



Zerynth®

VITESCO TECHNOLOGIES

CASE STUDY

Industrial IoT for automotive components

- Industry 4.0
- Real Time Monitoring
- Predictive Maintenance
- Malfunction Components Prediction

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TECHNOLOGIES



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

24h Malfunction Prediction

Savings from negative 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.

 Alessio Papucci, Chief Digital Officer & Advanced Technology Leader

 Industry

Automotive

 Asset

Assembly line testing machinery

The Challenge

Vitesco Technologies Italy, an automotive company and a spin-off of the Continental AG group, chose Zerynth **to optimize the quality of its manufacturing processes**. The company utilizes various automatic assembly lines to produce fuel injectors, which include a testing module to inspect the preceding assembly stages using a leak test. If the test yields positive results, the fuel module advances along the line; otherwise, it is rejected. There is a possibility that one of the module elements may malfunction due to wear.

Detecting a line malfunction before it occurs can result in numerous false rejects. Therefore, minimizing false rejects due to module damage was a critical issue. Additionally, replacing worn components requires several hours of machine downtime. The company also **needed to reduce manual diagnostics** and **remotely monitor the status of the test module** for each assembly line.



The Solution

Zerynth's team provided Vitesco with an Industrial IoT & AI platform for **real-time monitoring of machinery** and **predictive maintenance**, thanks to the development of an Artificial Intelligence algorithm. Zerynth's Edge Devices, called 4ZeroBox, industrial control units directly connected to the cloud, extract data directly from PLCs and machine sensors, integrating them with additional data acquired from non-invasively applied sensors at critical points of the machinery.

The signals are then processed, displayed on specific dashboards, and analyzed for the **immediate detection of anomalies** in the pneumatic valves and other sealing elements in the high-pressure line of the machinery. Data analysis and predictive maintenance algorithms are implemented directly on the IoT devices **to enable the prediction of machinery failures**.

The acquired data is processed locally through the acquisition units and sent to the Zerynth Cloud installed on-premise. Predicted errors are notified to the maintenance team through integration with Vitesco's software systems (maintenance database and email server).



The Results

Increased Productivity

100% Remote monitoring

Increased Automation

50% less manual operations

Increased Efficiency

24h malfunction prediction

Why did VITESCO choose Zerynth?

VITESCO chose Zerynth because, in less than 6 months, the company successfully optimized productivity, avoided interruptions in the production chain, and ensured overall greater efficiency. Through remote monitoring of the status of each test machine on the assembly line, a comprehensive and real-time view of performance and potential anomalies was achieved.

This capability enabled timely intervention to prevent valve/sealing element failures or errors with a 24-hour advance notice, significantly reducing machine downtime and associated costs. The implementation of predictive maintenance techniques, along with a decrease in manual diagnostics and interventions, allowed the machinery to operate more efficiently and for longer durations. This, in turn, increased Overall Equipment Efficiency (OEE) for the assembly lines and reduced operational costs.

About Zerynth

Zerynth enables companies to streamline production processes and increase the value of connected industrial products. Through a plug-and-play IoT & AI platform, we connect any industrial machine, allowing for a complete 4.0 transformation quickly, flexibly, and securely.

Founded in 2015, Zerynth has grown steadily. Today it has 40+ team members with deep IoT expertise and industry knowledge with over 150 customers across many industries: from manufacturing to agriculture to energy to logistics. Zerynth is based in Pisa, Italy, but also is active in international projects, and foresees an expansion both in EU and non-EU countries during the next three years.

GET START WITH ZERYNTH

Ready to see what Zerynth can do for your business?

LET'S TALK!