Case study: United Utilities, UK

FIDO AI is an innovative software-as-a-service (SaaS) technology which uses deep-learning neural networks to analyse acoustic and kinetic data from any sensor device to find the water leaks that matter.

Step 1: Generate points of interest

FIDO AI instantly analyses files at scale, and delivers leaks, ranked by size, to more than 92% accuracy

Step 2: Generate points of evidence

Use on site to enhance your existing equipment and narrow down leak position to under 1m

Step 3. Deliver proof of leak resolution

Track activities for auditable end-to-end proof of leak resolution

FIDO delivers right-first-time accuracy in the field

United Utilities successfully uses FIDO AI to reduce wasted site visits and cut the run time of leaks.

United Utilities
Water for the North West

141,000
Data files analysed

92%
FIDO AI accuracy

5-year
Service agreement signed

The Challenge

United Utilities realised that a proportion of visits to points of interest (POIs) by its field teams were inconclusive or resulted in no leak found. There were a variety of reasons such as alternative noise sources and traffic noise. As well as affecting productivity, this meant undetected leaks were running for longer without resolution. It was in part due to the way the new acoustic technology recorded data at lower levels of noise which previously had not been experienced.

The company was manually analysing each acoustic logger alarm audio file and background noises or multiple noise sources were masking the sound of genuine leaks. This was affecting the reliability of the process due to some real leaks being misclassified as non-leaks while some larger, quieter leaks were being missed.

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The Solution

FIDO AI was deployed to analyse every acoustic logger alarm in real time using an API with the client's existing logger estate portal.

We re-evaluated the historic logger files using FIDO AI, then validated FIDO's predicted leak probability with a sample of files that had been confirmed as leak or no leak. These results were then re-analysed by FIDO AI to produce a highly accurate dataset which was investigated on site using FIDO<1 hardware and the client's existing kit.

FIDO AI analysed 141,000 files and continued to improve its accuracy as more data was analysed and validated on site.

The Results

Using FIDO AI for the daily analysis of acoustic logger files delivered clearer results than United Utilities' previous statistics, allowing them to easily and reliably distinguish between usage and real leakage.

Leaks were successfully located on the first visit, with particularly good results on plastic pipes. FIDO AI successfully reduced the number of visits resulting in no leak found as well as the overall run time of leaks. Plus, because the algorithm can analyse over 1,000 files per second, more analyst time was freed up to manage the client's estate.

FIDO is now also identifying leak size, allowing further efficiencies by prioritising specific POIs more quickly as FIDO starts a 5-year service agreement.

> "FIDO AI gives me the benefit as a leakage manager to instantly assess all the alarms on our current acoustic logger fleet. We can then plan those priority leaks ensuring that we can efficiently use our leakage technicians to locate leaks on our network, whilst removing a large number of abortive visits."
>
> **Paul Parr**
> **Leakage Technical Manager**

Try FIDO on your network

To access our free online demo, arrange a trial or speak to one of the team, please contact **sales@fido.tech** or call us on **+44 (0) 1869 929001**.

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