



SYMBIOTWater
Software Suite for
Smart Water.

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**MEASURE
EVERY DROP.**

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Iskraemeco provides a wide range of communication solutions that can be utilized for designing different meter reading systems:

- **Automatic Meter Reading – AMR, utilizing mobile meter reading via wM-Bus (OMS).**
- **Advanced Metering Infrastructure – AMI, utilizing meter reading via low-power wide-area networks LoRaWAN™ or NB-IoT.**
- **A combination of the AMR and AMI meter reading approaches.**

Iskraemeco offers single-point management access to water, electricity, heat and gas meters, using the same infrastructure for multi-utility devices. This reduces costs per metering point and increases overall efficiency, providing our clients with a comprehensive data flow that aggregates data from smart water meters as well as data management and analytics systems.

Symbiot Water consists of five applications:

- **Symbiot Smart Metering Platform.**
- **Symbiot Neboola – NB-IoT device management center.**
- **LoRaWAN™ network management center.**
- **Grafana – HES. Data visualization and analytics.**
- **Symbiot Energy 360 – customer portal and application.**

Each app can be used as stand-alone or in combination with other products depending on the requirements (AMI or AMR).

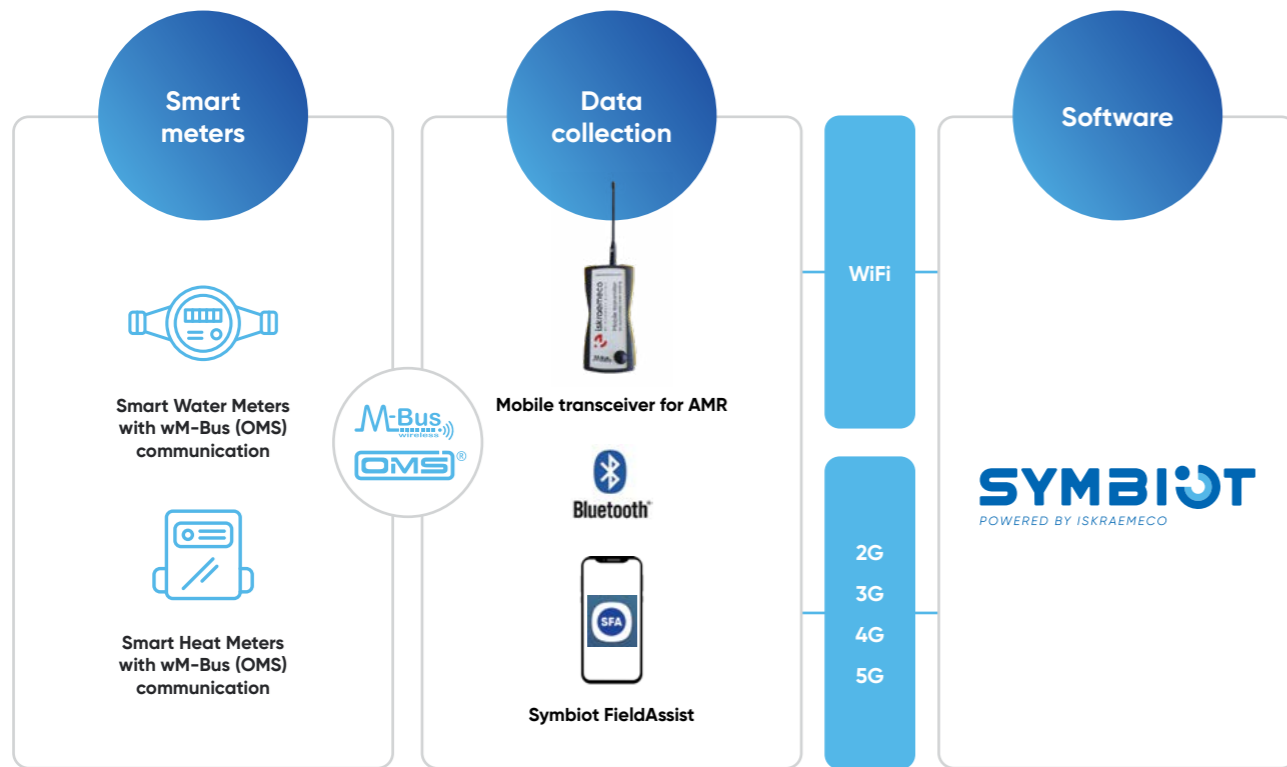
The software suite and all its applications are designed to be used for meter installation, remote reading, maintenance and configuration of smart meters and other devices. The apps are compatible with all Iskraemeco meters. Seamless integration with third-party meters is possible through a powerful SDK (Software Development Kit) or API.

