



MEGA DIAMANT

## Discover how Zerynth supported Mega Diamant in ensuring **safety in marble quarries** thanks to **IoT technology**

**30%**

Reduction of machine damage risks

**24h**

Real-time monitoring of diamond wire performance

**30%**

Saved time of assistance and revision

"Our goal was to create a smart solution to monitor in real time the machine parameters and the state of wear of our diamond wires, improve safety conditions in the workplace, facilitate our customers in keeping tool registers and optimize the service times. With the support of Zerynth we have created our customized solution, unique in the stone market, and we have achieved the objectives set in less than 8 months, increasing the prestige of our brand".

Marco Bartoli – Managing Director, Mega Diamant

## The Challenges

The stone sector has received a great boost thanks to technical progress and digitalization, which has brought greater sustainability, competitiveness and **safety in the workplace**. The machines used today are increasingly sophisticated and meet the highest requirements of economic and **environmental sustainability**. Quarries today definitely aim at reducing the use of water resources, controlling energy consumption and reducing safety risks.

For these reasons Mega Diamant, a leading company in the production of diamond tools and wires, was looking for an IoT solution that was able to **prevent failures** and guarantee **maximum safety of its products**.



### COMPANY NAME:

Mega Diamant Srl

### LOCATION:

Italy

### INDUSTRY:

Mechanical / Industrial Engineering

### PROFILE:

Company specializes in the production of diamond wires for cutting applications on materials like marble, granite, stone, concrete and steel.

### RESULTS:

#### Increased Efficiency

**20%** reduction of unexpected wire breaks

#### Improved Quality

**24/7** real-time monitoring and alarm notification of machine on/off status

#### Compliance with security regulations

**100%** security compliance with real-time alerts

## The Solution

The Zerynth team provided Mega Diamant with **Wi-Res Box**, a vertical IoT-enabled solution for **real-time monitoring and predictive maintenance**. Each diamond wire is associated with a digital identification number represented by a magnetic card installed in tag **RFID**. It should be inserted in a special receiver presented in the pocket of Wi-Res Box every time when the wire is in work.

Thanks to this it is possible to create a record in the **Zerynth Cloud** containing information about the type of wire used, the maximum **operating time** and the **monitoring of the energy consumption** of the machine. Furthermore, through the installation of **industrial lamps**, any failure, malfunction or improper use is reported in real time.



### MAIN FEATURES OF WI-RES BOX

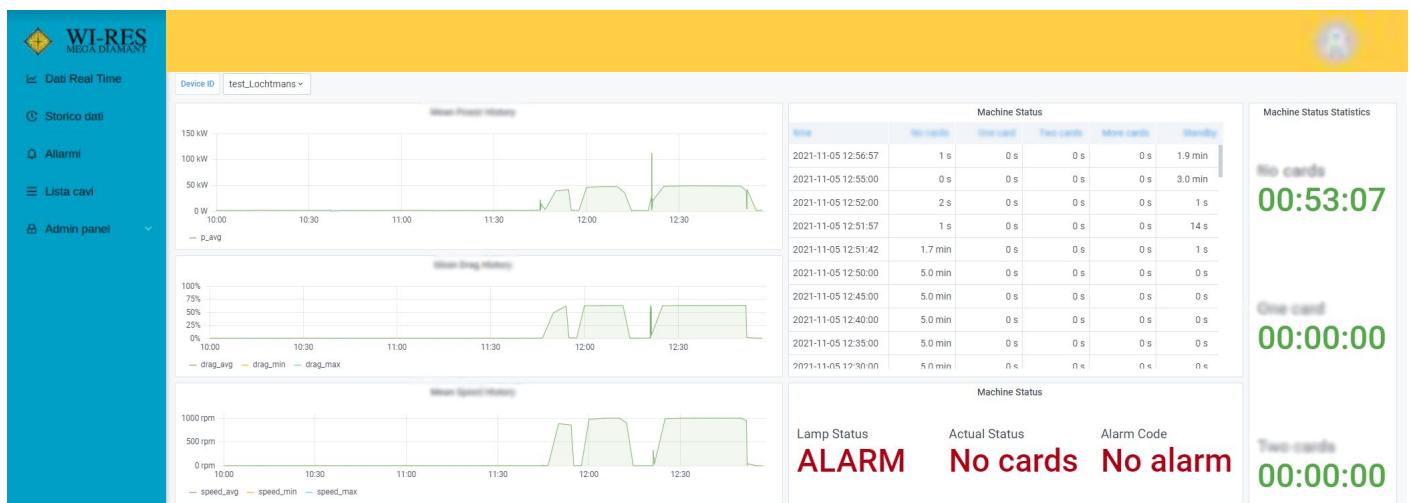
- Communicate with industrial machines over 2G NB-IOT connectivity where WiFi and Ethernet are not available.
- Receive real-time notifications for critical events.
- The detection of hours of use of a diamond cable.
- Automatic monitoring of the processing parameters of the cutting machinery.
- Centralized digital system for data management and automatic reporting.
- Micro SIM slot ready.
- Supports industrial analog and digital sensor channels, communication protocols and industrial relays.
- Crypto Chip – Secure hardware encryption
- RGB status LED
- 32bit microcontroller with 16Mb of Flash memory and 512Kb of RAM memory programmable in Python.

