



Remote monitoring of legacy and new generation industrial machinery, asset management not covered by the internet, optimization, and production maintenance.

100%

Brownfield and greenfield coverage

3h

Connection of 4 machines at 2 different sites

24/7

Remote and real time monitoring

"LEF has relied on Zerynth for the construction of an active use case for the interconnection of machinery in its Old and New buildings. This breaks the logistical, technological, and vendor lock-in barriers that represented the main obstacles for real application of the Industry 4.0 paradigm on the shop floors in Italian industries".

*Marco Olivotto, Managing Director*

## The Challenges

Most Italian companies use dated brownfield machinery that still functions well from a production point of view, but can't fully perform as they are not connected to the internet or to any other greenfield machinery in the plant.

Being able to **interconnect cross-gen machinery** in covered and non-networked locations and being able to disengage from the vendor lock-in of machinery manufacturers is among the main advantages of a complete Industry 4.0 adoption.

Lean Experience Factory (LEF), turned to Zerynth for a non-invasive solution, that had an industrial-grade design robustness, was safe and quick to setup, and could **digitize both the old generation machines present in the plant and new ones** equipped with PLC for real time data collection with easy and intuitive visualization.

### COMPANY NAME:

Lean Experience Factory (LEF)

### LOCATION:

Pordenone (PN)

### INDUSTRY:

Manufacturing

### PROFILE:

LEF is an Italian company that supports companies in digital transformation through experiential training and consulting services.

### RESULTS:

#### Increased Efficiency

**24/7** Remote Monitoring

#### Improved Quality

**100%** Real-time detection of anomalies

#### Breaking the vendor's lock-in

A **complete** view of all active machines



## The Solution

The solution proposed by the Zerynth team involved not only a **complete retrofitting** action on the machinery present in the plant, but also a **complete and uniform connection for modern and legacy machinery**.

In this way, it was possible to interconnect 4 machines at 2 different sites with only **three total hours of installation**, and a downtime of single machines being less than 30 minutes.

Thanks to an amperometric transformer, it was possible to monitor the energy consumption of the machinery without making any changes. A **4ZeroBox Mobile** industrial IoT device was connected to the old generation machinery, while a **4ZeroBox** was used to interface with the newer ones equipped with PLC, in order to extract data and monitor the work cycle.

The production data was read, aggregated on the edge, and sent to the **Zerynth Cloud** platform every minute, which allowed visualization on custom dashboards.

LEF buildings <small>powered by Zerynth</small>				
Asset	Actual Status	Last Cycle Time	Cycles	Total consumption
Legacy Cutter	Standby	00:20:43	20	67.2 kWh
Legacy CNC	Working	00:15:30	88	176.9 kWh
Modern Cutter	Standby	00:07:30	45	56.34 kWh
Modern CNC	Working	00:12:33	120	201.7 kWh

### 4ZeroBox – Main Features

- Mounts on the ZM1 module.
- Wifi, Ethernet enabled with an option to add additional features.
- Supports industrial analog and digital sensor channels, communication protocols and industrial relays.
- LiPo battery supported.
- Supports Zerynth OS, powerful Python-enabled OS for IoT applications.
- Secure by design through integrated secure element (SE).
- Easy integration with BI tools, ERP and MES existing in the company.

### PRODUCTS USED:

4ZeroBox  
4ZeroBox Mobile  
Zerynth Cloud

## Custom Dashboard

Even in areas not covered by a WiFi or Ethernet network, as was the case in part of the Old building at LEF, it was still possible, via GSM connection, to connect the machines to the Zerynth Cloud, guaranteeing the **continuous sending of data and their visualization, on custom dashboards**. The connection with the cloud allows you to download data in the most common formats, automatically, and guaranteeing its integrity in accordance with the highest cyber-security standards.

In this way, it is now possible **to record all KPIs and machinery insights** and view them on graphical interfaces, thereby facilitating the production process, providing the tools needed to implement possible optimization strategies, and make business decisions based on timely and real-time information.

## The Results

In a very short time, LEF was able to implement the Zerynth IoT platform on their machinery present in the plant, in addition to digitizing their old generation machinery. Doing it this way, it was possible to **actively monitor both shop floors**.

The reliability of the Zerynth platform guarantees security in the exchange of production data, which are **stored on the Cloud** and, in the event of a network failure, saved with **temporary on-the-edge backup solutions**.

Among the main advantages obtained was a complete digitalization of industrial machinery with a homogeneous view between the two types of brownfield and greenfield setups, and **integration with third-party business intelligence tools**.



## Why LEF chose Zerynth

The use of Zerynth's IoT platform has allowed LEF to develop an easy solution for more careful and **secure production monitoring**.

Thanks to the possibility of using data in real time and on intuitive dashboards, interconnection and communication between industrial machinery of different generations is now a normal operating procedure.

Through the **Zerynth platform** it was, therefore, possible to supervise the entire production process with excellent benefits in terms of final machine performance.

"Thanks to the use of the Zerynth IoT platform, it is now possible for us to have all the useful tools for active monitoring of the production of both old generation machinery and new ones equipped with PLC. Being able to obtain all the process insights and KPIs is one of the greatest advantages obtained in order to be able to adopt adequate strategies for optimizing consumption and thus obtain a real transformation".

*Marco Olivotto, Managing Director*



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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Ready to see what Zerynth can do for your business?

**LET'S TALK!**