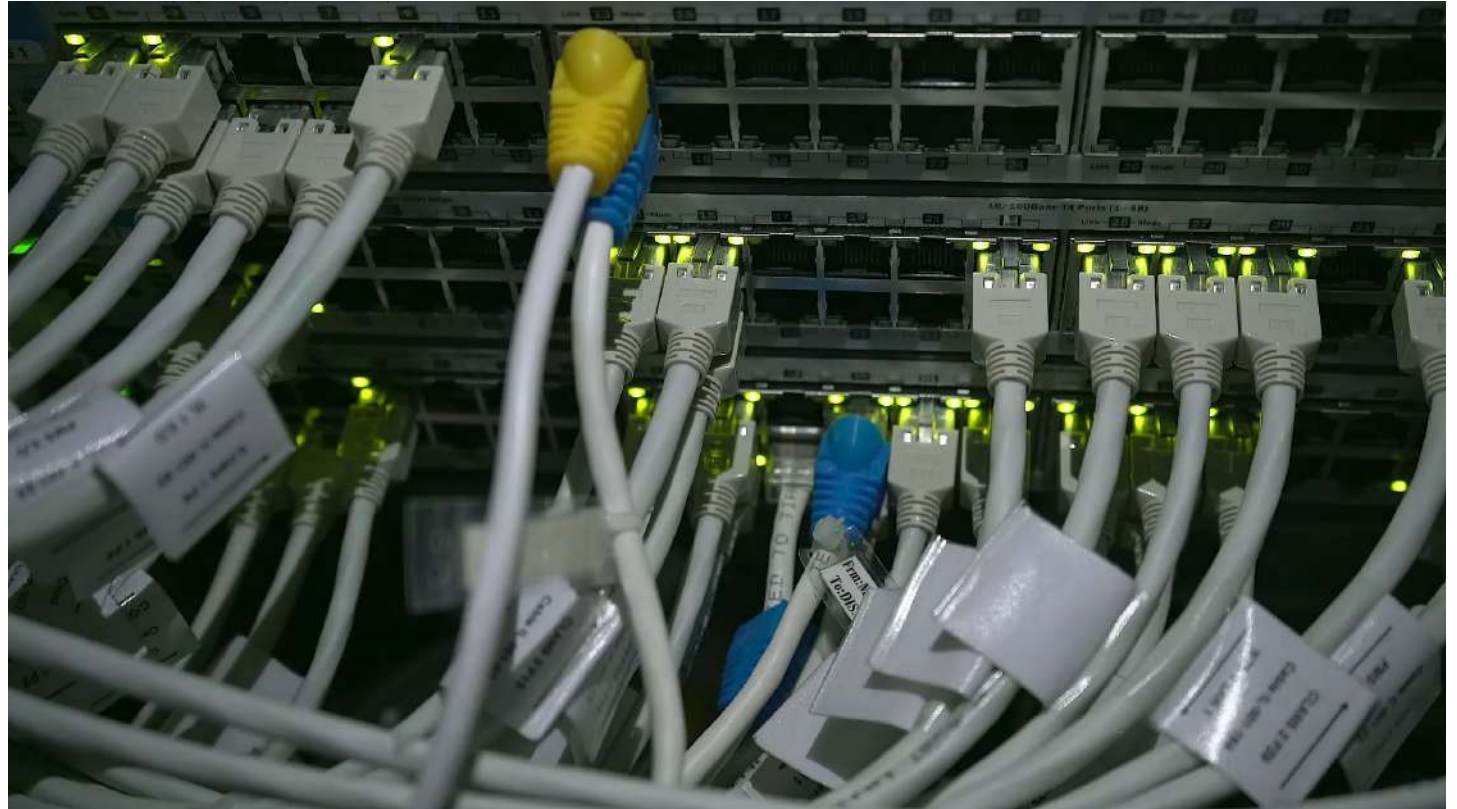




New Generation Sensors Srl

www.ngs-sensors.it



Funded in 2015

Spin-off company della Scuola
Superiore Sant'Anna.