Benefits.

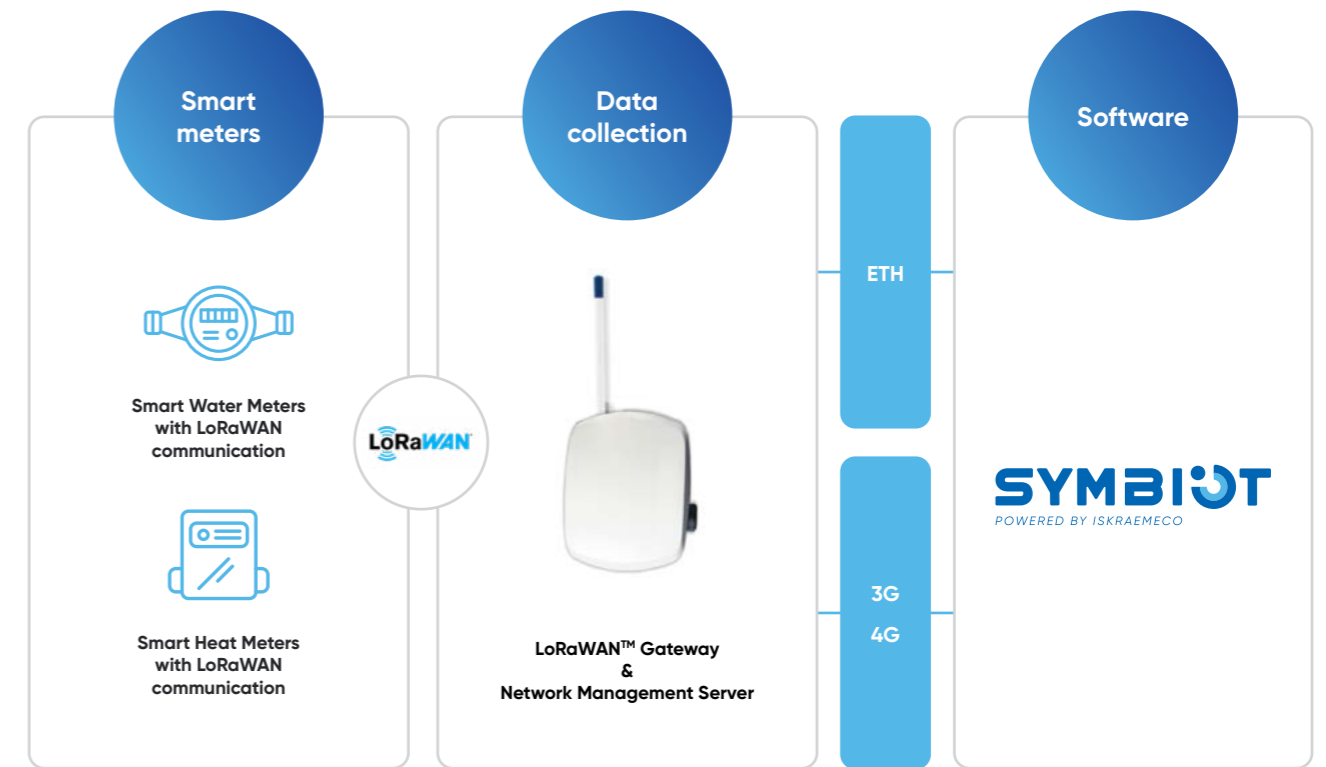
- Modularity and flexible licensing – the modular design of the SYMBIOT Software Suite allows you to customize your system by using only the modules you really need, thereby minimizing your system costs.
- The reliable and fully scalable platform provides you with a solution that not only meets your current needs but also the requirements that may arise in the future due to system expansions, changes in legislation and/or operational requirements.
- Open standards and technologies ensure effortless integration with existing legacy systems and minimize your custom development costs.
- The software suite provides instant notification of any exceptional condition on the water network, so you can dispatch maintenance personnel within seconds of a network issue.
- End-to-end security using the most advanced methods available. Sophisticated authentication and encryption methods are essential for secure data transmission between the smart meter and the head-end system.



