

DIEHL
Metering

24/7, YEAR-ROUND WATER NETWORK MONITORING

CUSTOMER CASE
GAIA SPA
TUSCANY, ITALY





“In response to climate challenges, we are strengthening infrastructure resilience by relying on continuously collected data to anticipate network needs and enable precise intervention.”

Ester DELLA SANTA, Technical Director
GAIA SpA, Tuscany, Italy



ABOUT GAIA SPA

GAIA SpA is the public drinking water utility serving the areas of Lucca, Massa-Carrara and Pistoia in northern Tuscany, Italy. It is committed to delivering sustainable, efficient water services for the benefit of local communities and the regions it serves.

45 MUNICIPALITIES

7 000 KM OF WATER NETWORK

500 WATER TREATMENT FACILITIES

258 000 SUBSCRIBERS

400 000 INHABITANTS

570 STAFF MEMBERS

THE CHALLENGE

REDUCING WATER STRESS IN A TOURIST AREA

GAIA operates in northern Tuscany, in a region characterized by tourist areas where seasonal peaks in water consumption place considerable pressure on an already partly aging network. The utility must also address growing water stress, intensified by climate change.

In this context, with significant water losses and a clear need to optimize infrastructure, the collection of reliable data across the region is becoming essential. Access to regularly updated and actionable information is a major asset for improving operational management, enhancing service efficiency and contributing to more sustainable resource management.

OBJECTIVE

The project aims to create the conditions for GAIA to improve network management, anticipate anomalies and enhance service performance for citizens:

- **Significantly reduce water losses**, with a target of 50% within three years,
- **Modernize the water network management infrastructure** and shift to a data-driven operating model,
- **Accelerate operational response** through real-time alerts and analytics,
- **Enhance service for citizens** by bringing greater transparency and accuracy to billing, while providing alerts in the event of anomalies,
- **Support strategic decisions and investments** through a more precise understanding of network conditions and consumption patterns.

KEY CONSIDERATIONS

A major consideration is to ensure the widest possible fixed network coverage for meters across a large region, while keeping the number of required gateways under control.

Achieving this requires precise mapping and deployment planning in order to position reception points as effectively as possible and optimize network coverage. It also calls for a technology capable of delivering range, reliability and continuity of transmission.

The project also involves a gradual evolution in working practices, moving from periodic monitoring to continuous, structured use of data. Deploying such an infrastructure at scale also requires GAIA to address technical, organizational and human considerations.

DATA AT THE HEART OF A HIGH-PERFORMANCE, RELIABLE NETWORK

A MULTI-CONNECTED IOT SOLUTION

At the heart of the solution delivered to GAIA, mioty® stands out for its high level of reliability and multi-connectivity. Capable of delivering a 98% service level, it maximizes meter coverage while limiting the number of gateways required, thereby reducing installation, operating and maintenance costs.

Data as an operational driver

In this project, the Data as a Service (DaaS) approach is built on an end-to-end value chain that transforms data into actionable insights. The fixed network AMI combines 73,000 HYDRUS 2.0 meters with IZAR IoT Premium gateways to ensure continuous meter reading and stable data transmission through mioty® connectivity. The data is then centralized and enriched within the IZAR Plus Portal and Water Loss Management software suite.

An architecture designed for performance and multi-connectivity

The deployment is based on precise mapping of the areas to be covered and the strategic positioning of antennas to ensure reliable, continuous data collection. Thanks to its multi-connectivity, the infrastructure can connect water and heat meters as well as other IoT sensors. For GAIA, this creates the long-term foundation for integrating additional services.

