

EN



The World Runs on Machines.

We avoid Unexpected Downtime.

Predictive Maintenance

Are you tired of dealing with unexpected breakdowns and costly repairs? Say goodbye to reactive maintenance and embrace the future of maintenance with Robomap, your ultimate predictive maintenance solution powered with LoraWan technology.

How do we do it?

By providing a full-stack solution that implements a LoraWan network to connect the end nodes and collect real-time data of the components such as temperature, vibration, humidity, and magnetic data. Our solution combines, hardware, software and, provide it all in **all-in-one** solution.

Advantages

The range of LoraWan is up to four kilometres, which means that with a couple of gateways you will have coverage for all your facilities. With our cloud solution, we enable you to increase productivity and reduce costs.

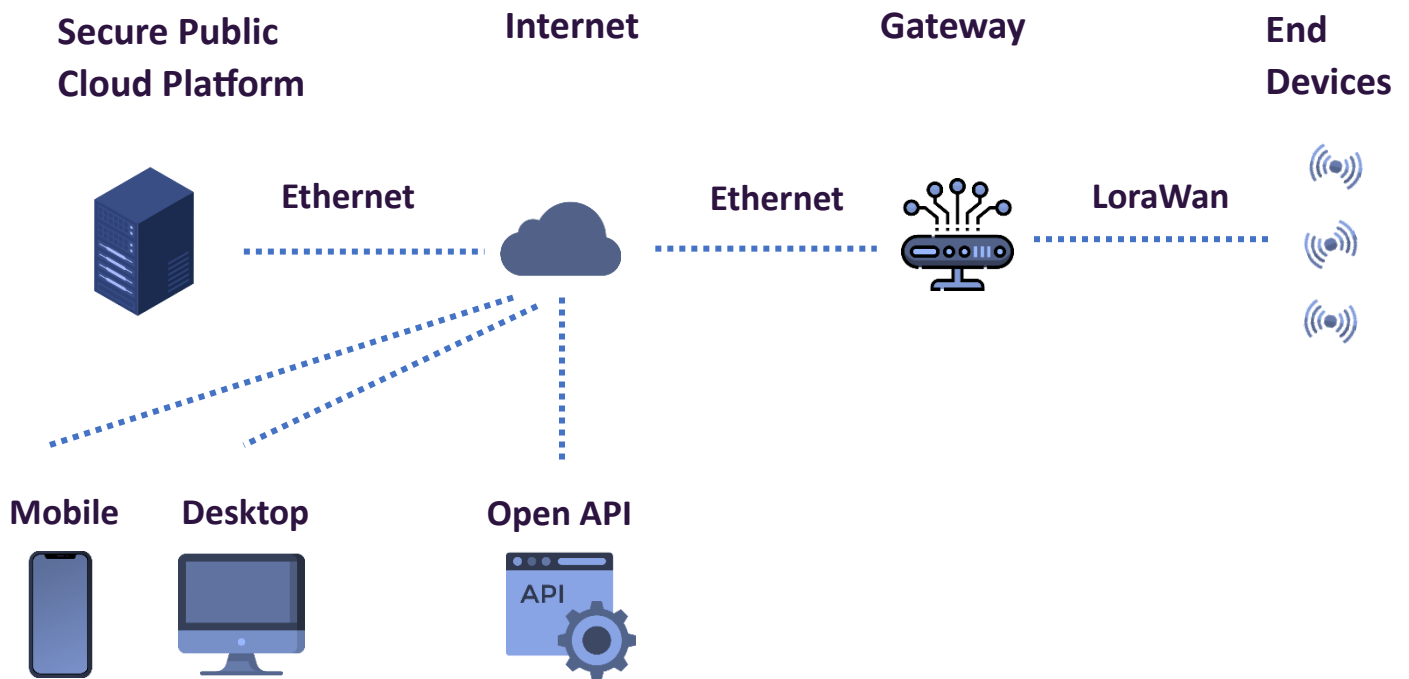
A Global View

Working with an industrial startup can bring you to the pitch of innovation. We are in the state-of-art of predictive maintenance techniques by combining connectivity and AI.

We Make Machines Speak.

Architecture Overview

Our architecture overview is simple, scalable, and reliable.



How does it work?

The end node initiates the data transmission by sending a LoraWan message containing the collected data. This message typically includes payload data, device identification information, security parameters, and instructions for network handling. The gateway receives the message from the end node, extracts the data, and forwards it to the network server.

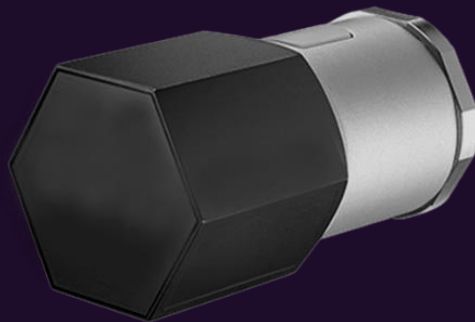
The network server processes the received data, applies any necessary security checks or data transformations, and routes the data to the appropriate destination, such as an application server or a cloud-based platform for further processing or storage.

Key Elements

- **Secure Public Cloud Platform.** Contains several pieces of software.
Network Server - a piece of software running on a server that manages the entire network.
Application servers - a piece of software running on a server that is responsible for securely processing application data.
Join Server - a piece of software running on a server that processes join-request messages sent by end devices (The Join Server is not shown in the above figure).
- **Gateways.** Receive messages from end devices and forward them to the Network Server.
- **End Devices.** Sensors or actuators send LoRa modulated wireless messages to the gateways or receive messages wirelessly back from the gateways.
- **Open API.** Application Programming Interface (API). We believe in the power of collaboration, our API is designed to empower developers, businesses, and innovators to create transformative solutions.

