

AMI Essentials (for water NB-IoT)

Deploy and unlock value-based outcomes and establish a foundation for next-generation AMI water solutions.

As utilities and communities are moving towards climate adaptation, resilient water management becomes critical to address water scarcity issues arising from population growth and extreme weather conditions. Across Asia Pacific, the diverse and extremely challenging environmental conditions make it necessary to ensure that the already-aging infrastructure maintains a long lifespan. With this situation, it becomes imperative to deploy water distribution and management solutions that address water scarcity constraints and asset management challenges.

AMI Essentials for water is available to help you support the design, deployment and operational challenges of your water management solutions by:

- » Improving efficiency to design, deploy and operate your water management solution
- » Building solutions based on future-proof technology
- » Reducing field deployment costs, maximising ROI and value of data from day one
- » Reducing operational costs with the efficient use of the resources in the short- and long-term

- » Improving collection accuracy and protecting revenue by minimizing losses
- » Taking business KPIs to the next level
- » Improving employee working conditions and customer satisfaction
- » Enhancing customer service



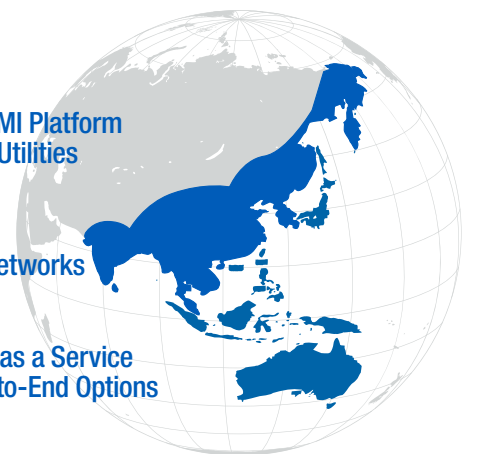
**Flexible AMI Platform
for Water Utilities**



**NB-IoT
Cellular Networks**



**Delivered as a Service
with End-to-End Options**





SOLUTION ELEMENTS

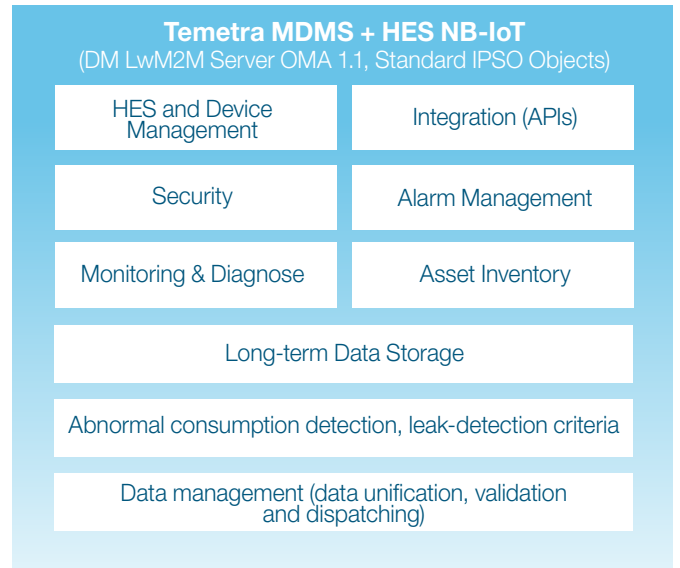
AMI Essentials for water is a flexible and open standards-based, end-to-end solution for digital metering. The offering provides a fully integrated software suite for data collection, device management and data management which enables easy ingestion of data from multiple metering devices through a wide range of communication technologies.

AMI Essentials for water includes options for connectivity and other services to optimise planning, deployment and operations, and assess connectivity risks among many others. This helps improve service quality and extend the solution's lifespan.

Temetra NB-IoT Meter Data Collection and Management Platform

At the core of the offering, Itron includes the Temetra™ water data collection and management system which provides a best-in-class platform for your critical meter data management business processes. Temetra provides a platform for metering data unification, validation and dispatching to customer domain systems and addresses key processes such as long data storage, network monitoring and asset inventory and troubleshooting. It also provides out-of-the-box alarm management, including critical alarm management and operational analytics like abnormal consumption detection.