Solutions:

Smart Logistics

- Cargo
- Last mile

Smart Factory

- Predictive maintenance
- Industrial monitoring



Scalable IoT systems and solutions

Hardware and Software

IoT Cloud platform and analytics

Consulting and customization



PlantOne Toward the Predictive Maintenance democratisation



The addressed problem

Problem



Electric motors and machineries are one of the main asset in manufacturing companies



Their faults can generate several problem in the industrial processes



SOLUTION: predictive maintenance programs

Benefits

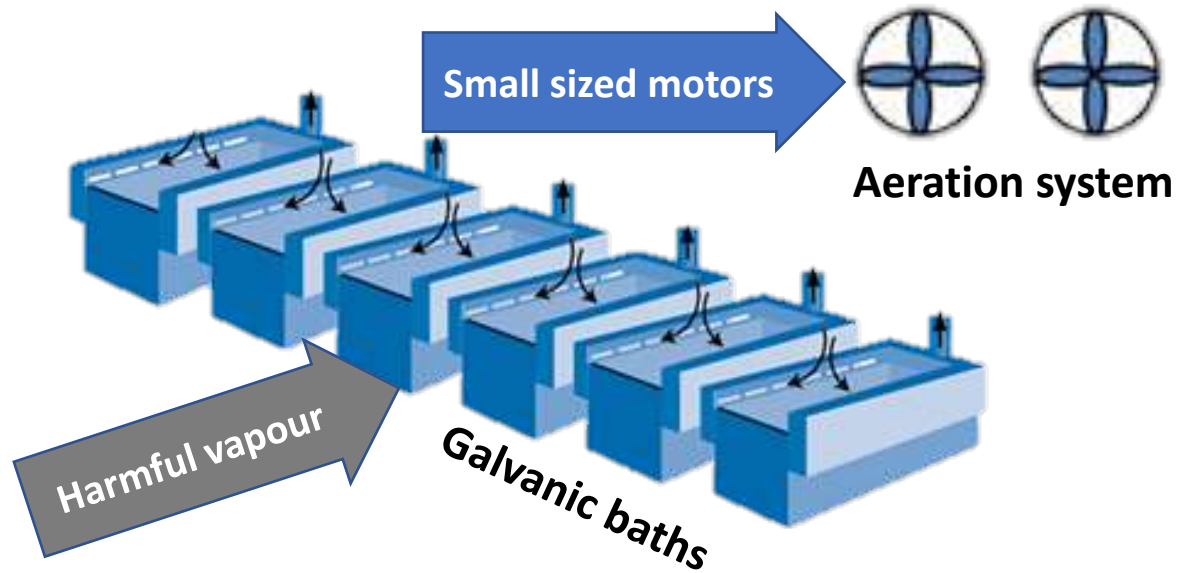
Predictive maintenance:

- Low repairing costs
- reduced downtime
- Improved safety
- increased energy efficiency
- savings in employees' time



4.0
industry

PlantOne: predictive maintenance democratisation



A galvanization plant uses dangerous chemicals liquids that can generate harmful vapours (hydrogen cyanide).

Similar environments & potential clients

- Tanning industries
- Paper industries
- Soft materials
- Automotive



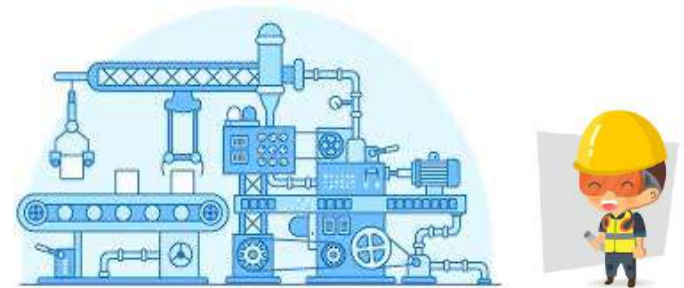
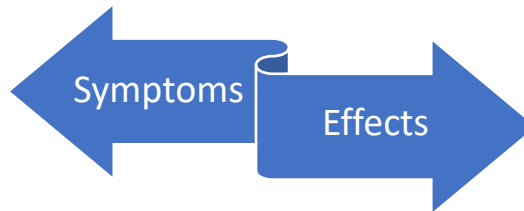
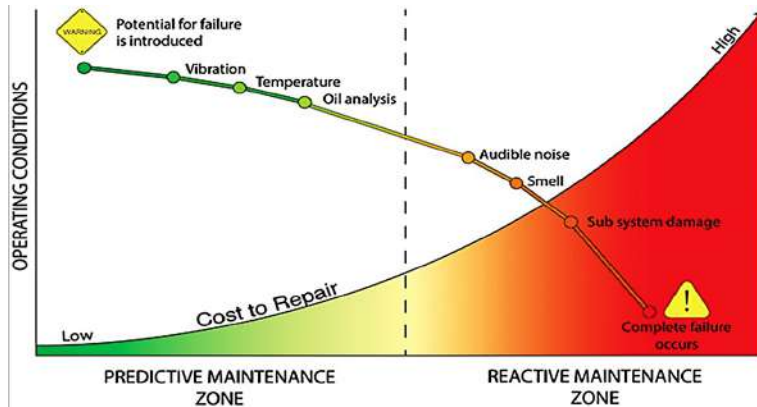
Our solution: the PlantOne system

