

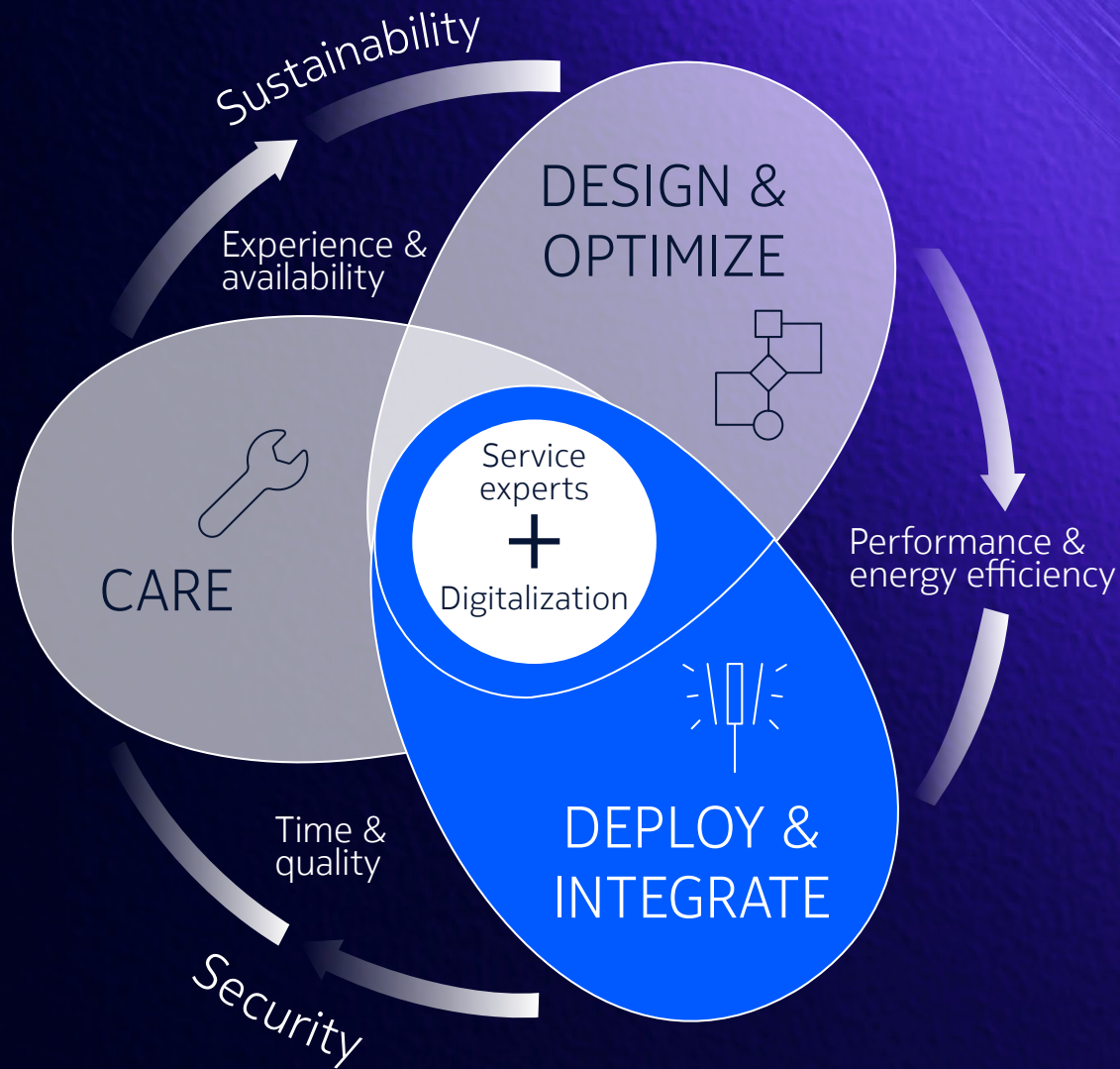
**SOLUTION BRIEF**

Nokia Deploy &  
Integrate Services  
enhanced with  
Digitalization and AI

**NOKIA**



# Nokia Mobile Networks Deploy & Integrate Services



Nokia Mobile Networks Deploy & Integrate Services are an integral part of our broader MN Services portfolio, managing the entire network deployment process through a unified digital twin platform. This comprehensive approach spans site acquisition, engineering, project management, telecom implementation, subcontractor coordination and real-time site acceptance.