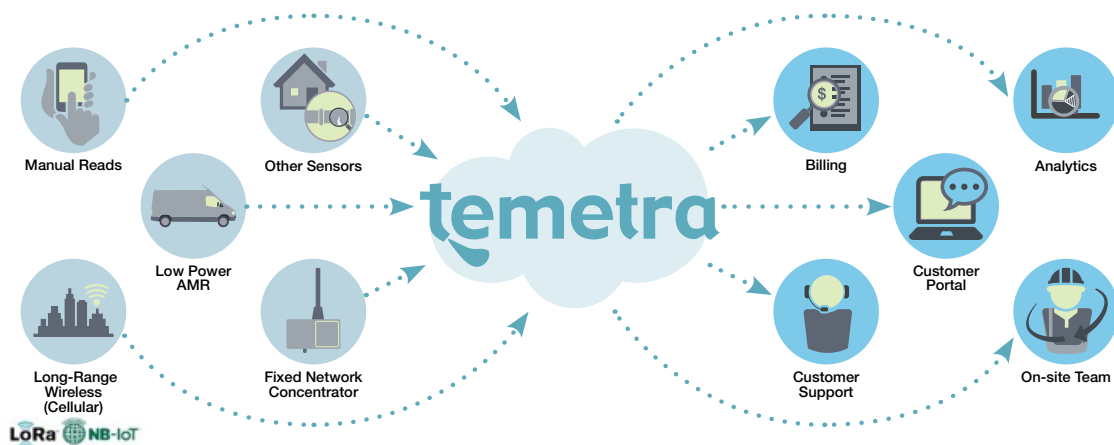
Temetra provides a single user interface which is capable of unifying data from connected meters using different communication technologies like Wi-Sun, Lora WAN or NB-IoT, including manual and AMR reading and other legacy systems. This enables you to define your migration from manual and AMR to AMI at your pace as well as establish an adequate mix of communication technology to ensure maximum coverage and performance.