Un-monitored
motors and
machineries



PlantOne system

- Retrofit
- Flexible
- Plug&Play



PlantOne: Added value and advantages



Open, scalable,
horizontal



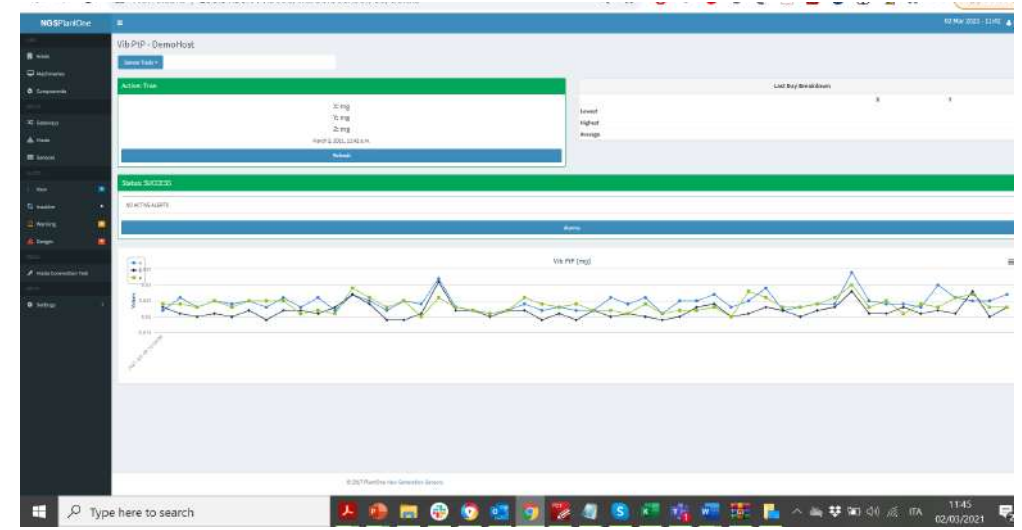
In network
interaction logics



Money saving
through retrofit



Reduction of
downtime



Reduction of
maintenance costs



Scheduled
maintenance



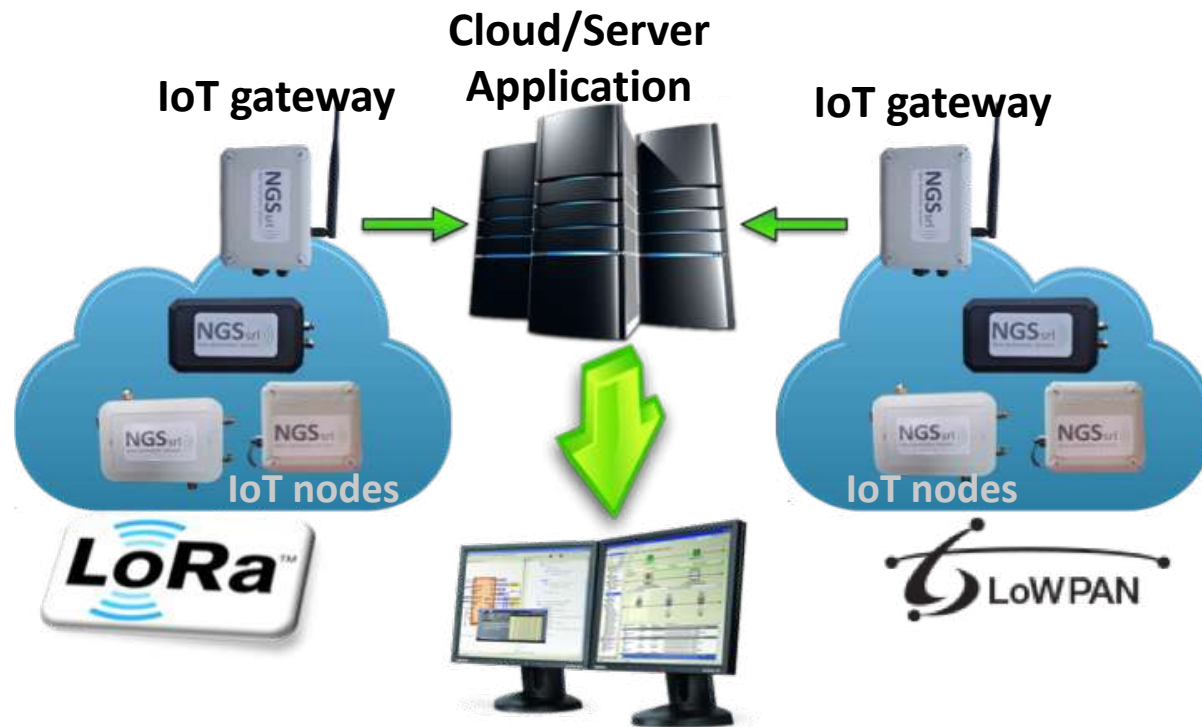
Worker and
environmental
safety improvement



