

# Conscious Factory

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# Industrial IoT Will Revolutionize Industry and Business Models



Ongoing industrial revolution enables disruptive and game-changing innovations to factories. Key words are automation, digitalization, big data analytics, VR and artificial intelligence.

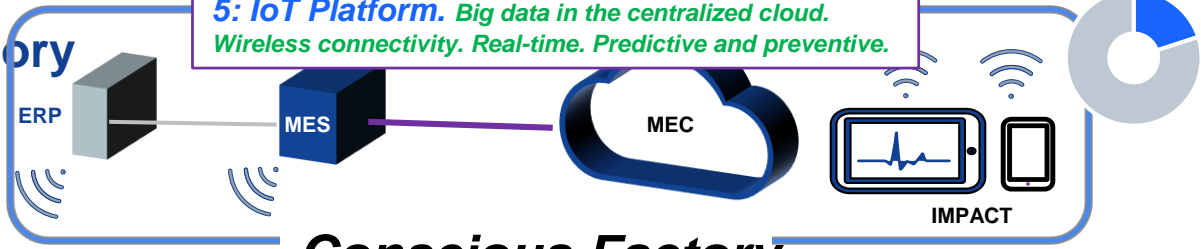
Factory environment will change - new Industrial IoT partners are needed e. g. in the areas of device and application development.

Factory as a live lab for industrial IoT system and applications.

In transformation, open ecosystems deliver best global solutions: external network to complement own capabilities.

# Our path to Conscious Factory

**5: IoT Platform.** Big data in the centralized cloud.  
Wireless connectivity. Real-time. Predictive and preventive.



## Conscious Factory

**0: DFx/ Industrialization of the Product.** E. g. design solutions that enable automation, smart products.

**2: Intelligent SMT Manufacturing**

Increased automation and intelligence in material flow

**1: Automated Assembly**

New automation technology

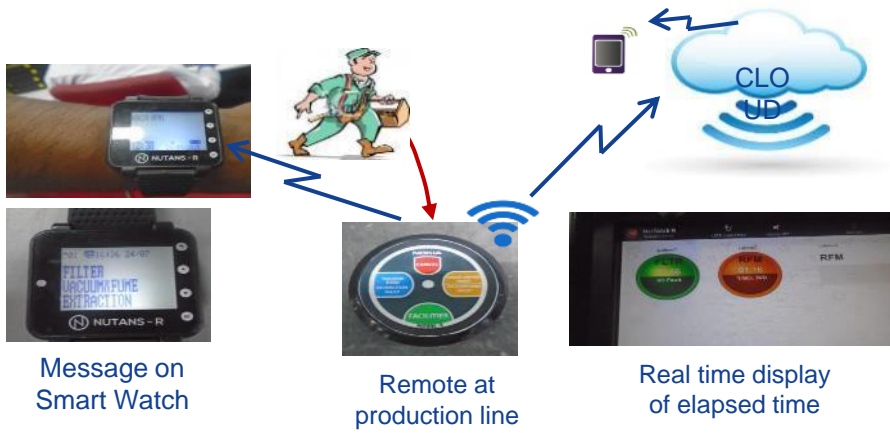
**3: Centralised, automated material logistics**

Customer pull, new logistics and warehousing solutions

**4: Single IoT Use Cases.** E. g. Material Train follow-up by sensors, temperature and humidity control etc.

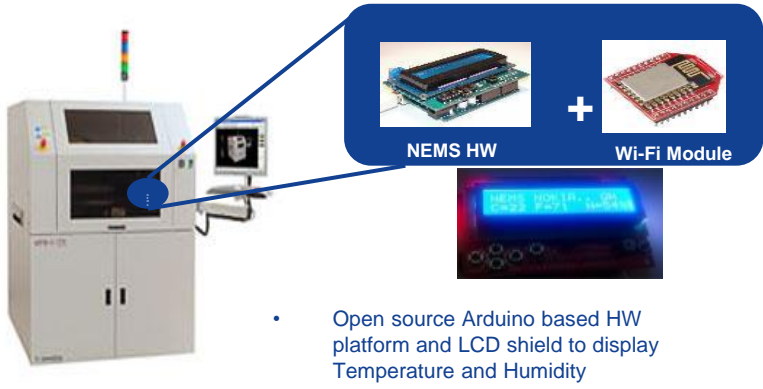
# Some examples of implemented IoT Use Cases/Applications