In recent customer projects, this approach reduced time to market by over 30%, delivering first-time-right quality and driving significant business impact for our customer.

This solution brief outlines various aspects of Nokia MN Deploy & Integrate Services, and how we are leveraging AI and digital twins to move from manual tasks to fully digitalized operations.

For the full overview of our Services portfolio, find the solution brief [here](#).

# Faster time-to-market with consistent quality



## Partly digitalized

Fragmented  
hard to manage processes

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Wasteful use  
of manual labour resources

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Inconsistent,  
local solutions

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Complicated collaboration

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Mentally taxing operations

## Fully digitalized

Transparent  
→ Total control & customer involvement

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Sustainability  
→ allocating routine work to AI

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Reliability  
→ removing human error + better data mgmt.

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Collaboration  
→ in real-time

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Efficient orchestration  
→ of workflows

At Nokia we are transforming operations by moving from manual tasks to fully digitalized operations, freeing teams from time-consuming, repetitive work and letting technology do the heavy work for us.

Our digital tools enable stakeholders to access project data in real time, allowing them to stay up-to-date on deployment progress and status. A centralized platform improves communication, allowing more effective collaboration between team members and stakeholders, thereby reducing errors and providing more clarity at each phase of the project.

By adopting digital tools, we provide a standardized approach to project management, which improves project transparency and accountability.

# AI and digitization across Deploy & Integrate Services

## Project execution foundation

### Workflow orchestration:

- Standardize processes and workflows, making it easier for team members to understand their tasks and how to proceed.
- Automate routine tasks, such as status updates and approvals, permitting team members to focus on more important tasks.
- Provide a platform through digital tools, enabling team members to share information and work together more efficiently and effectively.

### Digital rollout management:

- Plan and schedule rollout activities to ensure timely completion within budget.
- Facilitate more effective collaboration during rollouts, with enhanced information sharing and teamwork.
- Test and monitor the rollout process to quickly identify and address any issues or bottlenecks.

### Logistics management:

- Automate routine logistics tasks, such as inventory management and order tracking.
- Enable real-time tracking of inventory and shipments, keeping logistics managers updated on the status of their products and materials.

As of today, more than 100 customer projects around the world have used our digital deployment services. Remote/virtual asset and project monitoring have reduced costly extra site visits by **25%**, improved installation quality by **30%** and reduced cycle times by **30%**.

Project  
management

Site  
engineering

Telecom  
implementation

Site  
acceptance



# AI and digital twin-based site engineering

## Next-generation high-precision virtual site replica as master source for site deployment

### Challenges

- Critical need for accurate plans
- Strict timeline for documents created on site
- Competence on-site needed
- Hard to match all CSP requirements

### Business outcomes

- 2 weeks faster time to revenue
- 2 out of 3 site visits saved
- Improved Health & Safety

Site Engineering and Design are critical for deployment execution, as they directly impact the timeline and quality of site implementation.

To enhance this process, Nokia has introduced a unique **Digital Site Twin** solution which works as a master source of information for all site-related activities.

By leveraging advanced digitalization platforms, we create a virtual 3D copy of the site, enabling standardization and engineering optimization to ensure the most efficient design for our customers.

The benefits are clear: First-Time-Right engineering, thereby reducing the design phase timeline by 20%. We are creating an exact digital copy of the site which is available at any time for future reference or use, such as new site expansion evaluations or new project planning.



Project  
management

Site  
engineering

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implementation

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# Fully digital SW configuration and HW deployment

## Telecom implementation with fully digital workflows



### Challenges

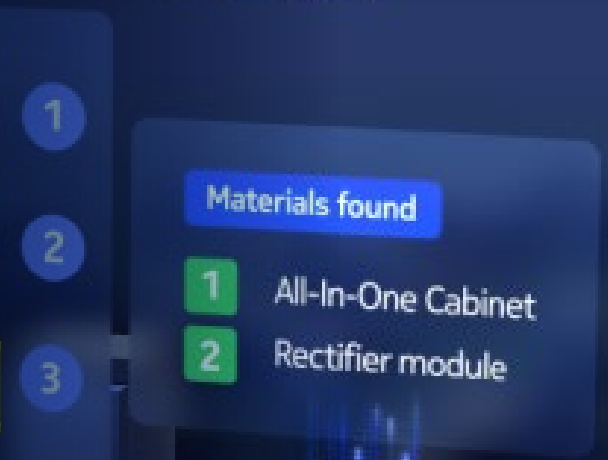
- Inconsistent site build quality
- Complex Logistics
- Demanding delivery times

### Business outcomes

- First time right data build
- Fully automated workflow
- Paperless documentation

When implementing planned site configurations, the aim is to deliver consistent, high-quality site builds. Managing the logistics of the huge amounts of hardware and software required for each site is a significant challenge, especially with the demanding schedules involved in deploying thousands of sites across a network.