Continuous
improvement (ISO
Certifications)



Architecture



Collection of data from machinery and facilities exploiting proprietary hardware

Measuring and monitoring both malfunctioning symptoms and effects

- Symptoms: Vibration sensor, Contact temperature sensor, Drowned current sensor
- Effects: Pressure sensor, Gas sensor
- Possibility of integrating 4-20mA senso

NGS – Predictive Maintenance Smart PlantOne –The sensors

Collection of data from machinery and facilities exploiting proprietary hardware

Measuring and monitoring both malfunctioning symptoms and effects

- Symptoms: Vibration sensor, Contact temperature sensor
- Effects: Pressure sensor, Gas sensor
- Possibility of integrating 4-20mA sensor

Smart sensors capable to collect and process locally data, exploiting AI



Predictive maintenance sensor



Thermal monitoring

- Contact temperature sensor probe
- Magnetic or with screw

Vibrational monitoring

- Triaxial accelerometer

Alarm triggering

Battery powered (optional)



Temperature sensor Specs

Sensor Type	PT100 probe
Temperature Range	-40°C +150°C
Precision	Less than 1°C

Vibration sensor Specs

Sensor Type	3 axial vibration probe
Precision	1024 counts/g 2G 512 counts/g 4G 256 counts/g 8G
Measurement range	2G/4G/8G
Sampling period	200Hz
Measured parameter	P2P and RMS on the burst The complete burst on demand



Pressure sensor



Honeywell PX2.



Differential sensor sealed gauge

Operative range: 0-250 psi

Precision: 0.25%

Working temperature: -40 °C, 125 °C

Application

- Monitoring HVAC systems
- Compressor system
- Oil pressure

Gases' sensors



Electrochemical sensor

- CO
- Ethylene
- Hydrogen cyanide

Possibility of integration of compliant sensors

- Alphasense sensors



Simple Gateway

Bridge between the IoT e Internet

Local network management

Ethernet connection

Remote control

Local storage (in case of connectivity loss)

PlantOne: the app for the industrial monitoring

Data collection from the fields

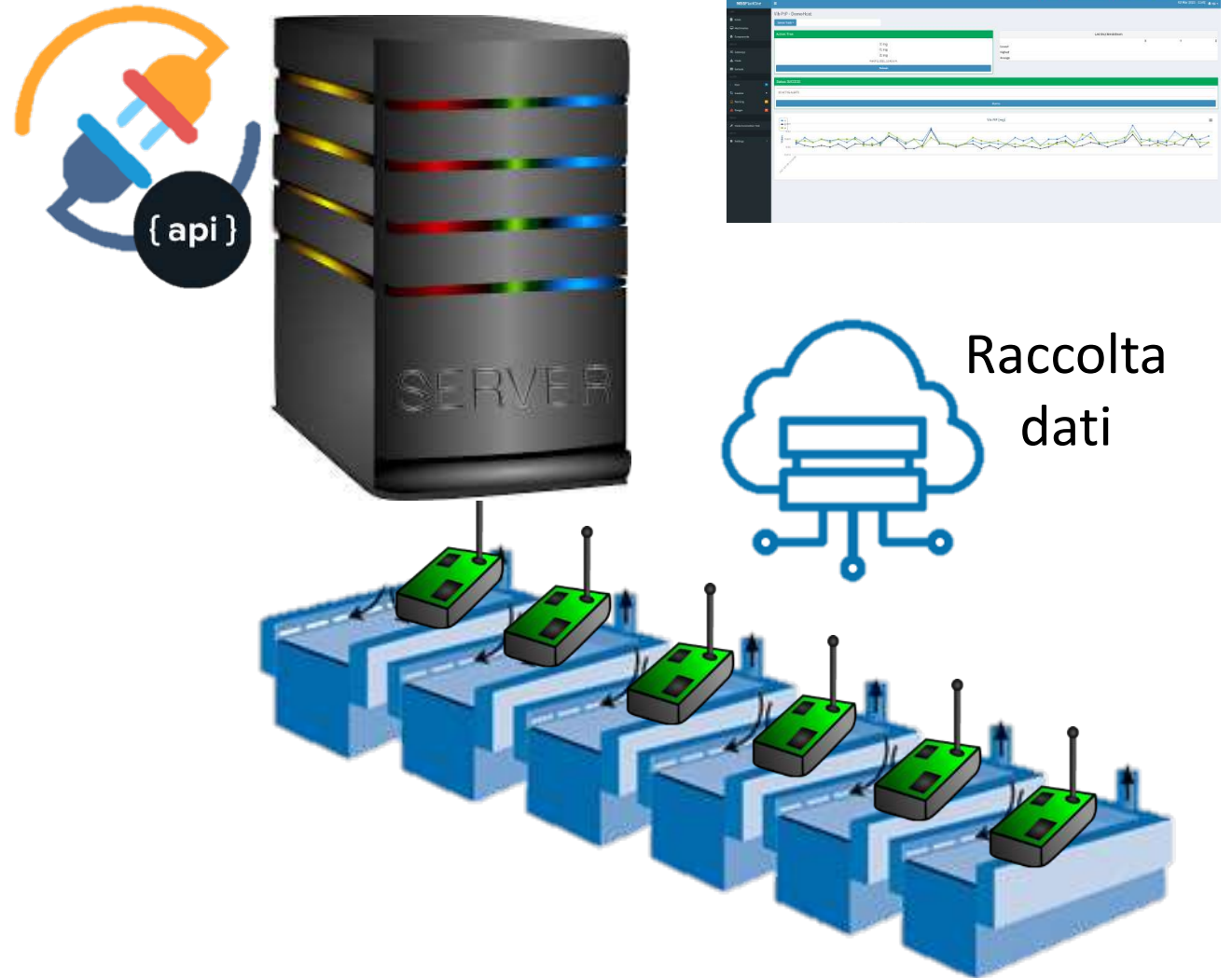
- From NGS gateways
- From third parties gateways
- From PLC