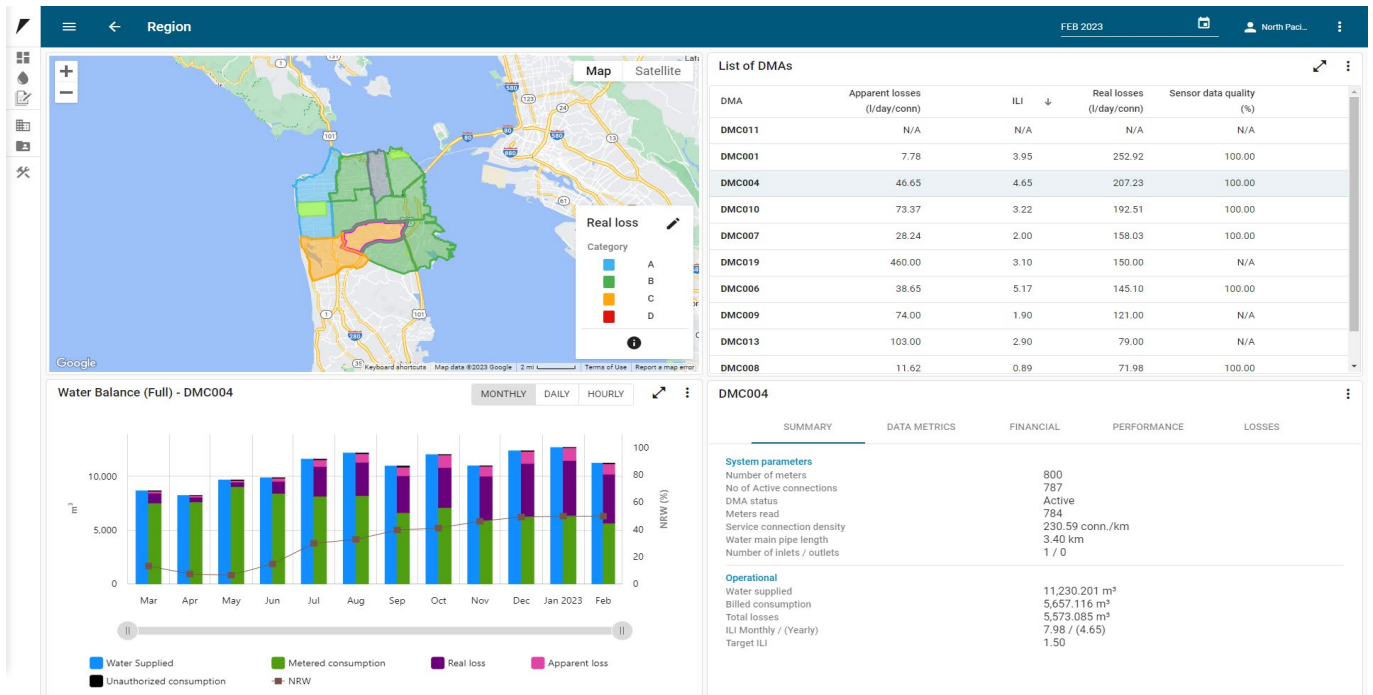


Temetra MDMS functionalities + Embedded Back Office for NB-IoT

In order to support NB-IoT cellular devices, Temetra embeds, out of the box, a head end and a device management system based on LwM2M standards with standard IPSO Objects. This ensures best integration with Itron Intelis™ wSource™ as well as any standard LwM2M-based meter.

Beyond NB-IoT capabilities and multiple communication options, Temetra includes a set of standard APIs for ease of integration up and downstream with utility and third-party systems. As part of the overall platform options, we have integrated non-revenue water and distribution network operational analytics as well as different options for customer portal and consumer engagement.





Temetra Analysis Operational Visibility

Temetra Analysis

Temetra Analysis focuses on delivering measurable results that address non-revenue water losses in your water distribution system. These offerings can extend the full promise of what AMI solutions can offer by helping cities and utilities achieve their business and operations goals through innovative data analysis.

As an end-to-end solution provider, Itron integrates data from many sources, such as network metering endpoints, SCADA, GIS, hydraulic modeling and CIS systems, to provide water utilities with a centralized, holistic view of their water distribution network. Scalable, high-performance, analytical tools and reports turn this data into insights and actionable intelligence that you can apply throughout your operation.

We help you optimize your distribution operations by leveraging solutions like hydraulic modeling software, leak management, pressure management, and pressure sensing to efficiently manage your water network. We do this by providing operational visibility into the health of the water distribution network through the water balance/water audit and by establishing and tracking key performance indexes.

With enhanced monitoring, we will help you prioritize and focus your resources on specific areas where the performance of your water distribution network is in need of critical action. We help you transform your water distribution network into a smart water network.

Reliable Network Communications Platform

The Temetra data management platform ingests data from several technologies, ensuring you the flexibility to use the most appropriate communication network in your deployments.

The system unifies data from legacy systems like Everblu as well as manual and AMR readings. As part of the AMI offering, the architecture supports NB-IoT and other fixed network technologies such as LoRaWAN® and RF-Mesh.

Intelis wSource

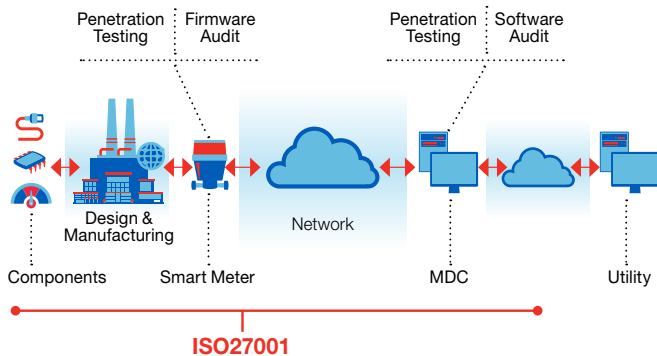
Intelis wSource is a new smart water meter with integrated communication intended for use in residential areas. Leveraging ultrasonic technology, Intelis wSource is engineered to maintain the highest level of accuracy over its entire lifetime and generate extensive data from the water network. Enabled with a low-to-no maintenance solid-state mechanism with field-tested robustness, Intelis wSource is setting the stage for new standards of metrology excellence in harsh environmental conditions and charting the course for more efficient non-revenue water initiatives.



