



NOKIA

Enabling the next level of digitalized production

Conscious Factory of the future

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1st Step of industry 4.0

Digitalization by connecting
all assets.

90% of today's data
not yet collected!

Future networks will significantly change the manufacturing world as we see it

Connectivity | Flexibility | Artificial Intelligence | Collaboration | Remote Control

All goods connected

Full visibility of physical and environmental entities, its relationships and interworking across the entire value chain

Flexible layouts and mobile assets

Setup of tools, assets, facilities can be changed flexibly and quickly on demand

Cognitive supply chain

Big data fueled artificial intelligence and self-learning processes creating self-optimizing supply networks

Connected workers collaborating with machines

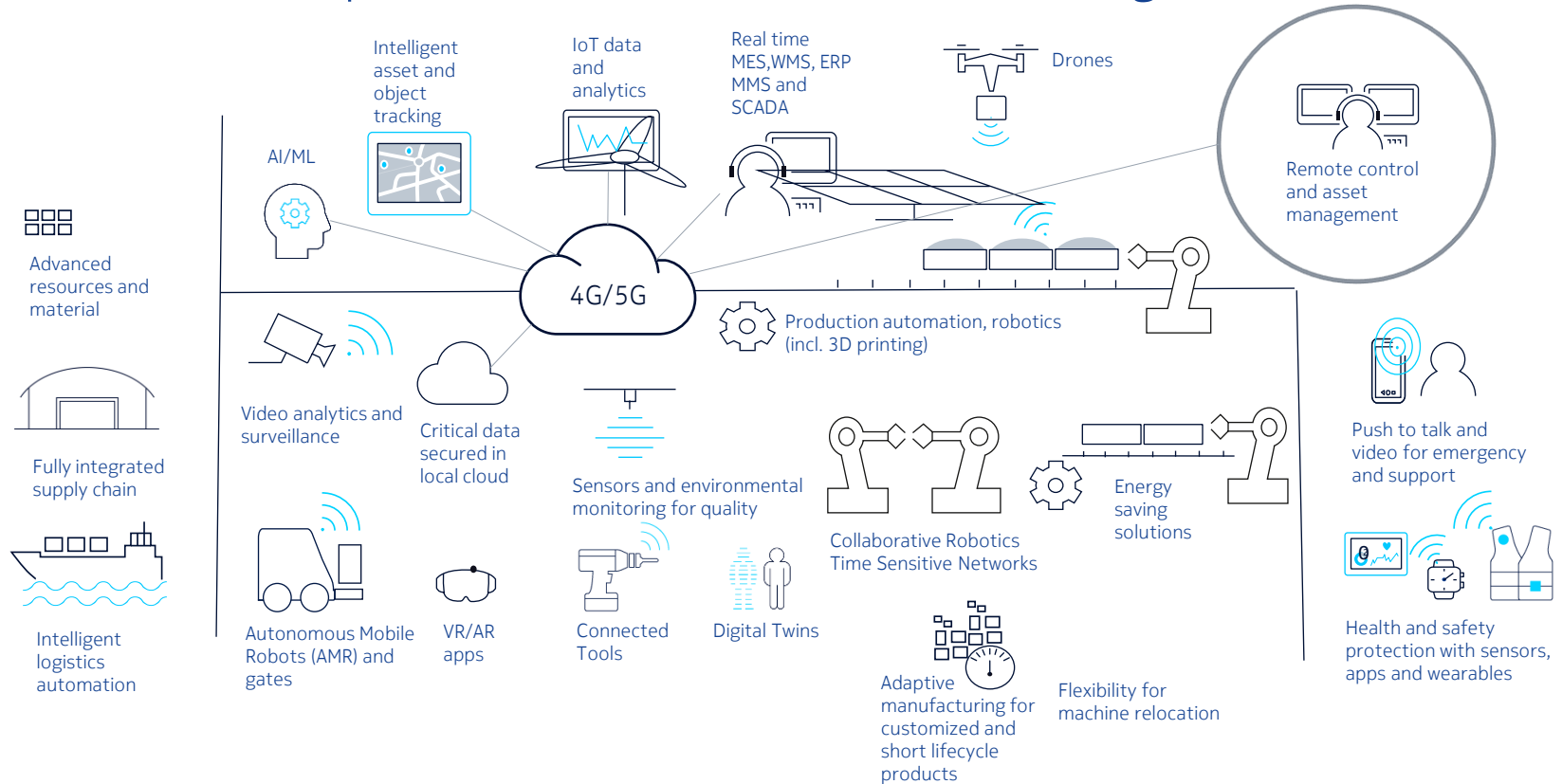
Video & group messages, shared & augmented virtual info provide real time order & process information or work instructions connecting back office and R&D to workbench



Remote controlled and operated machines

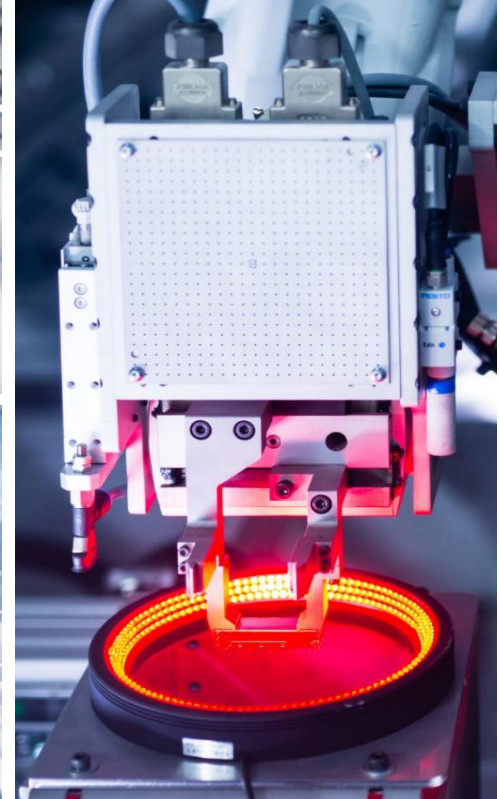
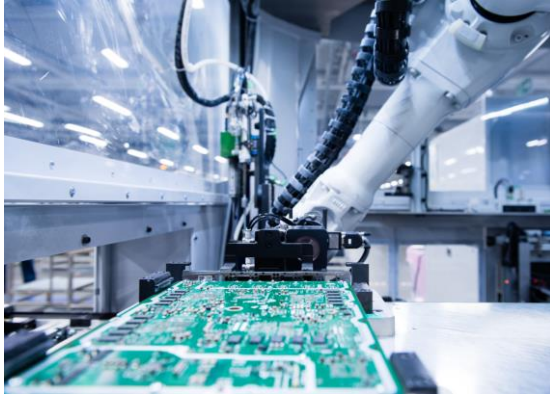
Semi and fully automated and remote controlled machines ease operational work

4G/5G industrial private wireless for new manufacturing use cases



Nokia Oulu Factory – Conscious Factory of the Future

NPI centre of manufacturing innovation & new technologies



Proven success in deployment of Industry 4.0 technologies at scale

Powered by Nokia own technologies

#1

Private wireless network to speed up NPI line re-layout and bring reliable connectivity to all assets

#2

Flexible robotics to ensure high productivity and agility for continuous new ramp-ups

#3

Cloud-based **Digital Twin** enabling real-time process management

#4

Virtualization of new product introduction (NPI)



Welcome to Nokia Oulu Factory
An advanced 4IR Lighthouse Project

5G
ready

WORLD
ECONOMIC
FORUM

NOKIA

NOKIA

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