Piacenza Open Laboratory used the Zerynth platform for implementing IoT technologies in intelligent mobility and logistics projects
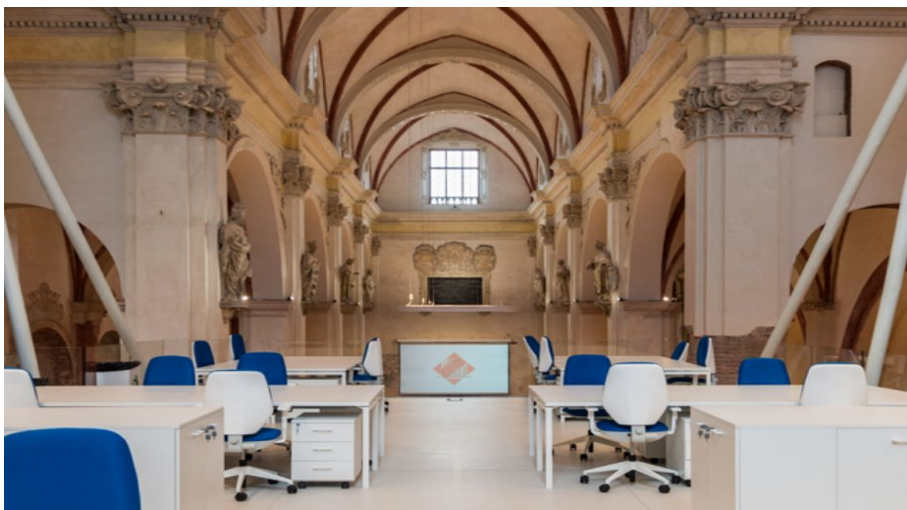
The Challenges

Digitization and the use of innovative resources is not a need only for industries or companies looking for cutting–edge solutions for their machinery. Cities are also moving in this direction, feeling the need **"to be more smart"** and present themselves as points of reference for the interaction between citizens and the city.

The urban redevelopment objectives aim to strengthen sustainability in monitoring mobility systems and the territory, as a whole, providing new applications that adequately enhance these processes. The Open Laboratory of Piacenza has given life to a series of projects aimed at transforming the city into a **city lab**, or more like an innovation laboratory where companies can test solutions in real contexts.

The need to provide opportunities, tools, and applications for improving the relationship between users of the Piacenza urban system, and internal and external mobility around the city were some of the reasons that led Zerynth to participate in the project and to develop **innovative IoT technologies** capable of meeting these goals.

COMPANY NAME:
Piacenza Open Laboratory

LOCATION:
Piacenza

INDUSTRY:
Events organization

PROFILE:
The project is aimed at creating and activating an urban space that can be used by citizens and businesses with the goal of promoting and hosting training activities, city events and spaces equipped with cutting-edge technologies, following innovation and sustainability trends.

PROJECT' PARTNER:

PRODUCTS USED:

Zerynth Cloud
4ZeroBox

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Platform "Mobility"

In order to realize a project that would satisfy the need for mobility, a platform and a demonstrator were created, consisting of interactive **Totems** equipped with Zerynth's IoT devices (4ZeroBox).

These act as environmental, proximity, and movement sensors that are connected to an electronic board equipped with **Wi-Fi** and **GSM** connections. The extracted data is displayed in user friendly views on multi-touch monitors accompanied with a related description on the best means of transport to use at that specific time going from one point to another in the city.

One of the main functions of the totems is the possibility to **estimate the number of people** in the vicinity, thanks to the sniffing of data packets sent by the users' electronic devices (especially smartphones), by connecting to a Wi-Fi network. These systems are programmed in Python, and the Zerynth development environment provides the software libraries necessary for reading the sensors and transmitting data via Wi-Fi or Ethernet.

Platform "Logistics"

From a logistics point of view, the mobile platform exploits Zerynth technologies and the potential of **blockchain systems for tracking vehicle movements**, in which a Zerynth IoT device is installed, especially, for collecting information related to transporting goods.

Based on actual needs and relevance, users can decide which movements and assets to monitor. In this way, using the blockchain is seen as an indispensable aid to help companies to trust more logistics service providers. This, in turn, exploits this data to improve their business proposal.