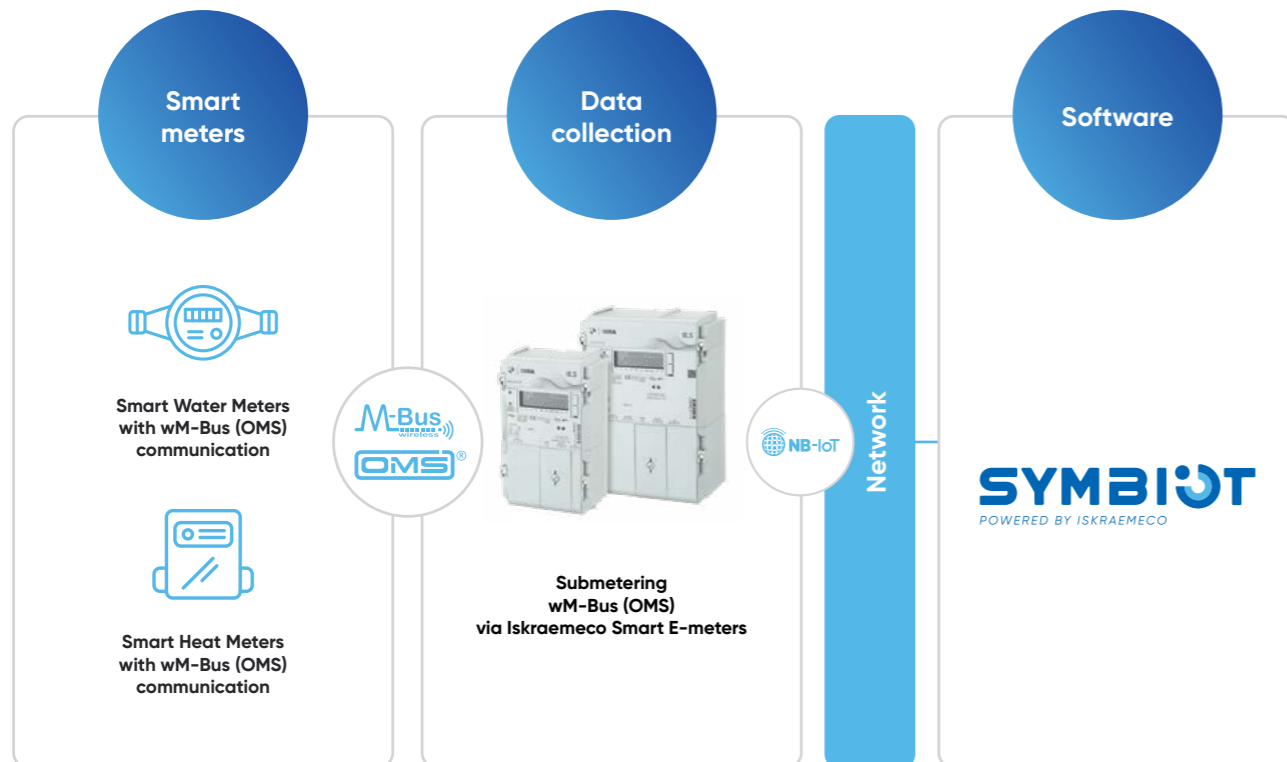
wM-Bus Solution (walk-by/drive-by).



