Managed Services for Railways
You’ve invested in a world-class railway communications infrastructure

Communication networks play a vital role in helping railway operators ensure safe, efficient and on-time connected journeys. These networks are how mission-critical information is shared on-the-go between railway systems and personnel, at high speeds across large distances. That’s why leading railway operators around the world are significantly investing in the highly resilient, future-proof network infrastructure based on proven standards.

However, new age technology requires an equal focus on high performance operations and operational transformation to deliver maximum benefits. This requires a fundamental overhaul of traditional processes and tools and retraining of operations and maintenance personnel. Deep technical expertise is essential to uncover and resolve faults, ensure high performance network management and security from cyber-attacks. Automation of processes also brings increased responsiveness while analytics help detect and resolve issues in advance for flawless performance.

But do you have the operations expertise to match?
That’s where Nokia Managed Services can help

Our revolutionary service delivery model is powered by Nokia AVA, our cognitive services platform that delivers services quickly and flawlessly. Our end-to-end network expertise and local presence in more than 55 countries complements our extensive experience in managing mission critical railway communication networks.

That’s why we are the partner of choice for rail operators looking for highly responsive network operations, flawless performance, comprehensive and continuous security with a laser focus on simplification and OPEX reduction.
Managing the transformation to consolidated all-IP mission critical railway networks

Railway communications networks are undergoing a fundamental transformation—the move from legacy transport and access technologies towards a single, consolidated all IP network to meet their mission critical network needs, launch new services, optimize costs and ensure interoperability.

But, they face a key challenge—ensuring reliability and optimal operations for the new IP based communications infrastructure. Operating IP networks is fundamentally different from operating legacy networks—it needs different skills, different processes and a whole new set of tools.

Nokia’s experts from the Operations Design and Consulting service perform an in-depth assessment and benchmarking of NOC capabilities and operational readiness for IP transformation. This includes tailor-made recommendations for improvement from Nokia’s Operations Transformation service. This focuses on transforming the role of employees, processes, tools, 3rd party contracts, and assets to effectively operate new network technologies and/or new business models and ensures compliance with railway RAMS standards.

Helping Swiss Federal Railways achieve stringent security and safety requirements for their next generation xWDM and IP networks

The challenge
Swiss Federal Railways (SBB) had deployed next-generation xWDM and IP networks for mission critical services and business IT. To comply with security and safety requirements of the Federal Office of Transport, SBB needed to adapt their organization and processes to meet EN 50159, EN 50126, EN 50159 (European norms for RAMS—Safety, Availability, Maintainability and Serviceability).

What we did
To ensure compliance, Nokia’s experts had to fundamentally reengineer SBB’s operations processes and redesign the Operations and Maintenance organization. The existing data network was re-certified and the new data network was certified to be compliant with the latest regulatory requirements. Nokia also delivered a comprehensive training and coaching program on RAMS norms and relevance to SBB personnel.

Benefits
Nokia enabled SBB to become one of the first railway operators to fully adapt their operations to comply with the new international standards. This also reinforced SBB’s reputation for punctuality and safety towards their customers.
Ensuring mission critical safety and availability for railway communications while reducing OPEX

Operations and maintenance is key to ensuring the mission critical safety and availability for railway communications. The EN50126 railway standard shows how to control the RAMS parameters. According to EN50126, “Attainment of in-service safety and availability targets can only be achieved by meeting all reliability and maintainability requirements and controlling the ongoing, long-term, maintenance and operational activities and the system environment”.

Nokia’s Network Management Service leverages our experience of working with 160+ transportation customers, Nokia’s expertise and market leadership in GSM-R and best operational practices managing 200+ operations contracts across 55 countries. The Network Management Service ensures flawless operations performance for railway communications through a team of specialized experts, standardized operational processes based on eTOM and ITIL, automation, network analytics and significant investments in establishing a standardized tool landscape. Operations processes are optimized through continuous improvement.

The Network Management Service also delivers OPEX benefits and simplifies operations management in a multivendor network environment.
“We have worked with Nokia for some 15 years and have been very happy with the company’s exceptional performance. In the past decade, Nokia has been involved in all our telco-related projects and has promoted modernization to help reduce our operational costs. Now with this major contract, we are beginning to reap the benefits of a simplified maintenance management environment and a program of modernization that will help us to deliver a better passenger experience.”

Mr. Mariano Garcia, Telecommunications maintenance manager Adif
Protecting railway communications from cyber-attacks

Today's interconnected railway communication systems present an increased vulnerability to cyber-attack. Also, the growing use of sensors, meters, surveillance cameras and other devices to support real-time monitoring creates the possibility of backdoor intrusions through a compromised endpoint.

Nokia’s Managed Security Service is an end-to-end security solution that helps prevent, detect, respond to and recover from attacks. It continuously manages an operator’s security infrastructure to protect against all applicable cyber-threats and meet all security standards and regulations.

Customers benefit from a sustained security program with effective detection and response mechanisms and from Nokia’s expert security knowledge across all facets of the railway communications network.
A trusted partner delivering and managing state-of-the-art networks for Railway operators worldwide

Nokia has over 200 managed services contracts across various markets. Our extensive experience with centralization, automation and operation of network is based on multiple managed services projects over the last 15 years. We are also the market leader in standardized railway communication networks like GSM-R and our deep technical expertise plays a key role in our success in managing the communications infrastructure for our Railways customers.

With a proven track record in outsourcing and technological innovation, Nokia can provide unique value to Railway operators who want to maximize the benefits from their investments.

Nokia Networks Managed Services - Facts and figures

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<thead>
<tr>
<th>500+ Contracts managed</th>
<th>650 m Subscribers managed</th>
<th>1.1 m Network elements</th>
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<tbody>
<tr>
<td>66% Multivendor deliveries</td>
<td>50% Remote delivery</td>
<td>99.7% Network availability</td>
</tr>
<tr>
<td>80+ Strong partner ecosystem</td>
<td>10,000 m Nokia MS employees</td>
<td>55 Countries MS operations</td>
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Unmatched delivery capability

- 6 Global delivery centers
- 4 Delivery hubs
- 13 Local delivery centers
- 4 Special scope data centers
About Nokia

We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers, with the industry’s most complete, end-to-end portfolio of products, services and licensing.

From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in digital health, we are shaping the future of technology to transform the human experience. networks.nokia.com

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