Storage

APIs

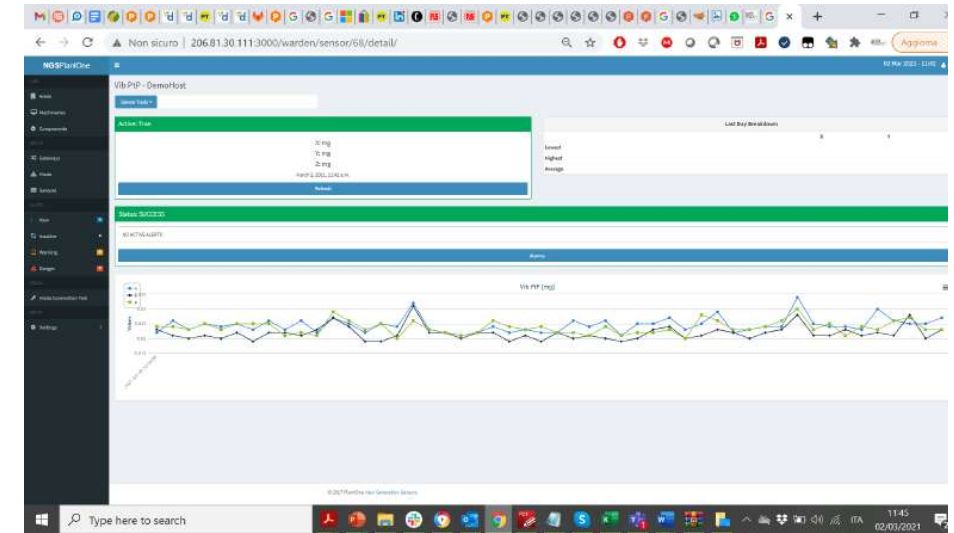
Graphical interfaces

For Cloud or server



PlantOne: web graphical interface

- Hierarchical organisation
 - Area
 - Machinery
 - Component
- Data visualization and management
 - Plot e table
 - Event and thresholds
- IoT nodes and gateway management
 - Ping
 - Node alive



The screenshot displays the 'Advanced Tools - Configuration' page in the NGSPlantOne web interface. The left sidebar is the same as the previous screenshot. The main content area shows a configuration table for vibration parameters. The table has columns for Parameters, Last Value, Last Update, and New Value. There are 'Get' and 'Change' buttons for each row. Below the table is a large empty space.

Parameters	Last Value	Last Update	New Value
Vib Freq	400 Hz	3 months ago	
Vib Window	2 s	3 months ago	
Vib Period	60 s	3 months ago	



Contatti

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www.ngs-sensors.it