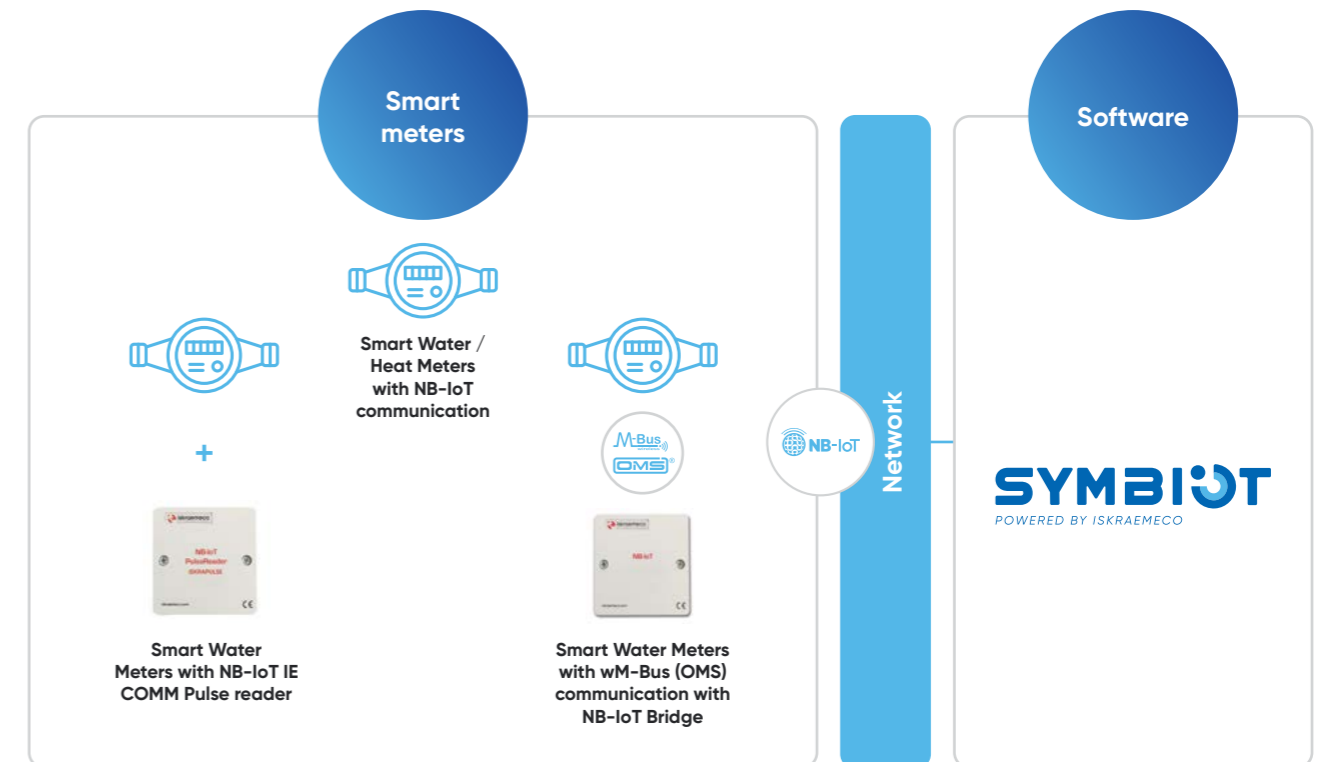
LoRaWAN™ Solution.



wM-Bus Solution (over E-meter).