To manage this complexity, Nokia relies on fully digitalized commissioning for both hardware and the software site installations. Our digital approach allows for real-time monitoring of field activities, resulting in complete transparency throughout the process. With machine-learning driven workflows, reliable checklists and streamlined execution, we are improving the first-time right quality of installations by 30%.



Project management

Site engineering

Telecom implementation

Site acceptance

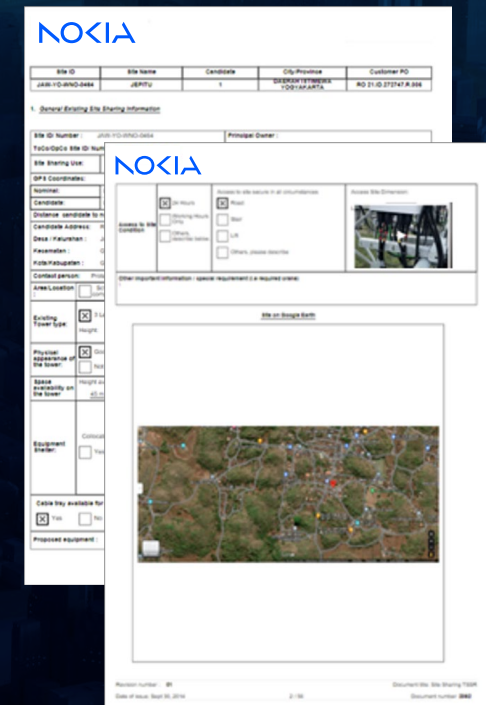
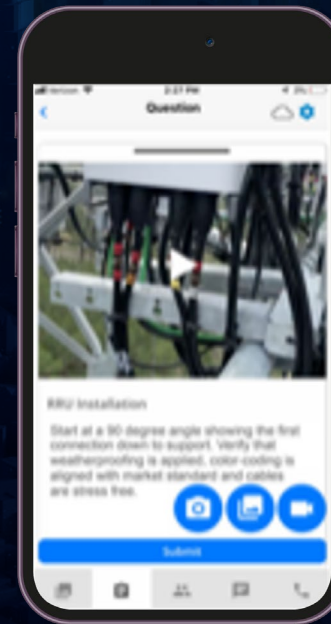
# Remote site acceptance

## Digital remote collaboration with our customers

We leverage AI for automated quality checks, site asset inventory and even digital site acceptance processes, saving time and resources.

A common source of manual delays is the acceptance certification, which typically involves multiple parties and can cause unnecessary extra site visits. With Nokia remote collaboration tools, we create an optimized process to ensure all requirements are met on time, generating acceptance automatically without the need for paper documentation. This results in 66% faster acceptance process (from 3 days to 1), ensuring business continuity even during challenging periods, such as COVID pandemic.

During one of our customer's network project early last year, only 50 out of 100 sites were accepted on the first attempt. At the end of the year, thanks to our digital workflows, this improved to 98% of the sites being accepted at first time, dramatically increasing project success.



Project management

Site engineering

Telecom implementation

Site acceptance

# Improve Health and Safety Services with AI/ML

## People's safety comes first



Through Artificial Intelligence and Machine Learning (AI/ML), we digitalize processes to enhance safety for our customers, subcontractors and suppliers.

### Digital safety checks:

Our AI/ML-enabled tools mitigate the need for manual safety checks. With digital site walks, physical on-site presence is no longer required, reducing risk and enhancing efficiency. Field crews can utilize our advanced mobile app for:

- Hazard recognition
- Site check-ins and check-outs
- Acknowledgment of site-specific alerts
- Verification of personal protective equipment (PPE) before work begins

### Streamlined approvals with AI:

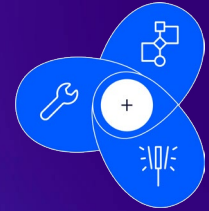
For more streamlined on-site checks, workers can simply upload photos from their mobile phones to our digital platform, where AI algorithms inspect and provide clearance for tasks.

