



Leak Detection at Angers Loire Metropole

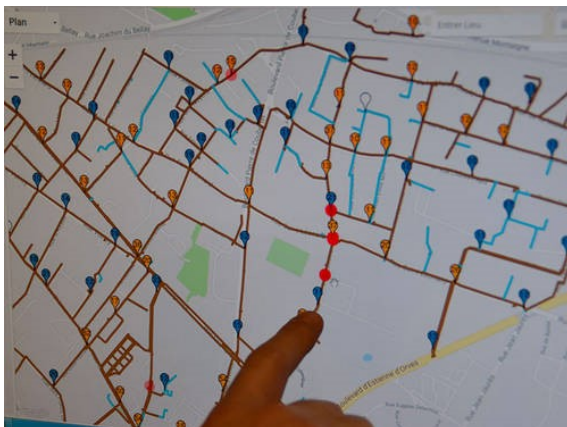
Introduction

Traditionally, leakage technicians have listened for leaks by holding a simple metal rod against a pipe fitting. Nowadays, they use advanced acoustic technology with cellular communication to monitor water leaks remotely at night. In the middle of the night, devices, known as noise loggers, take measurements automatically between 2am and 3am. British technology company, Primayer Ltd, manufactures several types of logger, a recent model being the Enigma3m. Coupled magnetically to the metal water pipe, the loggers listen to the noise from the leaking pipe and locate the positions of any leaks. By deploying such advanced technology, controlling leakage is taken to a whole new level! Since September 2018, the team, which supplies water to the Angers Loire Metropole region, has deployed 792 new remote loggers in Angers, to add to the 130 flow meters, which already monitor the water network throughout the region.

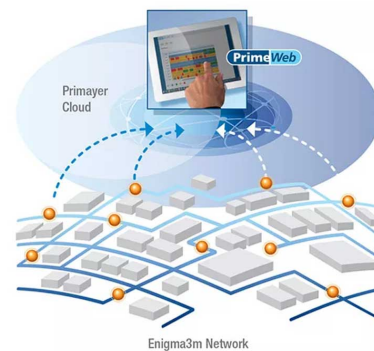
1000 noise loggers have been deployed

« In Angers water network management is made more difficult by the high population density. This is why we install monitoring devices underground and on the pipes themselves. With these loggers we can listen for leaks at night. And record data. We collected data for Rue Chevre at night and found that points of interest converted into actual leaks at an exceptional rate,» explains Florimond Naulleau, head of department at the water company Angers Loire Metropole.

If this technology were used more widely in France, loggers such as those deployed in Angers – which were part of a trial being carried out by Primayer – would provide a highly accurate view of leakage over a wide geographical area, saving water and money for all stakeholders.



Possible leaks identified by loggers in Angers

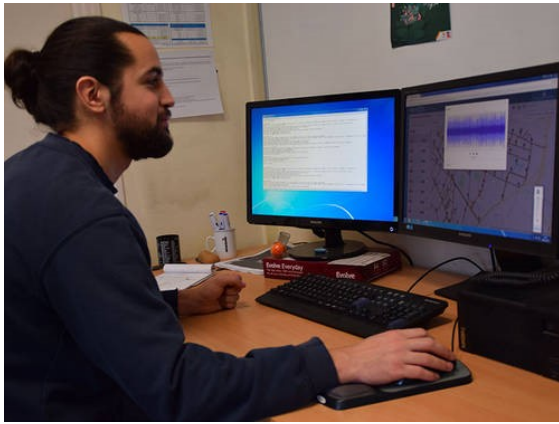


Loggers send data to the PrimeWeb platform in the cloud

Training the team to pinpoint leaks

«We have two software platforms to help us control leakage: TopKapi covers the whole region, PrimeWeb covers the Angers district only, but in greater detail,» continues M. Naulleau.

Seven leakage technicians were trained to use PrimeWeb software. PrimeWeb has been developed by Primayer especially for leakage monitoring. The technicians attempt to find the leak which Primayer trainer, Philippe Lambolez, has set up for them. They search for the leak in the town's water network. Later this leak will be confirmed by the leakage team. « Q11 or Q7 ? » It was like in a real naval battle, but this battle wasn't at sea, the technicians were locating leaks not ships. This is an exciting new technology, which saves precious time, and monitors the network efficiently, precisely, accurately and regularly.



In PrimeWeb data is processed and interpreted remotely.

Since September 2018, the leakage team has deployed loggers throughout the network to help locate leaks. Once a leak has been detected, the data analysts hand over to the network team who fix it. "It's teamwork backed up by professionalism," explains M. Naulleau. Then it's on to the next blue paint mark in the road.



Leak technician about to install an Enigma3m logger

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How does monitoring leaks work?

Each night the 792 loggers switch on between 2 o'clock and 3 o'clock at night. "This is when the town is quietest, because there is little road traffic and fewer roadworks. That means, with the help of the loggers, we can listen for leaks more easily."

From 8 o'clock in the morning on rue Chèvre, the leak technicians check the TopKapi platform to see roughly where the leaks are. Since being deployed in September 2018, the loggers have made this easier.



The pipework at Angers is made from several different materials. "PVC attenuates noise and makes it hard to find leaks," explain the leak technicians. "Pipes are can also be made of steel, cast iron, occasionally, asbestos cement, or HDPE high density polyethylene." So, to listen properly to the network, the loggers correct for different pipe material.

"In 2018 the team found 50 underground leaks which were losing 130 cubic metres per hour, equivalent to 720,000 litres of water per day," sums up M. Naulleau. Compare this with the total daily water consumption in the Angers Loire Metropole region of 50 million litres.

Leak technicians say "Locating leaks with state-of-the-art technology helps us work more efficiently, accurately and responsively. Noise loggers are both a useful tool and protect the environment by saving water." They also say, "We hate working in the cold, the rain and the mud."

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