



MINISTERO DELL'AMBIENTE  
E DELLA TUTELA DEL TERRITORIO E DEL MARE

Here's how Zerynth designed an IoT device to optimize urban mobility and provide **the best route to the final destination** for each family member.

## The Challenges

In modern society, one of the most limited resources is time. In order to optimize its use, it is necessary to minimize the time spent daily for **transportation**. According to research from BCG and Ipsos, on average, European residents spend 7-13 hours commuting in the city during a work week; moreover, around 58% of those surveyed aren't satisfied with the **traffic density** and the **constant congestion**. With regard to traffic jams, according to the analytical company INRIX, in some cities, residents annually spend about 100 hours per year (e.g. Los Angeles - 104 hours, Moscow - 91 hours, New York - 89 hours) commuting.

## Project description

To optimize family mobility in the city, the Ministero dell'Ambiente has initiated a project: "Mobilitando". One of the challenges was to jointly create a new mobility plan in order to **ease traffic congestion** and improve the ecological state of air in the city. This is done by promoting the use of non-motorized modes of transportation.

As part of the overall project, it was decided to create a "smart" device that is capable of providing visual information in a simple and immediate way for the most environmentally sustainable ways of traveling between home-to-school and home-to-work. Zerynth was chosen for its design and construction for their innovative **IoT technologies**.

### COMPANY NAME:

Ministero dell'Ambiente

### LOCATION:

Italy

### INDUSTRY:

Government Administration

### PROFILE:

The Ministry of the Environment and the Protection of the Territory and the Sea is the organ of the Italian Government responsible for implementing the environmental policy.

### PROJECT NAME:

Mobilitando (Pisa)

### PRODUCTS USED:

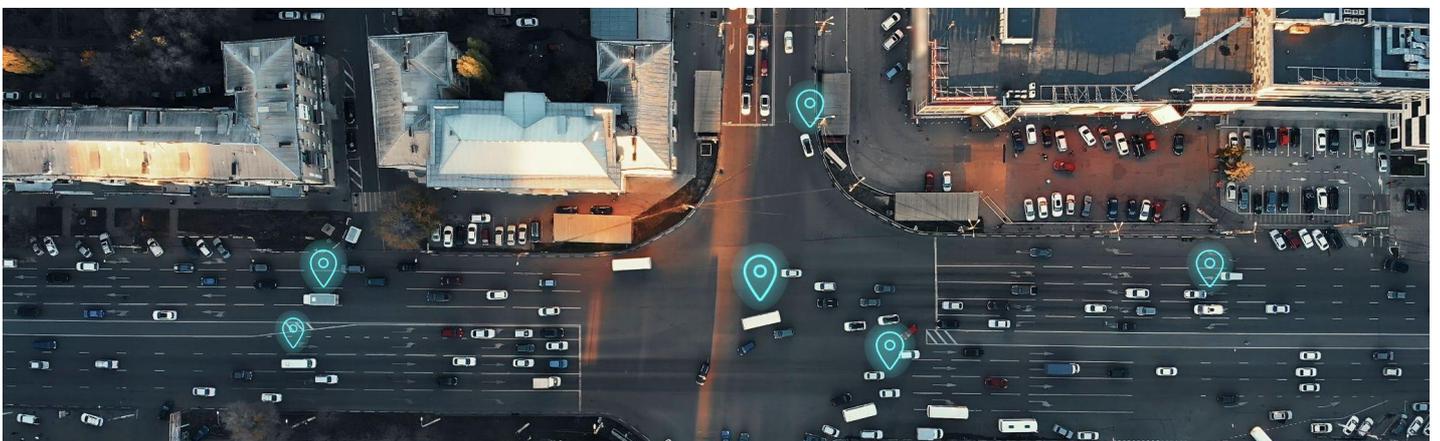
ZM1

Zerynth Device Manager

Zerynth Dashboard

Zerynth Storage

Riverdi Touch Screen



## The Solution

In executing the Mobilitando Project, the Zerynth team developed the NYBRO IoT system and provided the Ministero dell'Ambiente with an **NYBRO system** which is an electronic device that uses a touch screen connected to a home Wi-Fi network. It is able to provide information in an extremely concise and visual way that promotes **sustainable family mobility behavior** for the home-to-work and home-to-school routes. NYBRO acts as a filter with respect to the information obtained online by providing a general and simulated picture of the traffic situation. This helps support **individual mobility decisions** at that specific time of day.



## NYBRO Application

NYBRO includes an **analytics tool** designed to continually improve the configuration of the home-to-school and home-to-work routes. It acquires all data needed for mobility (climatic conditions, traffic status, etc.) from external services such as Km4City, the Google API and the reward system developed by other members of the Mobilitando Project.

