

Nokia's digitalization of its 5G Oulu factory recognized by the World Economic Forum as an "Advanced 4th Industrial Revolution Lighthouse"

Wednesday 3 July, 2019

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Espoo, Finland - Nokia's 5G "factory of the future" in Oulu, Finland was selected by McKinsey and the World Economic Forum as an Advanced 4th Industrial Revolution (4IR) Lighthouse, reflecting leadership and proven success in adopting and implementing 4IR technologies at scale. Leveraging Nokia technologies to digitalize its own pre-production facility demonstrates Nokia's ability to digitally transform and modernize its customers' manufacturing facilities for Industry 4.0.

Designed to showcase Industry 4.0 concepts for the manufacturing of Nokia 4G and 5G base stations, the "factory of the future" in Oulu leverages Nokia's [private \(4.9G/LTE\) wireless](#) networks for secure and reliable connectivity for all assets within and outside the factory, [IoT analytics](#) running on [Edge cloud](#), and a real-time digital twin of operations data. The factory, which produces 1,000 4G and 5G base stations per day, generated significant annual improvements, including more than 30 percent productivity gains, 50 percent savings in time of product delivery to market, and an annual cost savings of millions of euros.

The Lighthouse program, conducted in collaboration with McKinsey, includes select Lighthouse factories that are transforming work to make it safer, less repetitive, diversified and productive. Nokia was selected as a Lighthouse by an expert panel based on its implementation of 4IR technologies that drove financial and operational impact in the Oulu factory. As part of the Global Lighthouse Network, Nokia will collaborate with other world leaders to share knowledge and best practices to help enterprises and manufacturers adopt the technologies of the future, and overcome key challenges enterprises face during their digital transformation journeys.

Kathrin Buvac, President of Nokia Enterprise and Chief Strategy Officer, said:

"We are paving the way for enterprise customers to realize the vision of Industry 4.0 and industrial automation by applying our technology to our manufacturing needs. For our Oulu 5G facility, we created a 'factory of the future' environment leveraging private wireless networks for reliable and secure in-factory connectivity, edge cloud and IoT analytics. We are very pleased that our technology has delivered productivity gains of over 30 percent for our factory and we look forward to share this expertise with customers, helping them accelerate growth and unlock their full potential."

Most manufacturers seek to increase flexibility while automating and reconfiguring factories. Nokia's expertise adjusting to high-demand environments ensures that the company is well equipped to lead enterprises into the Industry 4.0 era. The award-winning factory of the future illustrates how customer facilities can reap the benefits of increased productivity, agility, product quality, and product lead time for their businesses, as achieved in Oulu.

Demonstrated use cases in Oulu pre-production factory include:

- Virtualization of new product introduction (NPI)
- Flexible robotics to ensure high-productivity and agility for continuous new ramp-ups
- 4.9G/LTE Private wireless network to speed up NPI line re-layout
- Cloud-based digital data control, enabling real-time process management
- No-touch internal logistics automation via connected mobile robots

Heikki Romppainen, Head of Oulu Factory, Nokia, said: "For factory employees, the automation of our Oulu manufacturing environment increases flexibility and adaptability. The 'conscious factory' has evolved the working ecosystem - increasing motivation and the wellbeing of employees by automating the traditionally repetitive tasks, making work more diversified and productive."

Resources:

- Images - use cases: [Industry 4.0 use cases at Nokia Oulu factory](#)
- WEF White paper: [Fourth Industrial Revolution: Beacons of Technology and Innovation in Manufacturing](#)
- Strategic White paper: [Networking solutions for the new age of industry](#)
- Webpage: [Edge cloud](#)

- Video: [Nokia and Telia leverage 5.0 performance for Industry 4.0](#)
- Images: [Nokia for Industries media library](#)

About Nokia for Industries

Nokia has deployed over 1,000 mission-critical networks with leading customers in the transport, energy, large enterprise, manufacturing, webscale and public sector segments around the globe. Leading enterprises across industries are leveraging our decades of experience building some of the biggest and most advanced IP, optical, and wireless networks on the planet. The Nokia Bell Labs Future X for industries architecture provides a framework for enterprises to accelerate their digitalization and automation journey to Industry 4.0.

About Nokia

We create the technology to connect the world. We develop and deliver the industry's only end-to-end portfolio of network equipment, software, services and licensing that is available globally. Our customers include communications service providers whose combined networks support 5.7 billion subscriptions, as well as enterprises in the private and public sector that use our network portfolio to increase productivity and enrich lives.

Through our research teams, including the world-renowned Nokia Bell Labs, we are leading the world to adopt end-to-end 5G networks that are faster, more secure and capable of revolutionizing lives, economies and societies. Nokia adheres to the highest ethical business standards as we create technology with social purpose, quality and integrity. nokia.com

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