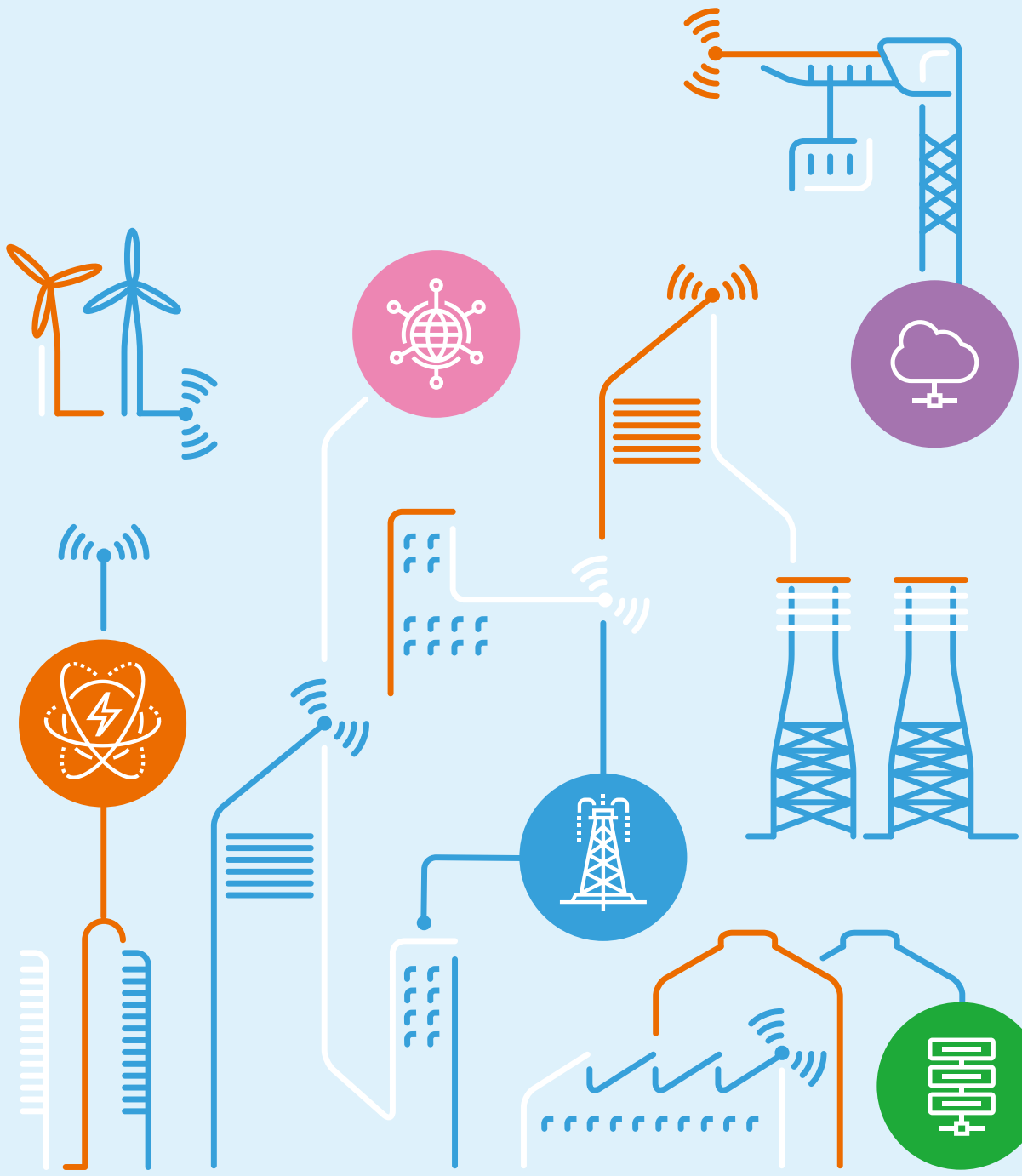
AIOTION TO DRIVE YOUR AI·IOT OCEAN



AIOTION

Nkia

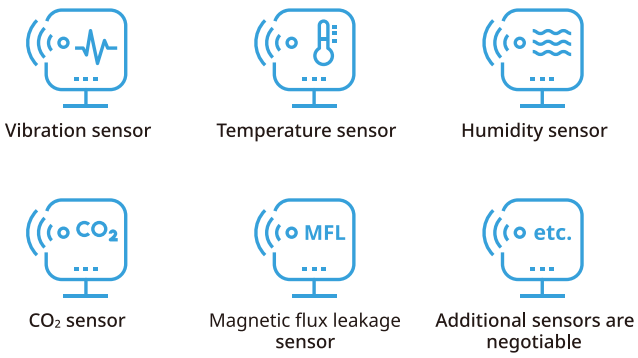
01

Key Technologies

AIOTION, IoT Platform Solution,
can be applied in various industrial fields
by combining sensor connectivity, big data
processing, and AI technologies.