As a result of data processing, the Zerynth system visually represents the "best" solution, also highlighting the benefit that would be received if that option were actually chosen. The back-end provides output to a platform where the suggestion is given to a user with the relevant reasons. An output consists of: a timestamp, a unique user identification, a proposed solution (bus, bike, car or on foot) and the various factors for which it was proposed (traffic, weather, etc.) This data can be useful for other applications that deal with **sustainable mobility and that need ready-to-use data**.

### INSIGHTS EACH FAMILY MEMBER GET:

Time and distance of the way home-to-school and home-to-work by bike

Time and distance of the way home-to-school and home-to-work by bus, on foot and by car

List of buses with timetables and stops

Air quality parameters

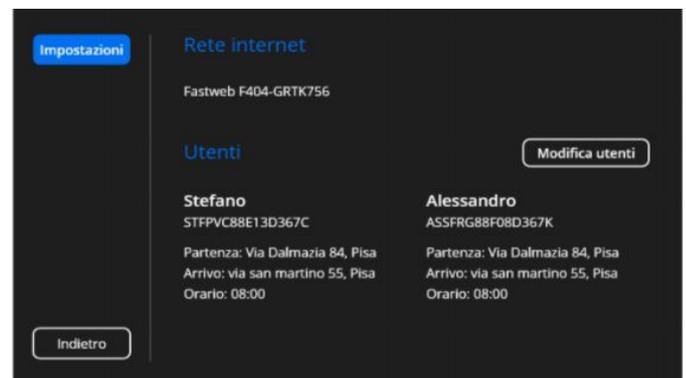
Weather forecast (description, minimum temperature, maximum temperature)

Coordinates for an address

Occupancy data of bike-sharing stations

Traffic and accidents in real time

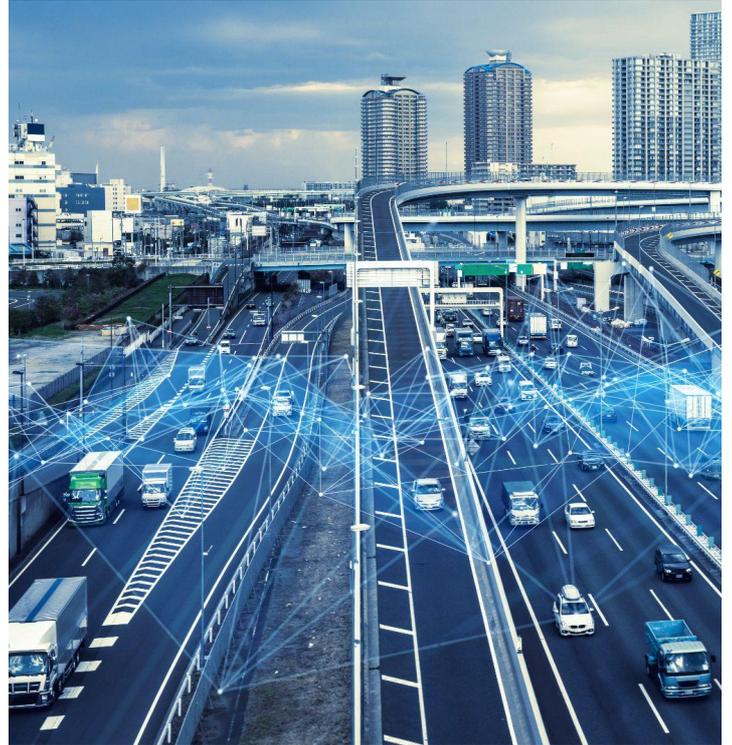
Current weather (description and temperature)



## The Results

Zerynth successfully completed its part of the Mobilitando project by creating a B2C IoT device capable of quickly and informatively suggesting **the best way to arrive at the destination** for each family member, and all this without any coding knowledge.

As soon as other project partners have completed their parts of the project, Zerynth will choose 10 families to test the created system. For a limited time, Zerynth will provide **10 NYBRO devices free to families** who apply, and who at the end, will provide feedback on the product design and its functionality. The device will then be optimized taking into account all the suggestions received from participants in the test phase. At the end of this process, the final version of NYBRO will be finalized and will then be mass produced and distributed.



## Why Ministero dell'Ambiente chose Zerynth

Based in Pisa, Zerynth has participated in many local projects organized by Ministero dell'Ambiente for many years. Zerynth has continually proven itself to have **extensive IoT experience** and expertise not only in the Industrial sector, but also in the **consumer sector**.

Expertise in the IoT domain, experience across many industries, and a list of positive reviews from the leaders of many business sectors validate **the quality and expertise** of the entire **Zerynth team**. This makes Zerynth a reliable company that is able to achieve all the goals of their projects on time.





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.

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**LET'S TALK!**