



Zerynth.

# M.G.F Elettronica

CASE STUDY

Power Consumption IoT Monitoring

- Industry 4.0
- Energy consumption monitoring
- Planned Maintenance
- Remote Monitoring

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## REMOTE MONITORING OF PRODUCTION: MANAGEMENT OF SETUP TIMES, COST AND ENERGY CONSUMPTION ANALYSIS, MAINTENANCE FORECAST.

**100%** Management of setup times

**100%** Visibility costs processing

**24/7** Remote and real time monitoring



*The tracking of times and costs has been a great result for our company, since the production activities are characterized by small-medium productions, therefore, any errors in the estimation of production times have a significant impact on the production process. Furthermore, the visualization of the performances related to the machinery allows the improvement of the production trend, as well as obtaining full awareness of the future strategies to be implemented.*



Maurizio Boni, MGF Production Manager



Electronic Industry



Electronic boards

## The Challenges

Being able to **digitize their industrial machinery, without the need to replace them** is one of the needs most Italian companies have today. MGF, a company that deals with the design and production of electronic boards and equipment, was looking for a solution that was capable of monitoring its production process.

The requirements concerned the digitization of production data related to set-up / assembly times and the number of boards to be mounted. Another aspect that was introduced was a maintenance schedule to track the hours worked by the machinery, in order to make maintenance operations more efficient. Finally, taking into consideration the current problems of energy consumption, the energy consumption during various working phases of the machinery was traced.

MGF chose the Zerynth IoT platform to monitor and analyze data from both legacy machinery in the company plus new generation machinery in a scalable and flexible manner.



## The Solution

To meet the needs of production monitoring, MGF4.0 was designed and built. It is a system that allows the acquisition and real-time display of production data through a **non-invasive "retrofit" integration**.

Using the Zerynth IoT Platform has made it possible to **add new features to production lines** simply by installing 2 sensors and 1 IoT device for each machine. The acquired data were then vertically integrated on the company's MES, thus, obtaining full visibility over the production process.

Furthermore, one of the main requests was to monitor the energy and electrical consumption of the machinery in order to implement energy saving techniques for the production cycle of each order. For each machine, the **OEE (Overall Equipment Effectiveness) parameter is calculated** as it considers the availability parameter and Performance (ratio between actual and theoretical output).

Connecting the machines to the Zerynth Platform made it possible to show the data on special graphic interfaces, thereby, facilitating the production process. The first dashboard created (Shop Floor) is specifically for the **monitoring activities of the assembly of pieces**; while the second allows order analysis through performance indicators (KPI analysis).

The last activity developed was the vertical integration of acquired data, by sending and viewing it on the company management MES. Finally, an alarm was set whenever a certain time threshold of hours worked by the machinery was reached, in order to **schedule maintenance**.



## The Results

- Greater data automation
- 24/7 Remote monitoring
- Better reporting of contract costs
- 100% Tracking of setup and assembly times, including order "dead" times
- Energy cost cutting
- Better management of energy consumption

## Why did M.G.F. choose Zerynth?

Thanks to Zerynth's IoT platform, the development of the MGF 4.0 system brought numerous advantages to the entire production. Increasing the production line efficiency has led to a general increase in productivity and a consequent reduction in waiting times during operating hours.

Having performance and efficiency KPIs available made it possible to obtain a precise overview of contract costs which provided the tools to implement consequent optimization strategies.

Functionality for generating alerts via e-mail for maintenance has proved very useful for careful monitoring of machinery energy and electrical consumption. Finally, digitization of production data related to orders produced on machinery has solved the problems derived from the possible absence or incorrectness of production data.

## 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

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