## Smart Watch @ Assembly Line



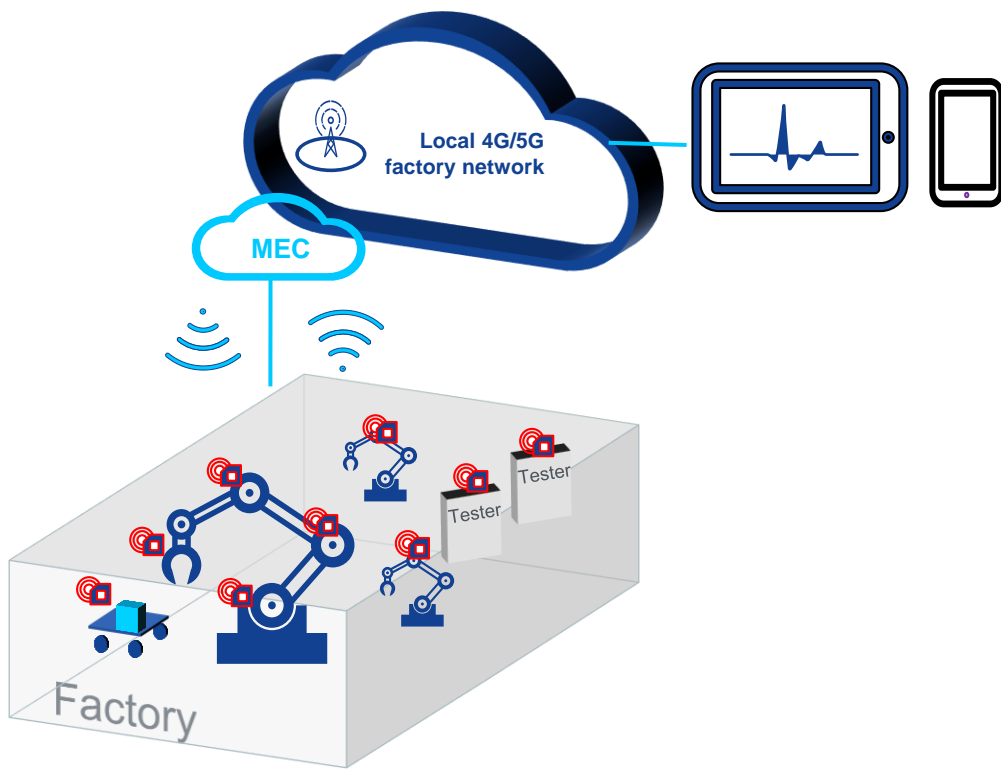
- Engineering support in final assembly lines using Smart wearables
- On line recording of all incidents & corrective actions
- Data analytics to reduce MTTR for assembly related issues

## NOKIA Environment Management System (NEMS)



- Centralized monitoring and recording of environmental parameter - Temperature and Humidity.
- Auto email alerts for deviations from set limits.

# Elements of Factory IoT solution



Data Analytics,  
Remote Management

**Applications**

Impact / Innovation  
platform

**SW Platform**

MEC – Mobile Edge  
Computing

**HW Platform**

NB-IoT, LTE-M, Wifi, LTE,  
5G, MuLTEfire, LoRa

**Connectivity Options**

Testers, Instruments,  
Sensors, Robots,  
Actuators

**Devices and Sensors**

# We want to work with ecosystem partners to create winning IoT Factory Platforms

- We need partners to complement our technological capabilities e. g. in device and application development
- We can offer a real factory environment as live lab
- Who are the winners of the future?
  - Understand the possibilities of I4.0 for factories
  - Capability to innovate and create best solutions – fail fast
  - Capability to transform from today's world to the future
  - Open global ecosystems
  - Capability to invest

**NOKIA**