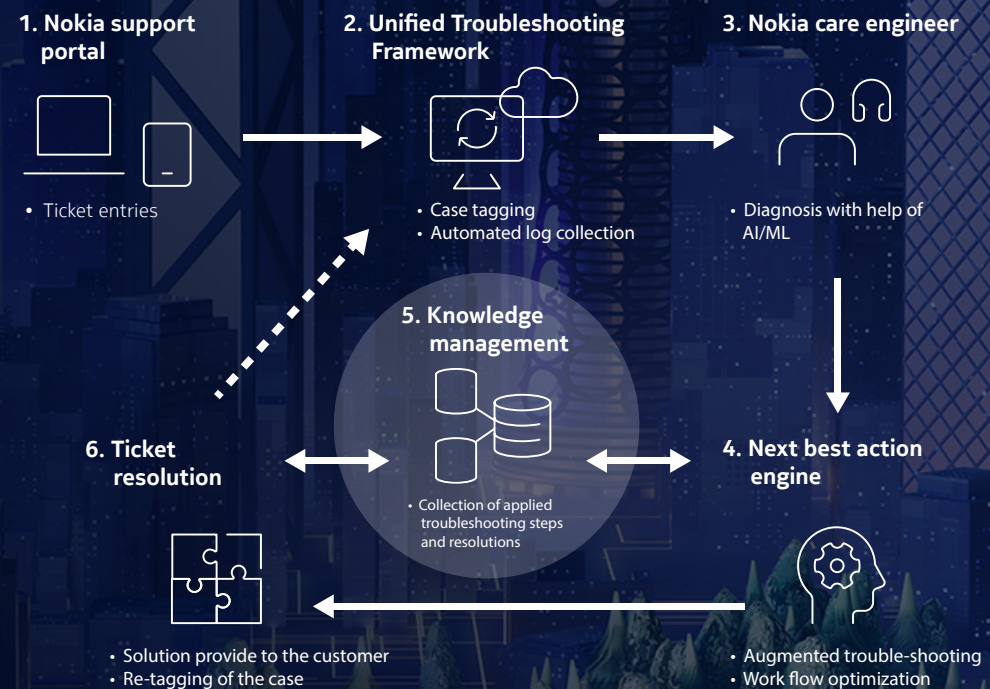
Additionally, the Software Upgrade Services digital platform provides enhanced transparency and simplifies workflows, enabling efficient and reliable software upgrades. By streamlining these processes, Nokia empowers operators to elevate network performance, ultimately driving customer satisfaction, and maintaining a competitive edge in the fast-paced telecom world.

# Successful customer use case – Safaricom

Nokia's AI-based root cause analysis has enhanced Safaricom's incident resolution process, improving both customer and engineer experiences. By implementing a structured approach with value stream mapping and proactive work instructions, Nokia has granted Safaricom's engineers the optimal tools for handling diverse ticket scenarios.

At the core of this transformation is Nokia's Unified Troubleshooting Framework (UTF), which allows engineers to quickly access similar cases and troubleshoot efficiently from a single interface, streamlining every step in Nokia's ticket-handling tool.

The result has been a 25% reduction in average case handling time, significantly improving both customer satisfaction and engineer productivity.



# Why Nokia?

Nokia stands out in the field of network support through its unique and patented Technical Support Services, combining advanced AI with digitization to streamline the way networks are designed, deployed and managed. With our AI-based Technical Support Services, Nokia enables smarter, more efficient network operations that proactively address challenges before they impact performance.

## Key Features of Nokia Technical Support Services:

### Industry's First Predictive AI

**Analytics:** Forecasts traffic patterns, detects interference and optimizes network design for unmatched efficiency and resilience.

### Comprehensive Automation:

- Streamlines quality checks.
- Manages site asset inventory with precision.
- Oversees acceptance processes to minimize manual effort and operational errors.

### Proactive Issue Resolution:

- Predicts and pre-empts site challenges before they impact performance.
- Automates software upgrades, reducing downtime and manual interventions.

**Streamlined Problem-Solving:** Ensures seamless and efficient resolution of network issues, delivering exceptional reliability.

This proactive approach reduces downtime, ensures seamless network experiences and supports both Nokia's customers and their end-users with consistent, high-quality connectivity. Nokia's commitment to AI-based support reflects its dedication to delivering reliable, future-ready networks.

Nokia's Technical Support Services set the benchmark for smarter, more efficient, and proactive network operations, ensuring the most comprehensive functionality in the industry. Our Technical Support Services is a part of our larger Mobile Networks Service portfolio and Nokia's AI for RAN proposition. For a greater overview of Nokia MN Services, please refer to the Services Solution Brief [here](#).

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# NOKIA

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

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

With truly open architectures that seamlessly integrate into any ecosystem, our high-performance networks create new opportunities for monetization and scale. Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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