NB-IoT Solution.



Symbiot Smart Metering Platform.

The Symbiot Smart Metering Platform includes HES, MDM, KMS, integration, meter reading and optical reading functionalities for electricity, heat, and water meters. It is a modular, service-oriented, scalable head-end system solution. It is based on an open architecture and industry-proven standards, such as 3GPP release 13 and COSEM/DLMS on WAN, IEC 61968-9 (CIM) on enterprise connectivity, and KMIP 1.4 on security including key-management systems (KMS). The solution enables access and analyses of massive amounts of data, thereby offering insight, facilitating data-driven decisions and improving the satisfaction of utility operators and end-users.

The platform performs Meter Unit setup, health checks, firmware updates, load disconnection and reconnection, and encryption key management. Additionally, it receives events and alarms from the Meter Units and handles and forwards them to target systems e.g. the MDM. The Symbiot Smart Metering Platform stores data, performs limited data validation and ensures secure delivery of relevant data to the MDM and third-party systems.

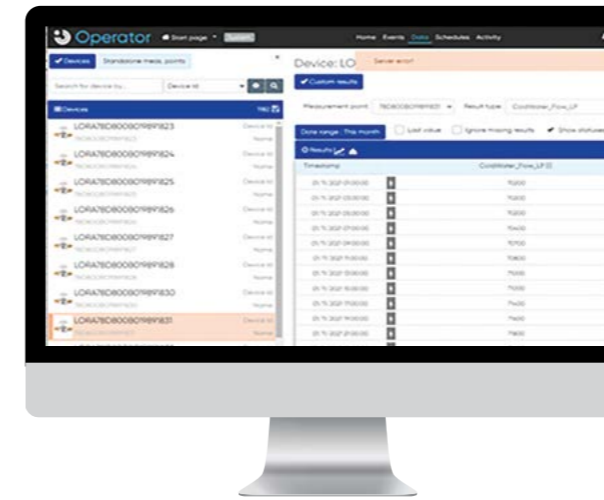
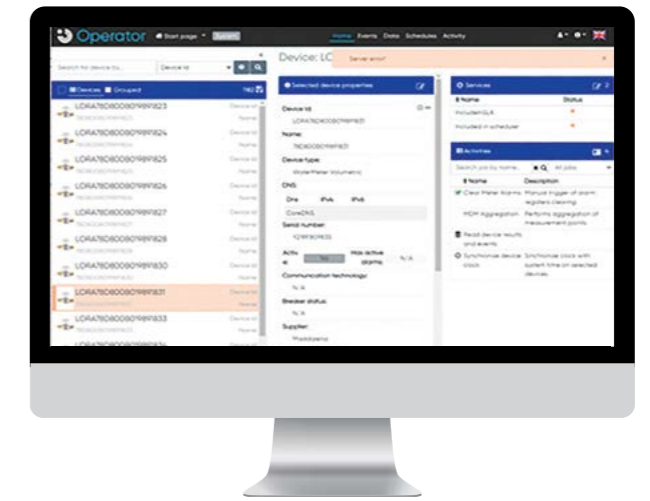
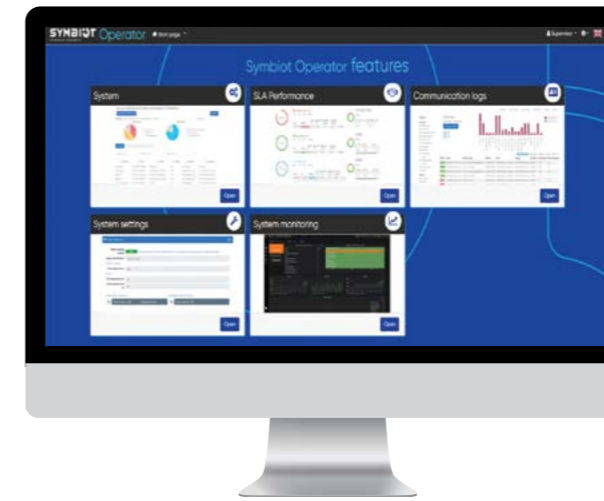
Symbiot MDM

The MDM System is responsible for processing, storing, archiving, validating, estimating and analyzing the meter data, as well as ensuring secure delivery of relevant data to target systems (such as billing, customer portal, CRM, BI, and analytics).



