A Xylem AMI metrology solution helps to reduce water loss by 80,000m³ per annum

Vrilissia, is a municipality of Athens, located northeast of the Greek capital. In total it spans an area of 3.6 km² and is home to 45,000 people, while its municipal water supply network is 85 km long with over 16,000 customer connections.

In December 2022, Vrilissia completed a co-funded project to install an integrated system for monitoring and managing its water supply operations. This project involved replacing half of the existing mechanical water meters (8,000 out of 16,000) and installing an Advanced Metering Infrastructure (AMI) network to enable near-real time meter readings and alarm collection.
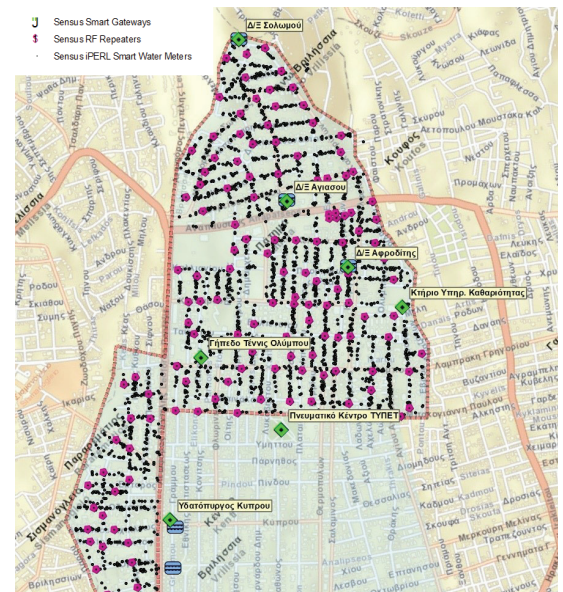
Challenge

The municipality was facing significant water losses due to outdated infrastructure and degraded mechanical meters. These older meters required manual readings, often necessitating multiple visits and the presence of the customer. This process was prone to errors, leading to incorrect billing and customer dissatisfaction. Additionally, the accuracy of these meters declined over time, causing a growing discrepancy between the water supplied and billed.

Solution

To address these issues, 8,000 old mechanical water meters were replaced with Sensus iPERL Smart Static Water Meters. An Advanced Metering Infrastructure (AMI) network was established through the installation of 145 Sensus RF Repeaters and seven Sensus Smart Gateways. This network covers 95% of the newly installed Smart Water Meters. For those meters outside the AMI network's coverage, readings are taken via a walk-by/drive-by solution, and the data is automatically integrated into the billing system.
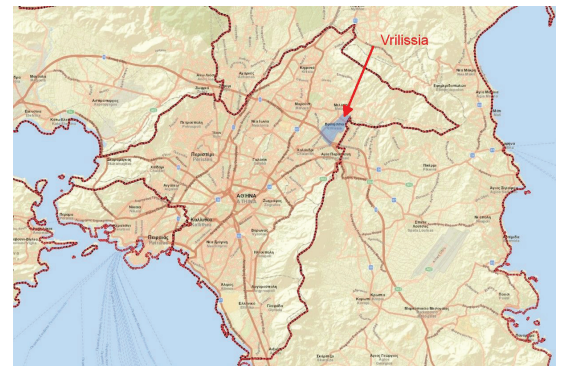
Vrillissia Municipality location Map

Vrlissia Municipality AMI Network components

END CUSTOMER:	Municipality of Vrillissia
CHALLENGE:	Reduction of water losses in the municipality
XYLEM'S SOLUTION:	Advanced Metering Infrastructure (AMI) metrology solution

sensus
a xylem brand

Outcome

- **Reduction in Non-Revenue Water (NRW)**
  Replacing the mechanical water meters with highly precise Sensus iPERL Smart Water Meters. This led to a 15% improvement in the NRW performance indicator between 2020 and 2022. This translates to an annual increase of 80,000 m³ of revenue water, primarily due to the improved accuracy of the new smart water meters.

- **Faster Data Collection for Billing**
  Meters within the AMI network coverage send their data directly to the municipality network. The time required to collect water meter readings for customer invoicing was drastically reduced from twenty days to just one day! - which is the time needed for Drive By reading collection for those meters outside the AMI network coverage.

- **Instant Alarms for Leak Detection and Reverse Flow**
  The AMI network has enabled the low-latency collection of Leakage and Reverse Flow alarms. This allows the utility to reduce network losses due to accurate and timely data from the meters. Furthermore the utility is now able to promptly inform its clients about potential leaks in their residential network and to identify and resolve cases of water theft. This improves customer satisfaction as customers are now better informed about potential issues and can take necessary actions to mitigate against them.
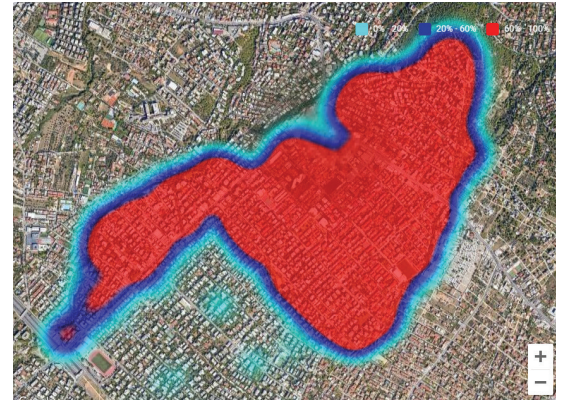
Vrillissia Municipality AMI Network Coverage Map
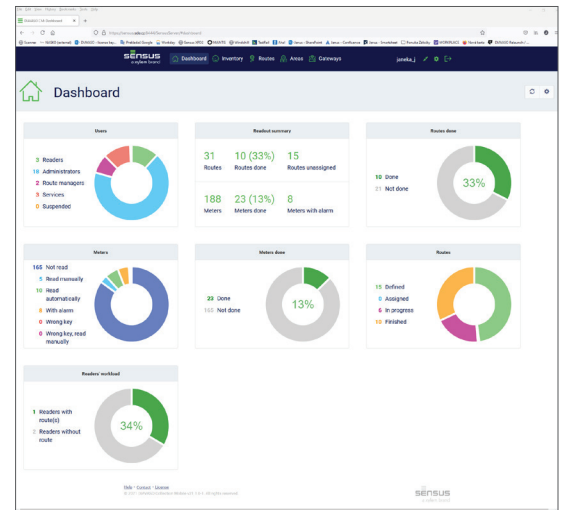
DIAVASO - The mobile reading app dashboard showing the meter reading status