The implemented IoT solution consists of 6 "black boxes" with Zerynth technology placed on different transportation means and designed to read data from moving sensors. This data is then saved on the blockchain. This is equipped with a **GPS module** and **3G connectivity** and a **SIM** that allows the card to send data in real time to the Cloud. The visualization dashboard of this data is public and, through Zerynth's devices, it also shows this data on apps and software services.
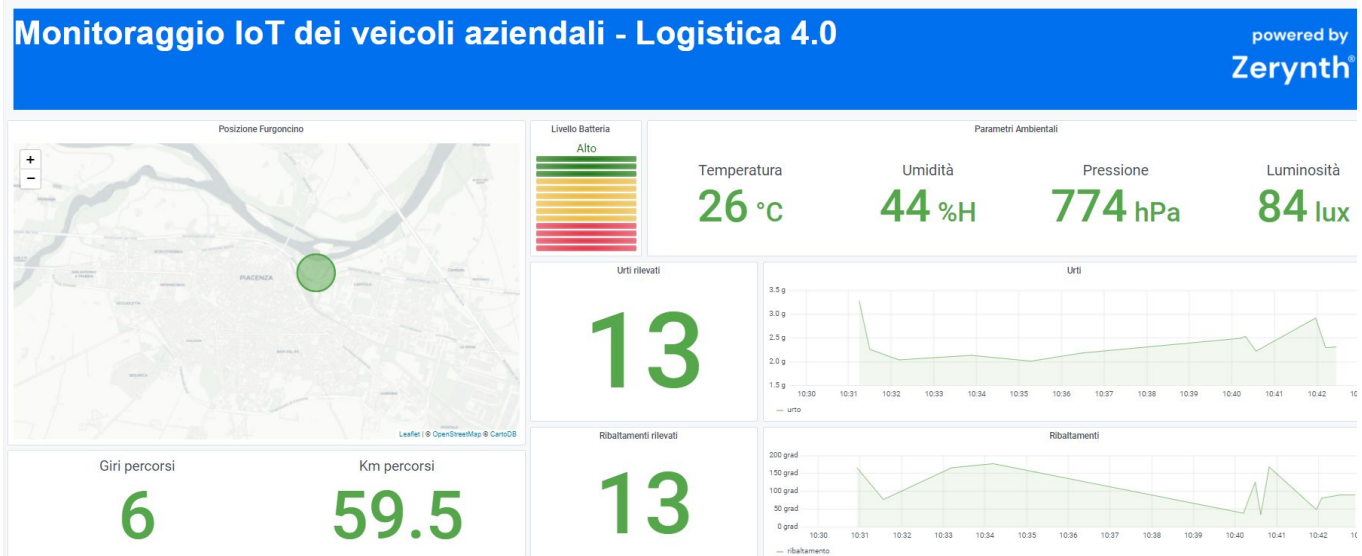
Demonstrator "Logistics"

Logistically, the project involved the creation of a demonstrator, that is, a **3D model of the city of Piacenza** with sensors inserted on the tracker, with the ability to send data to dashboards.

Installed into goods transport vehicles, these technologies are not only used to track their movements, but also to obtain different types of data, such as asset monitoring, acceleration values, number of accidents, temperatures, or humidity.

In addition, **educational sessions** have been scheduled in schools, in order to show the potential and advantages of the project and encourage interest in this type of project. Students then have the opportunity to closely see each technological component placed in the trucks (for example sensors, gsm or dashboards) and understand the functioning of the IoT device inside it.

Why choose Zerynth

The use of **Zerynth platform**, within a multidisciplinary project such as the one proposed in Piacenza and at the service of the city community, was an opportunity to test the **potential of IoT solutions** in scenarios other than industrial ones. The Open Laboratory, in fact, was created with the aim of facilitating the meeting between supply and demand for the development of a smarter city, from the point of view of innovation, technologies, mobility and logistics.

Finally, the collaboration between our team and the city of Piacenza makes it possible to bridge the digital gap, providing new services to citizens and exploiting the data relating to these technologies, for a strategic enhancement of **an increasingly sustainable city**.

Zerynth®

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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LET'S TALK!