Danny Rosenbluth, CBDO, Aquarius Spectrum:

HOW TO REDUCE NRW IN AN EFFICIENT AND COST-EFFECTIVE MANNER

Aquarius Spectrum by aliaxis

"We have saved millions of gallons of water so far and that's what keeps us passionate about doing our daily job."

Aquarius Spectrum is an Israeli-based innovative company specializing in acoustic solutions for efficiently supervising municipal water pipelines while reducing Non-Revenue Water (NRW). A unique acoustic monitoring system, which combines IoT sensors and advanced AI algorithms, allows water utilities all around the globe to detect leaks very early in a straightforward manner. This significantly reduces their operational and maintenance expenses and most importantly, saves water.

Danny Rosenbluth, who recently joined the company as a Chief Business Development Officer, briefly explains the importance of adopting innovative technologies to conserve water and energy:

Main challenges in managing potable water networks

Water utilities worldwide are losing 20%-50% of their treated potable water intended for consumption due to leakages. 60% of these are background leaks that can't be detected and controlled unless using active continuous monitoring methods. In addition, water utilities are facing increasing regulation and environmental concerns alongside a lack of adequate personnel and information. These create difficulty in prioritizing short-term and long-term operational actions and investments based on real insights.

Early detection of leaks

Pipe leaks may develop over a long period of time. Without being proactive it is not possible to track them and detect them before they surface. Meanwhile, there is a high level of water loss underground which sometimes results in water contamination. Also, there might be additional damage to the infrastructure together with high repair and maintenance costs. When we lose potable water, we need to produce more of it, which means more treatment, more pumping and transmission that require additional energy investment and more greenhouse gas (GHG) emissions and additional costs. Early detection of leaks, at the beginning of their development, makes it possible to treat them more efficiently, and thus conserve our crucial water resources and protect the environment.

Water infrastructure resilience and big data

State-of-the-art technology which involves big-data analysis can help water utilities improve the resiliency of their networks. This is done by accumulating leak information and identifying problematic pipe sections for replacement. At Aquarius, we deploy our proprietary sensors and collect data that teaches the owners and us how to better manage the system. The data collected by the fixed base sensors provide long-term analysis capabilities and help utilities get a big picture of the health of their system.

The advantage of Aquarius leak detection technology

Aquarius' water leak detection system curates historical data that can be utilized in the future to analyze and understand the system's operations. Our best-in-class sensors include both accelerometers (vibration) and hydrophone (acoustic) fixed base sensors that provide continuous monitoring of distribution and transmission pipes. These sensors are the most sensitive in the market and can be placed further apart in a system and maintain excellent performance. They function well both on plastic or metal pipes and can be used on transmission lines where there are long distances between available listening points. This makes our system very cost-effective from an installation and maintenance perspective. In addition, our system categorizes leaks by intensity.

We also continuously monitor the alert signal to determine if it worsens. We can locate the leaks based on the alert signal strength, duration, and change. All data is recorded; you can go into our system files and hear the historical leak sounds. Our system can detect and differentiate multiple leaks between two sensor points. All leak alerts are given a unique ID to be tracked and monitored from initial identification to repair.

The human side of the technology

When choosing a technology provider, especially in long-term investments, it is imperative to check the human aspect as well. Implementation of innovative technology takes time and requires learning and adaptation.

At Aquarius, we have an analytic team that monitors the system regularly and helps customers learn how to best utilize the data and information. We provide personal interaction with the customer. The analytic team conducts regular calls with the client to review the data and recommend and prioritize workflow assignments.

Proven experience and a global presence

Aquarius Spectrum operates mainly in the United States, Singapore, Israel, Italy, Australia, and the United Kingdom. We serve some of the largest utilities in the US, from Pennsylvania to Maine and down to West Virginia. Through thousands of acoustic sensors deployed around the world, together with our best software and a professional customer success team, we have saved millions of gallons of water so far. That's what keeps us passionate about doing our daily job.

Moreover, our company was recently purchased by the Aliaxis corporation, one of the big players in the global water market. This connection with Aliaxis, which has more than 14,000 employees and 40 factories worldwide, brings a high added value to our company and opens the doors to new markets and access to state-of-art research facilities. It gives us a strong brand behind us and access to broad knowledge.