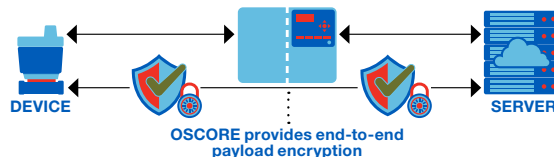
Intelis wSource introduces new levels of expectations in metrology accuracy. Sole meter MID-certified for R1000, Intelis wSource establishes a new standard in precision for measuring water consumption at low flows and new norms of transparency for customer billing. Time-tested with hard waters all around the globe, Intelis wSource metrology is equally stable and reliable under very high temperatures or exposed to extreme humidity.

Assembled with components carefully selected for their durability, Intelis wSource exploits the full potential of solid-state technology to deliver long-lasting performance in the field.

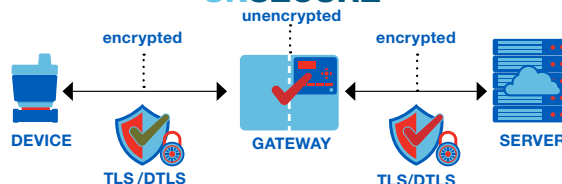
END-TO-END SECURITY



SECURE



UNSECURE



Deployment and Ongoing Services

Our experienced local and Global Delivery Services teams provide the necessary services needed to help you meet your challenges when deploying and running a water management solution. You can leverage our expertise to perform activities around: field surveys and assess requirements for design, roll-out planning, technology selection, interoperability, back-end deployment, integration support, field deployment support, testing, training, security implementation and testing, ongoing operations, service levels and technology longevity, firmware upgrades and warranty.

Enterprise-Class Security

Based on Itron's "Designed for Security" approach, data security is imperative. Itron's approach to security starts with its ISO27001-approved ISM system and security standards-based approach to security management implementation. Security is never skin deep, but instead is based on the seven layers of security to ensure privacy and integrity of all critical data. Usage of unique Role & Device-based cryptographic credentials protect device functionality from the moment it is built and ensures end-to-end security during operation. The Temetra system securely stores all data, with encryption at rest and in-country hosting of systems. We use a dedicated security manager during production which is common to both device and system to generate true random keys, with NIST-approved encryption compliant to FIPS140-2. In addition to existing carrier-grade security for transport, the data can be protected by a digital signature over the network to verify non-repudiation. Whether it is adoption of best practices such as GSMA Security Feature of LTE-M & NB-IoT Networks and the latest application-level end-to-end security provided by OSCORE LwM2M, or the secure transport of security keys into our systems using Public Key Infrastructure verified to each customer order—integrity of data is paramount.

THE VALUE OF AMI ESSENTIALS

AMI Essentials for water allows you to deploy AMI now and tackle the most critical, high-value business cases. At a glance, you can

benefit from our expertise of water management solutions, AMI and metering deployments thereby reducing your risk on decisions related to AMI scale deployments.

Reduce the Risk on Technology Choices

- » Deliver an open, flexible, and standards-based, end-to-end platform
- » Offer technology options that include Itron Gen5 Mesh network and third-party cellular networks that leverage NB-IoT and LoRaWAN
- » Ensure a carrier-agnostic approach
- » Identify, diagnose, interpret and monitor anomalies before issues occur

Designed for Water Utilities

- » Collect, manage and present data using a unified system
- » Support globally adopted utility business processes and technologies
- » Operate solution in a simple manner

Maximize Business Value

- » Improve the data collection process, reduce non-revenue water and operational overhead, and realize a quicker ROI
- » Realize operational efficiency and non-revenue water benefits instantly through natively integrated data analytics
- » Choose flexible deployment and pricing options

Long-term Focused Solutions

- » Ensure a flexible end-to-end platform
- » Focus on addressing water conservation and revenue protection plans
- » Improve key business KPIs (CARL, UARL, etc.)
- » Support long-term plans with highly reliable communication options



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