



SMART CITIES USE CASE



IOTLABS

LoRa Technology: Mallorca Develops First LoRaWAN™ Smart Island

IOTLABS MANAGES FRESH WATER AND SUSTAINS NATURAL RESOURCES



TOURISM-BASED ECONOMY WITH INCREASING ENVIRONMENTAL LIMITATIONS

Mallorca, the largest of Spain's five Balearic Islands, is known for its white sand and crystal-clear turquoise waters. It's no surprise the island's popularity as a tourist destination has steadily grown to more than 10 million visitors in 2017, up from 6 million in 2010, and just 3 million in the 1970s.

The residential population of this Mediterranean island has doubled from 460,030 in 1970 to 895,000 in 2017. A study by the University of the Balearic Islands anticipates an additional 32.7% population growth by 2030. The report equates this to 25 people for every meter of beach in Mallorca.

"In recent years, there has been a shift in attitude among citizens about the need to conserve our natural resources by saving water, recycling waste and reducing consumption."

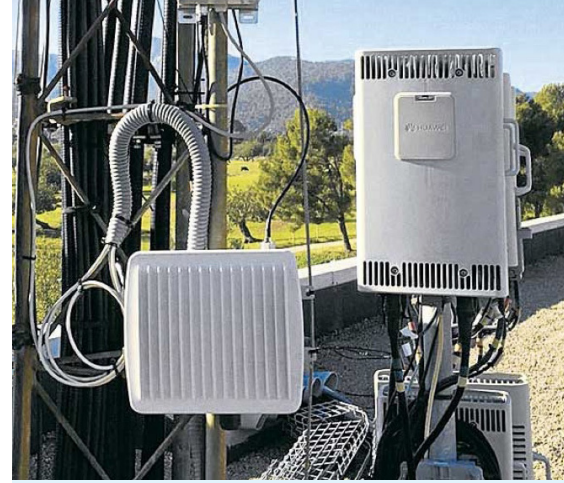
—Marta Cierra, Co-founder, IOTLABS

LORA: THE RIGHT TECHNOLOGY FOR IOT INNOVATION

IOTLABS is a company dedicated to providing Internet of Things (IoT)-as-a-service including installation, software, hardware and maintenance. Founded in Barcelona four years ago, the company's first project was an award-winning automatic accident detection solution installed in vehicles to immediately alert medical centers. The device connectivity technology used was based on Bluetooth, SIM cards and Cellular. As potential customers began to request new concepts, IOTLABS found it necessary to research more appropriate technologies for the applications they desired. With its simple, proven and easy to deploy capabilities, Semtech's LoRa® devices and wireless radio frequency technology (LoRa Technology) became the IoT platform of choice.

"When we discovered LoRa Technology it was great news and knew we had our backbone for an IoT platform with endless opportunities."

—Marta Cierra, Co-founder, IOTLABS



DNA of IoT Use Case

IoT Challenge

- Monitor real-time water storage levels
- Notify citizens regarding consumption and quality

LoRa Technology Used

- LoRa delivers low-power wireless technology
- Island-owned LoRaWAN network provides full coverage

Business Value

- Real-time water management end-to-end solution
- Citizen awareness and participation in reducing water usage
- Successful pilot with city of Esporles expands to entire island



25 people

for every
meter of beach
on the island



32.7%

anticipated
population growth
by 2030



25%

water savings
since installation
of the system

Founders Marta Cierra and Bartolome Olivares decided to move their company to Mallorca. They perceived the island as an “isolated planet” and perfect testbed for developing and field-testing new technologies without the bureaucratic interference expected on the mainland - the Balearic Islands have been an autonomous region of Spain since 1983. IOTLABS headquarters is located in Palma, the capital city, inside an office park for tech entrepreneurs known as ParcBit.

SMART TOWN EXPANDS TO SMART ISLAND – SAVING 25% OF WATER

In collaboration with Esporles Town Hall, Innovation of the Balearic Islands (IBETEC) and the Government of the Balearic Islands (GOIB), IOTLABS connected the western municipality of Esporles. This picturesque inland town of 5,000 inhabitants installed a LoRa-based antenna on the town hall roof - making it the first smart town on the island.

IOTLABS designed and installed a comprehensive water management solution leveraging LoRa Technology. The system provides Esporles with the ability to control water mains and water usage, automatically read and report tank levels, and monitor pH and chlorine ranges to ensure water quality and safety for human consumption. The system has initially seen up to 25% water savings.



“In previous summer months when the water supply would become low, the city would unexpectedly turn off the water to residents. The municipality, now armed with data, has control mechanisms to better manage and proactively regulate consumption.”

—Marta Cierra, Co-founder, IOTLABS

Esporles is providing its citizens real-time water level and usage information that has successfully facilitated community participation in reduction efforts. IOTLABS and the city are currently in the process of adding air-quality monitoring solutions, as well as traffic sensors and smart parking solutions to ease congestion and pollution.

Following the successful trials at Esporles, the GOIB voted and funded a much larger project for IOTLABS: deploying a LoRaWAN-based network across the entire island of Mallorca, and extending utility management solutions for all 53 municipalities.

“Everything you do in data, and in software, you have to be creative – it is easier to be creative in a place like paradise.”

—Benjami Villoslada Gil, Director of Technological Development, GOIB

For more information on IOTLABS, visit www.iotlabs.io/en

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Learn about Semtech's LoRa Technology platform

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Semtech's LoRa devices and wireless radio frequency technology is a widely adopted long-range, low-power solution for IoT that gives telecom companies, IoT application makers and system integrators the feature set necessary to deploy interoperable IoT networks, gateways, sensors, module products, and IoT services worldwide. IoT networks based on the LoRaWAN™ specification have been deployed in over 100 countries and Semtech is a founding member of the LoRa Alliance™, the fastest growing IoT Alliance for LPWAN applications.



Semtech Corporation is a leading supplier of high performance analog, mixed-signal semiconductors and advanced algorithms for high-end consumer, enterprise computing, communications, and industrial equipment. Semtech, publicly traded since 1967, is listed on the Global Select Market under the symbol SMTC and has more than 32 sales and application support offices in 14 countries as well as representatives and distribution support locations in more than 30 countries. Semtech is dedicated to providing proprietary platforms, differentiated by innovation, size, efficiency, performance, and reach.



The LoRa Alliance is an open, nonprofit association that has become one of the largest and fastest-growing alliances in the technology sector since its inception in 2015. Its members closely collaborate and share experiences to promote the LoRaWAN protocol as the leading open global standard for secure, carrier-grade IoT LPWAN connectivity. With the technical flexibility to address a broad range of IoT applications, both static and mobile, and a certification program to guarantee interoperability, the LoRaWAN protocol has already been deployed by major mobile network operators globally and connectivity is available in over 100 countries, with continuing expansion ongoing.