Case Study

WATER LEAK DETECTION USING FIDO AI IN ANNA (VALENCIA)

CHALLENGE

In the urban context, efficiency in water infrastructure management is crucial for municipalities and their concessionaires.

They face constant challenges related to repairing pipes, reducing water losses and managing breakdowns that affect the daily lives of citizens.

Spain must implement the latest technologies to maximize the detection of water leaks in the distribution network

FIDO sensor installation.

ADASA'S SOLUTION

Adasa has carried out a pilot project in the town of Anna that has **analysed a total length of 16.5 km of water distribution network** by implementing disruptive digital solutions such as **artificial intelligence (AI) based on FIDO Tech technolog**y.

The project has deployed a total of **210 acoustic sensors (bugs)** in one week, whose information has enabled a global mapping of valuable information that locates areas free of leaks and critical areas.

FIDO Tech applies the **machine learning algorithm in several phases**:

- **High sensitivity and accuracy in detection**, even at very low vibration levels that produce many large volume leaks.

- **Acoustic data collection, data transmission (LwM2M, https and COAPs) to the Microsoft Azure cloud server** and automatic analysis. Apply proprietary data encryption and compression and cybersecurity mechanisms between bug and app and between bug and server (OAuth2 and MFA).

- **Filters out noises caused by other urban sources** such as traffic, valves, pumps, etc., which can generate false alarms.

In the localisation phase, we have precisely delimited the leaks and established evidence points for excavation.

RESULT

The project developed by Adasa and Aqlara Ciclo Integral del Agua **has helped Anna Town Council** to:

- **Detect a significant number of water leaks** following the identification of possible locations using correlation and field marking techniques.

- **Precisely locate** the point of water leakage.

- **Optimise the analysis of areas** likely to contain potential water leaks by clustering the detected points.

- **Classify the size of water leaks** as small, medium or large.

- **To rule out possible problem areas** in the distribution network, after having obtained the result of a leak-free zone.

- **Discover existing problems in different network** fittings, e.g. valves and fire hydrants that were not in good working order.

CLIENT

Aqlara Ciclo Integral del Agua is the concessionary company that offers integral water cycle services to the population of Anna.

It specialises in the management of drinking water supply services and wastewater treatment systems in the hydraulic infrastructure.