## Custom Dashboards

Thanks to the **customised dashboards**, Mega Diamond can now monitor the speed of rotation, power consumption and on/off machine status in order to start calculating the beginning of wire using. Moreover, now it is possible also to track the machines parameters and send real-time alarm notifications.

### PRODUCTS USED:

**4Zerobox Mobile**  
**Zerynth Cloud**



## The Results

Mega Diamant successfully expanded its large range of high quality products and excellent services with an **IoT Workplace Safety Solution** capable of real-time recording and monitoring of diamond wire conditions.

In just **9 months**, Zerynth implemented Wi-Res Box and enabled Mega Diamant to remotely monitor all operating parameters of the machinery in real time such as the rotation speed, the motor frequency and the total amount of energy consumed. Moreover, thanks to a specially developed application and the **Zerynth Dashboard**, Mega Diamant can obtain all data in the form of dashboards, generate custom reports in convenient formats, and also receive real-time alerts; thereby, with the goal of ensuring all employees a **"zero accident" workplace**.



## Why Mega Diamant chose Zerynth

Operating in a dangerous business sector, Mega Diamant chose Zerynth to create an IoT vertical solution capable of providing safety in the workplace. Working closely together, Zerynth has demonstrated a **deep expertise in the Internet of Things** and a thorough understanding of industrial safety regulations.

The IoT solution created by **the Zerynth team** has become a key element, providing all the necessary information and equipment parameters to the Mega Diamant technical team. Thus, in a short time Mega Diamant added to its product line the Wi-Res Box solution, **a unique IoT device on the market**, providing high-quality and professional safety control over their use.



*"Our project aimed to obtain for the first time the complete traceability of the diamond wire life cycle, offering an advanced service to make cutting operations more efficient and safer. Zerynth is a high-profile technology provider, whose support has allowed us to quickly develop an ambitious project, thanks to which we have improved our skills and our competitiveness."*

**Marco Bartoli – Managing Director, Mega Diamant**





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 30+ team members with deep IoT expertise and industry knowledge with over 3000 successful IoT implementations in companies across many industries. Headquartered in Italy, Zerynth provides support globally thanks to an extensive network of partners in Europe and pan-global locations.

+39 050 8068225 | [info@zerynth.com](mailto:info@zerynth.com) | [www.zerynth.com](http://www.zerynth.com)

### GET STARTED WITH ZERYNTH

Ready to see what Zerynth can do for your business?

LET'S TALK!