



Vitesco Technologies Italy **reduced machines' downtime** in collaboration with Zerynth, and they are now able to **predict malfunctions** of pneumatic valves within **24 hours**.

< 6

Months
Implementation

24 h

Malfunction
Prediction

€€€

Savings from
false-negative
scrap detection

"For some time we were searching for a technology that could reduce downtime of a specific module within an assembly line. But thanks to our collaboration with Zerynth we are now able to predict malfunctions of pneumatic valves within 24 hours which reduces downtime tremendously."

Chief Digital Officer (CDO) & Advanced Technology Leader – Vitesco Technologies Italy, Alessio Papucci

The Challenges

During the period of rapid technological development, success of the company and its market position, mostly depend on how optimized all processes are. And for Vitesco Technologies Italy, a company that manufactures automotive components, **the quality of automation processes** is very important.

Vitesco Technologies Italy, therefore, engaged Zerynth for expert assistance. Vitesco Technologies Italy uses several automatic assembly lines to produce fuel injectors. All of these lines, include **a test module** that controls the previous assembly steps, using a leak test. If the test is successful, the fuel module proceeds along the line, otherwise, it is rejected. It may happen that one of the elements of the module is not working properly due to wear. Before detecting a malfunction of the line, it will produce many false-scrap. Therefore **minimizing false scraps** due to module damage, was a critical issue.

Furthermore, the replacement of worn components requires **several hours of downtime**. Therefore, Vitesco Technologies Italy inquired Zerynth to reduce manual diagnostics, as well as **remotely monitor** the status of the test module for each assembly line.



COMPANY NAME:

Vitesco Technologies Italy

LOCATION:

Italy

INDUSTRY:

Automotive

PROFILE:

A leading international developer and manufacturer for state-of-the-art powertrain technologies for sustainable mobility with smart system solutions and components for internal combustion drivetrains.

RESULTS:

Increased Productivity
100% remote monitoring

Increased Automation
50% less manual operations

Increased Efficiency
24 h malfunction prediction

The Solution

The Zerynth team provided Vitesco Technologies Italy with a local Industrial IoT system for **real-time monitoring** and **predictive maintenance**. It is built using an industrial-grade **4ZeroBox** control unit connected directly to the cloud via **Zerynth Device Manager**.

4ZeroBoxes collect **available data from the PLC** and machine sensors together with **new data from additional sensors**. Then, signals are visualized on the dashboard and developed for early detection of valve/sealing elements failure. Details are displayed on a customizable dashboard.

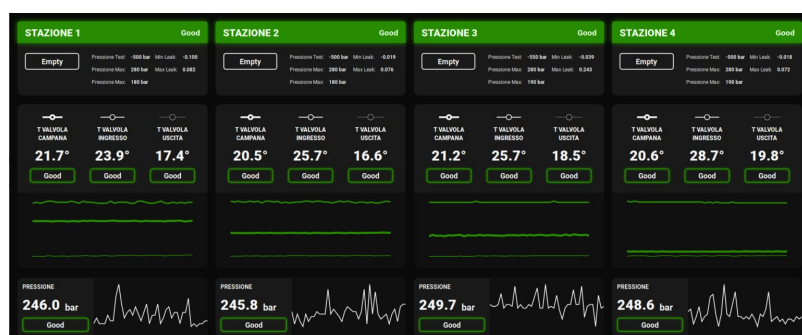
Thanks to **4ZeroBox**, Vitesco Technologies Italy can now remotely monitor the status of the test module for each assembly line and predict valve / sealing element failure 24 hours in advance.



Custom Dashboards

The acquired data from **4ZeroBox** is processed locally by the acquisition units and sent to the **Zerynth Cloud installed on-premises**. Predicted failures notify the maintenance team via integration with Vitesco Technologies Italy software systems (maintenance database and email server).

Zerynth Device Manager can manage all connected devices, carry out the temporal storage of collected data, display raw data and messages sent by individual devices, organize devices by workspace and fleets, allow downloads of historical data in CSV format, exchange data with the end-customer's management software and maintain the database and email server for real-time push notifications.



MAIN FEATURES

- Data Acquisition, logging and visualization.
- Retrofitting to legacy and modern machines.
- Improved visibility on equipment efficiency.
- Predictive maintenance to prevent costly repairs and unplanned downtime.
- 16+ different industrial **sensor channels**, for acquiring sensor data.
- **Wifi and Ethernet** for sending and receiving data, monitoring and for controlling devices.
- MicroSD for local and secure data logging without internet connections.
- Industrial **Relays** for remotely controlling the assets.
- Edge Processing Capabilities and Ready for AI on the Edge Applications.
- Easy to expand with GSM 2G, 3G, GPS, Motor drivers, displays, and additional sensor channels.

PRODUCTS USED:

4ZeroBox
Zerynth Device Manager

"We launched a project to reduce the downtime of our line, by predicting malfunctions on the automated production line of high-pressure pneumatic valves. Our main focus was to significantly reduce the downtime. Advanced prevention increased our line uptime, and permits us to optimize maintenance intervention."

Alessio Papucci
Chief Digital Officer (CDO) &
Advanced Technology Leader
Vitesco Technologies Italy

The Results

Vitesco Technologies Italy has successfully optimized the production process of its automotive components thanks to an innovative Industrial IoT solution.

Zerynth has provided Vitesco Technologies Italy an application for **remotely controlling** and **monitoring the system** through dashboards and early mail alarm notifications. This optimizes the Maintenance Intervention and significantly **reduces machine false scraps**.

Vitesco can now **remotely control** and **monitor the system** through dashboards. This optimizes the manufacturing process for automotive components and significantly reduces operating costs through the ability to remotely control processes.



Why Vitesco Technologies Italy chose Zerynth

Zerynth provided an **extensive industrial IoT experience** and expertise in the requirements needed to optimize the automotive components sector. The development and management teams successfully supported Vitesco Technologies Italy by applying the best practices and, products certified by official sources.

Zerynth **quickly implemented** the perfect tool to achieve all of the project's goals and objectives and also reduced manual work thus lowering production costs. Years of experience across many industries and a list of positive reviews from leaders of many business sectors are validated by the expertise and quality of the entire Zerynth team's work.



"Zerynth demonstrated proficiency to manage and install IoT systems as well as performed excellently in analyzing and programming advanced systems using Artificial Intelligence algorithms. Their expert team also managed the project by applying advanced methodologies which enabled us to meet our deadlines and targets".

Chief Digital Officer (CDO) & Advanced Technology Leader – Vitesco Technologies Italy, Alessio Papucci



Enabling IoT

About Zerynth

Zerynth helps companies easily get their industrial processes digitized and bring innovative connected products to the world. The Zerynth IoT Platform is a full set of hardware-software tools designed by IoT experts to enable digital transformation in a fast, flexible, and secure way.

Founded in 2015, Zerynth has grown steadily. Today Zerynth has 35+ team members with deep IoT expertise and industry knowledge with over 100 customers across many industries. Headquartered in Italy, Zerynth provides support globally thanks to an extensive network of partners in Europe and pan-global locations.

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GET STARTED WITH ZERYNTH

Ready to see what Zerynth can do for your business?

LET'S TALK!