Sensor RNT23

Our wireless sensor, acts as an end device and transmits the data to the gateway. The device is capable of measure temperature, vibration, humidity, and magnetic data.



Reliability Meets Artificial Intelligence

We are on a mission to make machines more reliable while keeping your facilities, utilities, and production lines running at their best. Robomap places the power of artificial intelligence into the hands of engineers, reliability experts, and maintenance professionals, arming them with continuous insights to improve asset performance.

Our solution listens to machines, analyses data in real-time, provides actionable machine health insights, helping protect production line assets as well as utility and balance of plant equipment.

Complete Machine Health Solution

Increase uptime and equipment effectiveness while reducing risk and optimizing asset care.

Improve Uptime and OEE

Robomap monitors your assets for early signs of malfunctions and helps you address emerging issues to significantly reduce unplanned downtime events and increase equipment availability. Includes industrial-certified hardware, software, diagnostics, and reliability support.

Optimize Asset Care Programs

We enable your asset care teams to see developing issues in real-time, and to eliminate unnecessary tasks by planning corrective actions based on the actual condition of the machine.

Inventory Planning with Insights

With the help of Robomap Pd.M. solution, your facility can free up working capital tied up in excess inventory, while ensuring you still have the right parts on hand when you need them.

Reduce Maintenance Costs

We help you prevent significant repair, replacement and labour costs and extend asset life by catching issues early and providing accurate guidance on root causes and corrective actions.

Keep Your People Safe

Robomap helps reduce risk of incidents by monitoring hard to reach, remote and dangerous equipment, while ensuring machines are working in their optimal modes for a safe work environment.

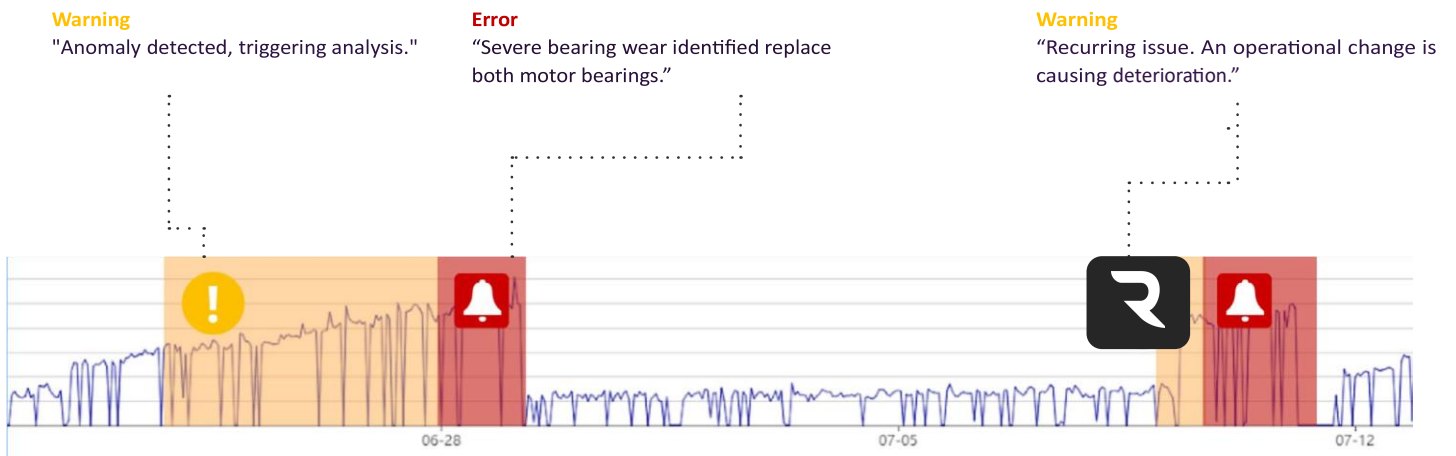
Create Transparency and Visibility

Robomap platform enables both the production floor and management by providing increased visibility and an understanding of what is going on with their assets, unlocking value up and down the organization.

World's Leading Machine Diagnostics

Robomap combines AI-driven analysis of millions of machine signals with expert verification. Your team can start focusing on the assets that need immediate attention. Robomap library consists of data on over thousands of unique machines that assists with providing insights and value immediately after deployment.

Health Management



Predict Machine Failure

Automatic diagnostics of most machine malfunctions.

Abnormal Ultrasound Emissions

Abnormal Vibration Emissions

Axial Unbalance

Bearing Lubrication Issues

Bearing Wear

Beat Frequency

Blade Pass Frequency

Cavitation

Damaged Rotor Bars

Electrical Faults

Electrical Discharge Through Bearing

Gear Friction

High Vibrations Relative Baseline

Impacting Rubbing or Friction

Loose Connections Shaft Eccentricity

Loose Rotor Bars Significant Change
in Vibrations

Loose Stator Windings Stall/Surge
Condition

Misalignment

Stator Eccentricity Operational
Issues

Structural Mechanical Looseness

Pipe Strain Trend Alert

Pump Recirculation

Vane Worn/Eccentric Fan Sheave

Worn/Eccentric Motor Sheave

Pass Frequency

Radial Unbalance

Very High Vibrations

Resonance Worn/Defective Belts

Rotating Mechanical Looseness



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