mioty® : the communication protocol that makes the difference

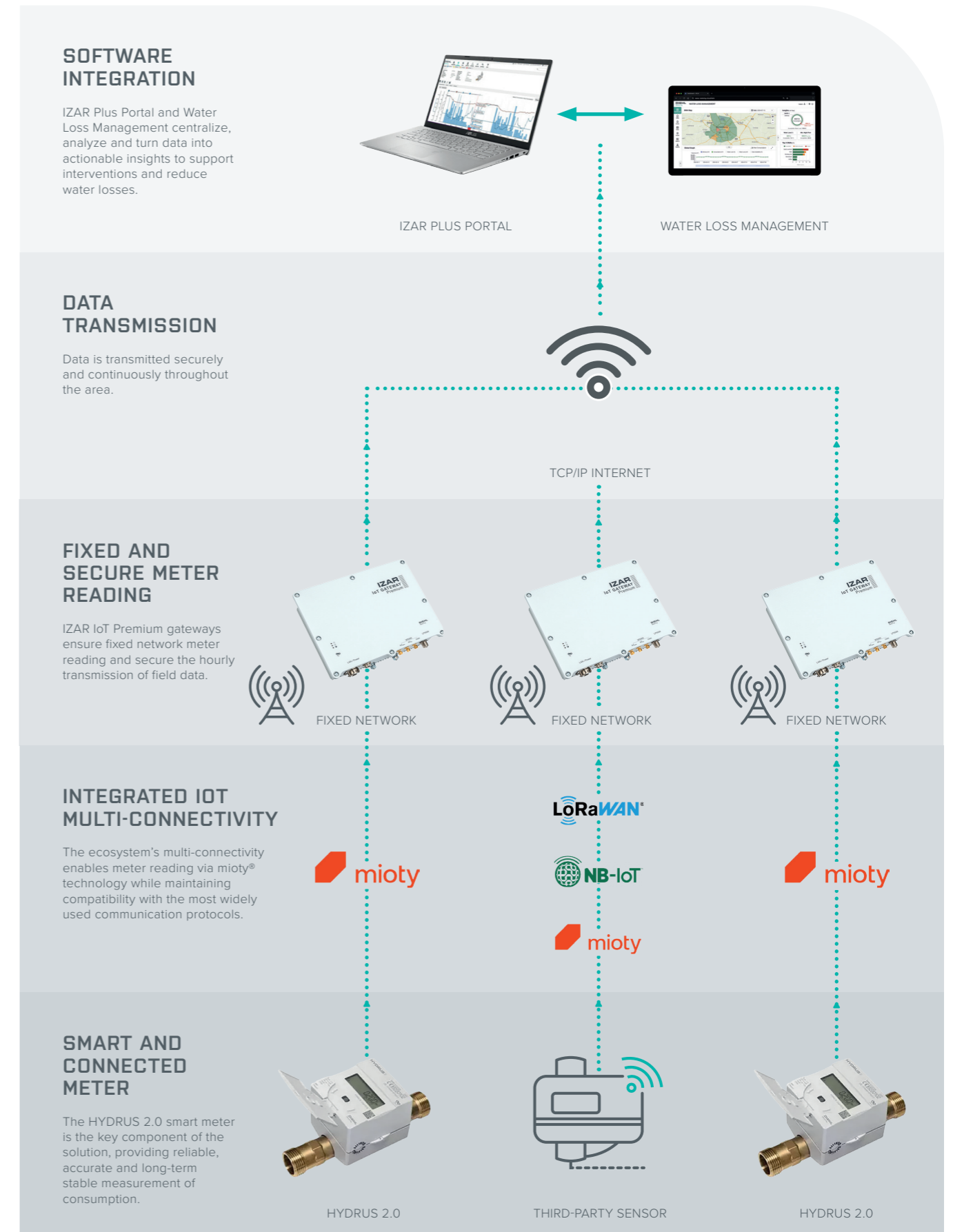
At GAIA's scale, mioty® marked a major technological step forward. Its robustness against interference, large-scale scalability and energy efficiency have helped secure reliable data collection across the entire network. GAIA now benefits from continuous, secure and reliable data transmission, providing a strong basis for more efficient service management.

Rapid deployment, progressive service activation

Our experts managed the deployment end to end, from the installation of meters and antennas to the commissioning of gateways and analytics software. This approach made data actionable from the earliest stages of the project while enabling the gradual activation of new services. It also lays the foundation for a scalable infrastructure able to support future network needs.

For GAIA, the value of the solution lies in its ability to immediately leverage data to better understand the network, refine water balance analyses, detect anomalies earlier and support both operational and strategic decision-making.

DATA AS A SERVICE (DaaS) ECOSYSTEM





RESULTS REAL-TIME DATA, IMMEDIATE ACTION

With the immediate use of real-time data, the project is fundamentally transforming the way the network is managed: GAIA detects anomalies earlier, responds faster and shift from reactive operations to a more anticipatory approach.

<p>73,000 METERS DEPLOYED FOR PRECISE CONSUMPTION MONITORING</p>	<p>1 HOUR 1 READING EVERY HOUR, COMPARED WITH 4 READINGS PER YEAR BEFORE THE PROJECT</p>	<p>24/7 YEAR-ROUND CONTINUOUS MONITORING</p>
<p>98% RELIABILITY FOR CONTINUOUS DATA COLLECTION</p>	<p>11 KM RANGE PER GATEWAY FOR EXTENDED NETWORK COVERAGE</p>	



The solution deployed by Diehl Metering marks a real turning point for GAIA: beyond delivering continuous visibility over the network and earlier anomaly detection, it gives us a deeper understanding of infrastructure behavior over time. We can now anticipate future needs more accurately, guide priorities and direct investments with greater precision.”

Severino BORRINI, Water Network, Innovation and Control Room Manager
GAIA SpA, Tuscany, Italy

- Daily analysis and modeling**
Real-time data feeds daily simulations, helping refine network understanding and support more informed technical and investment decisions.
- Early anomaly detection**
Access to real-time data makes it possible to identify anomalies earlier and carry out faster, more targeted and better-prioritized interventions.
- Anticipatory management**
Data analysis enables GAIA to move from reactive management to a more predictive approach to incidents and network needs.
- Greater transparency for customers**
Continuous consumption monitoring contributes to clearer, more accurate billing. It also makes it possible to alert customers earlier in the event of a detected leak, supporting a more transparent relationship with subscribers.

Beyond the first measurable results already achieved, the project is laying the long-term foundations for more efficient, data-driven water management, powered by reliable, regular and directly actionable data.

It provides GAIA with a solid foundation for structuring network management, better prioritizing actions and supporting the gradual modernization of its infrastructure.

Designed to evolve over time, the solution also opens the way to new use cases, the integration of additional services and the development of a sustainable innovation strategy.

ANY QUESTIONS?

CONTACT US



Your partner in transforming water management

We support public utilities with innovative, data-driven solutions for more efficient water and energy management. By combining smart meters, reliable communication networks and advanced software platforms, we help regions improve operational performance and preserve resources sustainably.

This document presents how GAIA relies on Diehl Metering to strengthen the resilience of its water network, preserve water resources more effectively and benefit from continuous data to manage its infrastructure more precisely.



**Discover the GAIA
SpA project in our
video report.**

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