This AI/ML approach is integral to our daily operations, with millions of checks already performed using Nokia's existing field applications. Our motivation is simple: we want to ensure everyone goes home safely every day.



# Hazard Detection Lens

AR/AI assistance for simple identification of on-site hazards

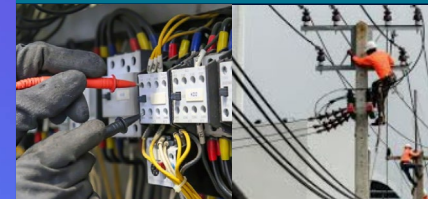


## AI/AR Hazards identification

- AI-assisted site hazards identification & warning enhance the safety of the field crew
- Actively engages field crew through auto-launched mobile app, actively enabling real-time hazard identification
- Identified hazards are recorded in NDPd for future reference, providing analytics for crew enablement/training when working at the same site



## Hazards samples



Open Electric box

Overhead Cables



Transformer

Skylight



Chimney

Generator

## Benefits

Hazards check digital assistance

Assure compliance

Reduced health and safety risks

# The journey to touchless execution

## Delivery and Customer experience transformation with AI

At Nokia, we want to double down on our efforts to advance toward autonomous delivery, with a clear goal for Mobile Networks services to achieve level 4 in the TMForum-defined autonomous networks framework. TMForum's framework, which assesses automation levels from 1-5, is the first to offer a coherent, industry-wide standard for measuring automation maturity. This is rapidly becoming a new industry norm, adopted by major operators like Orange and Telefonica groups. Reaching Level 4 indicates high autonomy, where machine-driven processes handle most activities, including cross-domain automation, while still allowing for human oversight. Our aim is to achieve this by the end of 2026, covering 60-80% of our operations.

### Laying the foundation for automation:

To support this transition, we are optimizing workflows, delivery models and processes, creating a solid foundation for applying digital technologies and AI where appropriate. At the same time, we are focusing on simplifying physical tasks, with serviceability being a key enabler for both automation and operational efficiency.

### Enhancing customer interactions:

A crucial part of this process is maintaining strong operational customer interactions, enabling timely information exchange between frontline and developments teams. This will not only drive automation, but also help streamline physical operations, enabling us to further optimize our workforce – ensuring that we have the right people, with the right skills in the right place, at the right time.

### Leadership in network innovation:

Nokia's deep expertise in network innovation, decades of telecom experience and advanced automation solutions put us at the forefront of this transformation. Our advancements in AI and strong partnerships with global operators support seamless autonomous network transitions. With a proven record in high-performance networks, we deliver future-ready solutions for digital transformations such as these.



Business outcome
Automation maximized
Physical work simplified
Navigate network complexity
Zero fatalities

# Customer Case Study: Bharti Airtel

## Efficient end-to-end network expansion amid complex challenges



### Situation

- High-volume rollout
- Stringent timelines
- Multi-layer, multi-vendor, multi-technology network expansion

### Benefits

- 12,000+ sites delivered despite COVID-19 complications
- Strengthened project management capabilities
- Guaranteed qualified processes
- Crew available at the right time and place

### Solution

- Nokia automated service delivery platform
- Harmonized deployment processes
- Workflow orchestration
- Cover the entire deployment lifecycle



