Industrial IoT Demo – Coffee Machine 4.0.
Monitoring production and energy consumption: calculation of OEE and defective parts.

100% Energy production and consumption monitoring

100% Calculation of defective parts

24/7 Remote monitoring and real time alarms

Why a coffee machine

If it is possible to monitor coffee production, why not do this with your own industrial machinery? To explain this better from the operation of our platform, we created a demo that explains in a few steps how the digitization process takes place on the **Zerynth Industrial IoT Platform.**

We connected a standard coffee machine to one of our edge devices. The data relating to coffee production was extracted and shown on a special dashboard. This is a simple example that allows everyone to understand the genius of the proposed solution and its advantages.

Here, the platform is able to monitor the **status of the machine, its energy consumption, and coffee production**. The demo generated automatic alarms in case of malfunctions and warned the operator in time, so that he could repair the production at the right time without stopping the entire production line.

How it works

With three simple sensors (an amperometric clamp for current detection, a temperature sensor, and a magnetic switch) connected to one of our Edge Devices it was possible to monitor a coffee machine that was not equipped with a PLC or digital control unit.

It was possible to extract the production data every time the machine was operated to produce a coffee. The data, processed on board the machine, was then sent via Wi-Fi or some cellular connectivity to the Zerynth Cloud and displayed on a special dashboard.

Through a single interface, the Zerynth solution allows you to create pre-configured APPs based on your monitoring needs. The Machine Insights solution, chosen for the coffee machine, has the characteristics of analyzing **production times** (production time) and **OEE** (Overall Equipment Effectiveness) as well as the ability to set threshold alarms.

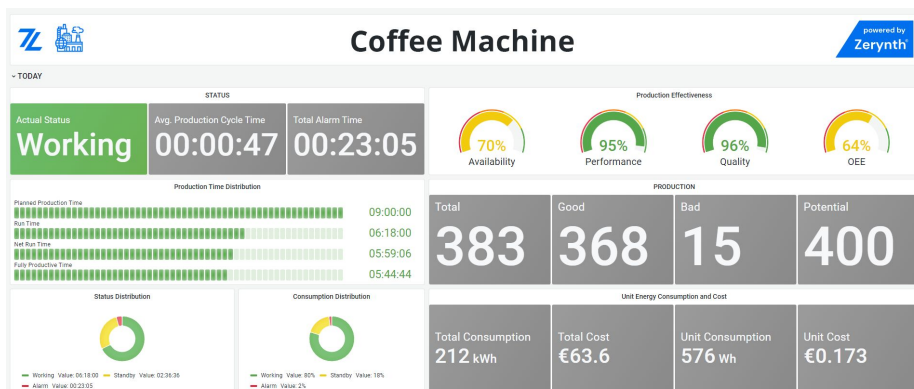## Energy production and consumption monitoring
For the coffee machine, we decided to analyze all the data relating to monitoring production and consumption. The OEE and machine production times were then calculated which was essential data used to calculate the performance, availability, and quality of the entire process.

Remote monitoring and real time alarms.
In the event of a malfunction, for example: the lever is not raised correctly after the production of a coffee, an alarm is generated to notify the operator. It is a simple and immediate way to promptly resolve the problem. Furthermore, knowing all the data related to an operation allows you to create a history for making strategic maintenance decisions.

Calculation of defective parts
Finally, the Zerynth Platform was able to calculate the number of pieces produced and distinguished between "bad" and "good" from the presence of alarms during the operating phases. Based on these parameters, all other data and indicators related to the machinery production cycles over time were then calculated. cycles of the machinery over time are then calculated.

ZERYNTH IoT Platform

Edge Device
Data acquisition device designed to integrate perfectly with old and new generation industrial machinery.

Zerynth Cloud Core
A complete IoT platform to monitor industrial machines in real time, predict malfunctions, which easily integrates with any existing IT system in the company.

Zerynth APP Machine Insights
Pre-configured app capable of calculating production times and OEE and setting alarms and thresholds.

PRODUCTS USED
Zerynth Edge Device
Zerynth Cloud Core
Zerynth APP Machine Insights

Zerynth®

Enabling IoT

About Zerynth

Zerynth helps companies digitalize their production processes and develop connected industrial products through a plug-and-play IoT platform designed to enable the 4.0 digital transformation of any industrial machine in a fast, flexible, and secure way.

Founded in 2015, Zerynth has grown steadily. Today it has 35+ team members with deep IoT expertise and industry knowledge with over 100 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.

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Ready to see what Zerynth can do for your business?

LET'S TALK!