Sensor connectivity & Data acquisition

‹Connectable sensors›



01.Radio frequency sensor technology (Zigbee, BLE, LoRa, NB-IoT)

- Support standard low-power wireless technology such as Zigbee, BLE, LoRa and NB-IoT
- Customizing support such as 400Mhz and 900MHz bandwidth

02.Sensor connectivity technology (MQTT, CoAP, REST)

- Support standard protocols such as MQTT, CoAP & REST
- Connect existing sensors (Customization)

03.Data acquisition technology

- High-end GW: Intelligent gateway with embedded AI function without passing raw data to central server for further processing.
- Tiny GW: Lightweight gateway optimized for data transmission

Realtime data processing & control

01.Realtime data processing platform

02.Control sensors by rules engine

03.External data transmission via REST APIs

AI technology

We have proven technologies in predictive maintenance and anomaly detection based on experiences in various industrial fields.

01.Forecasting

- Make predictions of the future based on learning past data
- Forecast remaining useful Life of motor, pump, bearing, gearbox, and generator etc.

02.Anomaly detection

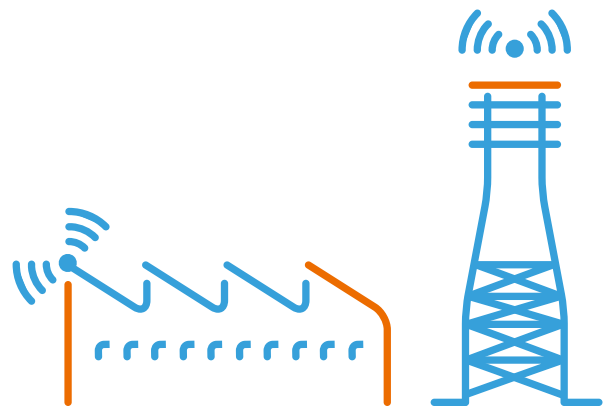
- Identify unusual patterns by analyzing past data patterns

03.Classification

- Classify learning data into Fault types
- Classify wire rope fault type

04.Optimization

- Optimization by reinforcement learning
- Algorithms for optimal energy generation by learning various operating conditions



02

Custom Dashboards

Dashboard supports business decision through integrated management and analysis of main indexes that distributed monitoring solutions provide. And also helps better communication among monitoring solution users as showing monitoring status clearly.

Competitive edge

01.Scenario base dashboard reflecting user requests

- Support screen configuration consulting and customizing to figure out customer needs
- Provide integrated reporting method suited for customer environment

02.Provide integrated monitoring in terms of service

- Support management, analysis, reporting of IT resources for effective operation
- Provide Insight Analysis Monitoring View in terms of business

03.Support Integrated IT service operation management by linking with related system

- Provide statistics by linking with various related systems
- Identify integrated operation status and fault process status in portal

Main Function

- Simple Editor by WYSIWYG method
- Web-based displays on various devices
- Access restriction by permission
- Provide 3D component
- Graphical components such as various chart, gauge, and grid etc.
- Flexible & Optimized visualization

03

Examples of industrial applications

With AIOTION, online monitoring and diagnosis is available in various industrial fields for 24 hours a day and 365 days a year.

Wire ropes safety monitoring

Technology	· Self-developed magnetic flux leakage sensor · Online crane wire rope diagnosis · AI classification technology · Wire rope monitoring dashboard · Cloud service
Effects	· Reduction of wire rope maintenance costs & accident prevention through anomaly detection

Rice health monitoring in warehouse

Technology	· Temperature, Humidity, CO_2, O_2 sensor · Optimized diagnosis of rice health · Connect & control ventilation systems · Easy installation of wireless battery-powered sensors (power and datalink construction is not necessary) · Optimum & Minimum sensor installation technique
Effects	· Realtime rice health monitoring · Loss minimization for temperature & humidity control failure · Central monitoring

Pump predictive maintenance

Technology	· Vibration sensor · Pump lifetime prediction and diagnosis · AI forecasting technology
Effects	· Real-time Health diagnosis of pump · Easy replacement scheduling based on the remaining useful life prediction of pump

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