

CTO OUTLOOK

Unleashing the spectrum of NRW solutions

Under its new owner Aliaxis, the Israeli leak detection specialist Aquarius Spectrum is thinking big to meet the non-revenue water challenge. CEO Koen Verweyen shares the vision.



KOEN VERWEYEN

Chief Executive Officer

Koen Verweyen joined Aquarius in January 2023 as the company's CEO, bringing with him more than 25+ years of experience in innovation & management. Prior, he worked eight years for Aliaxis, where he served in several positions, his latest as director new business development digital solutions.

Before joining Aliaxis, Koen worked in various industries from printing to automotive and telecoms, and he holds two Master's degrees in microelectronics and electronic system design.

What are the key drivers of your water technology strategy?

Sustainability and environmental consciousness are integral to our water technology strategy. We are driven by the vision of preserving precious water resources by reducing non-revenue water and promoting efficient water management practices.

Many utilities are facing these huge challenges in their quest against water leakages due to the lack of sufficient infrastructure replacement budgets. However, even if the required budgets were available tomorrow, there is simply not enough time nor manpower to replace all deteriorated infrastructure at the same time. Just imagine the chaos that would exist due to infrastructure works.

Aquarius Spectrum (AQS) brings value to our customers, to detect new and existing leaks, and we are working towards allowing customers to predict leaks too. Furthermore, we recognise that technology is constantly evolving, and to stay at the forefront of the industry, continuous innovation is imperative. That is why we invest significantly in research and development, even as a start-up company, seeking to push the boundaries of what is possible in water loss management.

How does Aquarius Spectrum differentiate itself from other leak detection players in the market?

We differentiate ourselves from competition in both technological as well as on the service side through 4 key areas:

The first one is that our correlating leak detection sensor solutions are the best in class in terms of sensitivity and analytical power. The maximum distances at which two sensors can be placed are the farthest in the market today – this means we cover the same infrastructure area with fewer sensors than would be required with competitive solutions.

The second key differentiator is our focus on in-depth data analysis and visualisation in a powerful platform. We don't just detect leaks; we provide valuable insights into the entire water distribution system. By continuously monitoring and collecting long-term data, we offer utility managers a

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comprehensive understanding of leak identification and progression.

Our third is our outstanding customer success team. We go beyond simply providing technology by offering an extraordinary level of customer support through our Human-as-a-Service approach. We understand that technology alone is not enough; it is the human element that makes the difference.

Finally, our hydrophone technology is excellent in finding the toughest leaks either on polymer pipes in a distribution network, which is a widespread challenge for utilities, or on any pipe material for large diameter pipes used in transmission networks (trunk mains).

Where are you looking for new ideas and innovations outside of Aquarius Spectrum?

This is a twofold answer – one is strengthening the core technology and capabilities to keep our existing advancement against competition. Here, we work in partnerships with companies with specific capabilities, as well as hiring the best people out there. At the moment we have partnerships with universities in Israel and Australia, which are at the forefront of research into water management. Besides these third party collaborations, we also have strong synergies both technologically and commercially with the Aliaxis core business.

The second part of my answer has to do with my belief that one solution doesn't fit all, as each technology has its ben- ▶

EARS IN THE HOLY CITY

Aquarius Spectrum has installed many of its sensors in Jerusalem.



Source: Aquarius Spectrum

efits and limitations. When you look more holistically at a problem you will discover that combining solutions and combined gathered insights is more powerful than a siloed approach. Hence, we are building an ecosystem of likeminded partners, through start-ups and larger tech companies, to have a full solution approach to the challenges that the water utilities have today – we want to work with the best-in-class solution providers out there.

Which regional markets are proving most receptive to acoustic leak detection?

In the evolving digital landscape of the water industry, we are witnessing a greater interest in acoustic leak detection solutions across Europe and the United States. This is due to the increased expectations of customers, increased government funding, and the growing influence of regulatory frameworks. Within our domestic market, Israel, renowned for its proficiency in addressing non-revenue water, we are actively engaged. We have already seen the UK as an early adopter of this technology. Meanwhile, regulatory bodies in both the EU and the US are mandating water utilities to undertake measures aimed at reducing water loss rates.

It is important to note that receptive-

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ness to acoustic leak detection technology is not limited to these regions alone. Our solutions have been deployed in various other parts of the world, driven by the universal need for efficient water management and the recognition of the value that technology brings to address water loss concerns.

How can the Aquarius Spectrum product offering help with the challenge of leaks in plastic pipes?

Let me underline that most of the leaks today are occurring on metal pipes, and less so in plastic pipes as the technology has not been in the ground for that long. That being said each product has a life cycle, including plastic pipes, so there will be a moment in time where they will need replacement – I believe AQS is ideally placed for that challenge.

Being part of Aliaxis, a global leader in advanced fluid management solutions, makes it easier for us to sharpen our solutions for plastic pipes.

Where does Aquarius Spectrum see the value of acoustics in comparison with other leak detection methods?

We offer correlating acoustic sensors, a newer technology than the noise loggers that are out there on the market, and are less efficient when it comes down to operational efficiency. In many cases, if not all, we can prove that our ROI is within one year, especially where the networks are like Swiss cheese.

The value of acoustics lies in its non-invasive and proactive nature. With acoustic leak detection, you are no longer searching for a needle in a haystack. Instead, the X marks the spot, pinpointing leaks accurately, leading to saved time and resources, while minimising disruptions to the community and environment.

By detecting leaks at an early stage and pinpointing their location accurately, utilities can swiftly address issues before they escalate. We can also continuously monitor as opposed to providing a snapshot in time.

Another crucial aspect is the scalability

of acoustic leak detection solutions. Whether it is a small community or a large metropolitan area, our technology can be tailored to suit the specific needs of any water utility. But again, some technologies can go together with our solutions and by doing so it would form a more holistic solution approach, and a combination of technologies is often a great fit for utilities.

How is digital water becoming a tool to fight climate change, and how is Aquarius Spectrum involved in this?

As climate change intensifies, the water sector faces increasingly complex challenges, including water scarcity, extreme weather events, and rising demand for sustainable water management solutions. By efficiently detecting leaks through the AQS proprietary algorithms and artificial intelligence, utilities can substantially reduce non-revenue water, conserving precious water resources and mitigating their environmental impact.

Furthermore, through our continuous monitoring approach we enable utilities to gain insights into their water distribution networks, enhancing operational efficiency and minimising energy consumption. This proactive approach aligns with climate change adaptation strategies, as utilities can better manage their resources, be energy efficient, and respond swiftly to the evolving climate conditions.

Reducing leaks is also reducing the amount of energy that is wasted – there is a clear one-to-one relationship.

What do you think will be the game changing technologies in the water sector in the next ten years? What is ripe for disruption?

In regard to leak detection, artificial intelligence is going to come into the foreground, in combination with insights generated by combined data sources from other solutions. Hand in hand with leak detection & prediction, new technologies will arise to repair deteriorating pipe infrastructure faster and more economically.

Outside of leak detection we will see more innovation happening in water quality monitoring as this technology gets more accessible, reliable and economically viable. Innovation doesn't always need to come from the technology side – I also foresee that other business models will arise. Besides that, just keep an eye on us or work with us to create the next game-changing technology. ■