## Accelerated deployment timelines across regions:

EUR CSP

Faster  
time in air 14%

MEA CSP

Faster  
time in air 30%

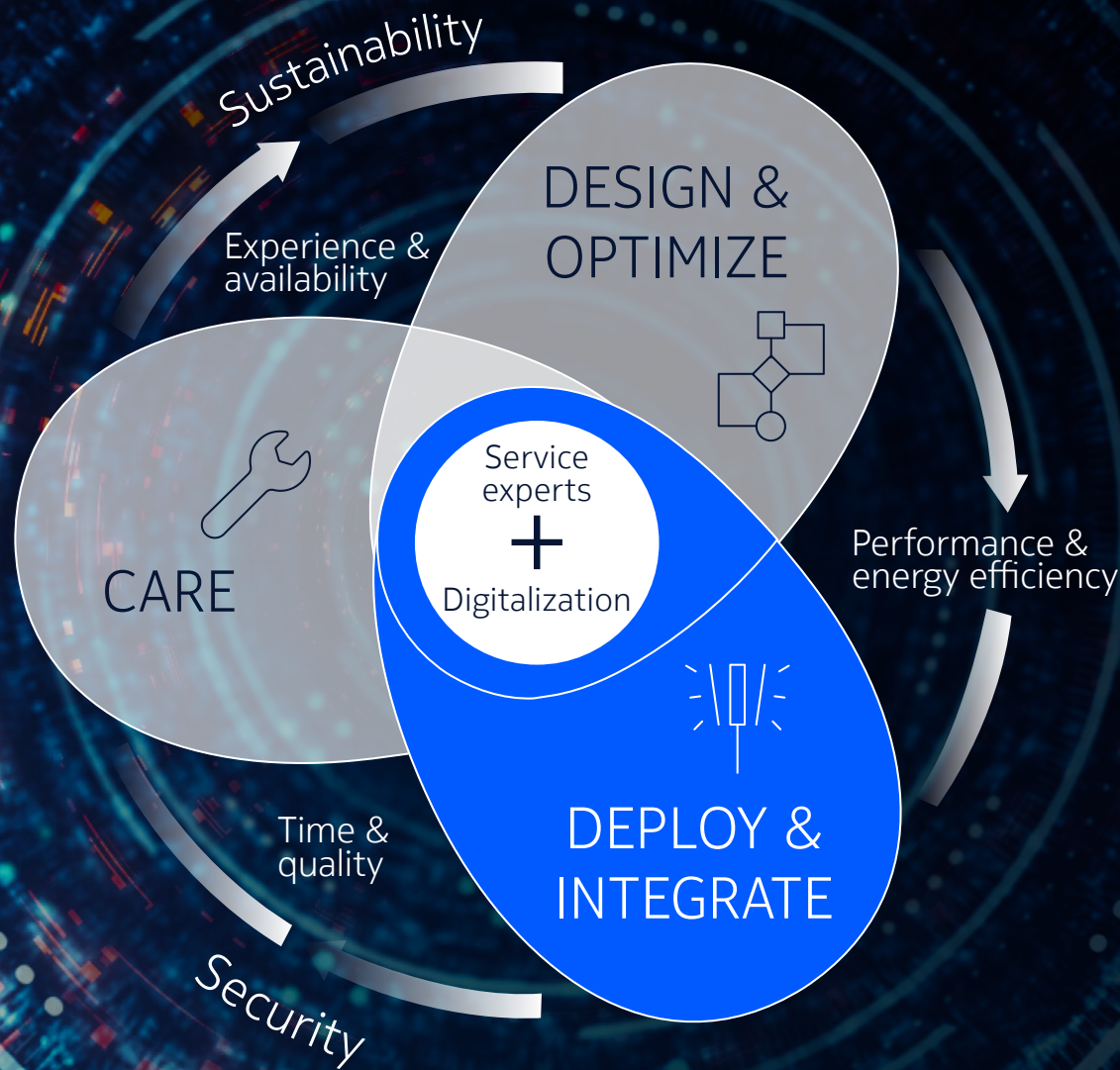
APJ CSP

Faster  
time in air 39%

APJ CSP

Faster  
time in air 28%

# Why Nokia?



Nokia is a trusted partner in network deployment with its fully integrated approach to Mobile Networks Deploy & Integrate Services. Leveraging a unified digital twin platform, we cover every step in the deployment process, from site acquisition and engineering to real-time site acceptance.

Through digitalization, Nokia is transforming traditional manual tasks, enabling automated, transparent workflows and effective collaboration across stakeholders. This shift goes beyond minimizing repetitive tasks by also enhancing project transparency and accountability.

## Key benefits for our customers include:

- First-time-right quality: A data-driven approach ensures precision and reduces the need for rework, delivering substantial business benefits.
- Streamlined digital automation: Automated, transparent workflows replace manual processes, enhancing efficiency and stakeholder collaboration.
- Integrated deployment services: Nokia provides end-to-end support, from site acquisition to real-time site acceptance, leveraging our unified digital twin platform.
- Faster time-to-market: Advanced AI and digital twin technology have reduced deployment timelines by over 30% in recent projects.

With over 100 customer projects worldwide deploying our digital deployment services, clients experience quicker rollouts, reduced costs and improved installation quality. With Nokia's proven track record and innovative solutions, we can help you empower your future-ready digital transformations.

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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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