

Case study:

Intelligent sewers: understanding our EDM alarms

Background

The reduction of sewage spills to the environment is a key way for water and sewerage companies to improve service to customers and support environmental improvements. In recent years and following regulatory guidelines we have installed a large number of event duration monitors (EDMs) at our combined sewer overflows (CSOs). These devices tell us the level of sewage in the wet wells, alarm when they are spilling and measure the duration of the spill. This enables us to react to spills that are outside the expected/permmissible behaviour of the overflow.

We would like to use this data more intelligently. Rather than muting alarms over a wide area during a rainfall event, are we able to locally identify sites that are spilling during adverse weather conditions where they are not meeting the permmissible standards? Are we able to use the data to give early warnings of blockages and imminent spills, enabling us to proactively take action to minimise the risk of incidents occurring?

Approach

We launched a challenge in October focused on the Bath catchment. As part of this we shared around two years of data for 89 EDM locations, as well as the associated sewage pumping station (SPS) run-stop data (ie, when the pumps turn on and off). We asked interested parties to process our data in their systems (whether newly developed, repurposed or existing systems) to demonstrate their abilities. We were particularly interested in how the systems coped with real operational data that may have gaps or 'blips' in level readings, rather than theoretical system capabilities using cleansed data.



A three-stage shortlisting process then commenced:

- 1 A high-level review by our business lead looking at core capability.
- 2 A detailed review by a small team of business experts.
- 3 Face-to-face meetings with shortlisted suppliers to understand their products further.

The next step is to move to a live trial with a small number of companies for circa three months. This will test their product in a live environment, comparing alarms generated by our current systems with those generated by the products under test. Is there a difference between the two, and can we improve our operational response?

Results to date

At the time of writing we are approaching the end of stage three. Having had 16 companies submit proposals, we invited six to face-to-face reviews. We are in the final stages of reviewing these offers and determining who to take forward to the live trials.

Even at this early stage, the learnings to date have been useful when launching subsequent Marketplace challenges. In particular, it has helped us to give business teams an indication of interest from suppliers, as well as the level of commitment needed to run a challenge and to respond to participants in appropriate timescales.

It has also highlighted that while we can give an indication to the market of the information we'd like back, the very nature of running challenges reveals opportunities we hadn't considered and allows companies to choose how much time to invest in analysing our data. Being upfront about this means all those involved are aware of the discovery nature of the challenges. It's also engaged a wider supply chain that we would have interacted with through more traditional exploration exercises.

We'll be announcing who we take forward to the live trials on the Marketplace website soon, so keep an eye out if you're interested.