Symbiot HES

Focused on multi-source data collection, SymbiotHES uses a meter-agnostic approach with the ability to process any device data (electricity, water, gas, heat meters). The solution is designed to simplify the management of the meter readout process. The application is available through the web portal (web server).



Symbiot FieldAssist

The solution is designed to simplify field work and give field workers a clear overview of the tasks they need to complete each day. It provides the ability to configure field work and import work orders, and enables drive-by and walk-by solutions for battery-powered meter data collection.

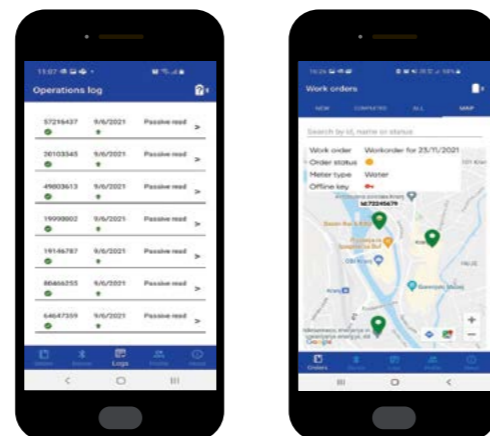
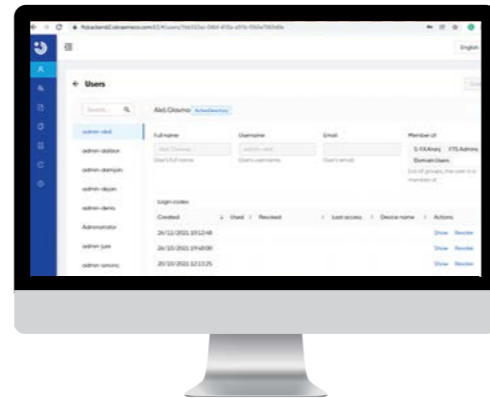
Consumption data can be recorded by field teams using mobile transmitters and mobile reading devices (Android tablet or smartphone). The reading device is then synchronized with the Symbiot software suite. Configuration profiles can be centrally planned, managed, and sent to various mobile devices. Encrypted communication is used between the central data management software and mobile reading devices.

WEB access (Back-end server)

- Assignment of multiple work orders to meter readers.
- Management of mobile meter readers and workload.
- Tracking of meter reading status.
- Export of meter readings to the MDM.
- Overview of reports of executed operations.
- Customization and configuration of settings.
- Overview of communication log.

Mobile field device (Android tablet/mobile phone)

- Overview of work orders for execution.
- Automatic meter reads or manual entries.
- Fast Mode or Full Data Mode.
- Map view with route navigation.
- Overview of events and meter details.
- Camera and barcode scanner support.
- Online or offline working mode.
- Security mode: all operations are executed in a secure mode.



The main advantages of fixed meter reading using LoRaWAN™ and NB-IoT are:

- **Automatic remote water meter readings.**
- **Higher frequency of data collection (e.g. twice per day).**
- **Higher resolution of consumption data (e.g. every 2 hours).**
- **In-depth analytics based on collected data.**
- **Quick detection of leakage and tamper alarms.**
- **Security of data transfer.**
- **Possibility to predict consumption and make forecasts on a daily or weekly basis.**
- **Predictive maintenance – better organization of the working process (a smaller team is needed to manage water meters).**

Symbiot Neboola - NB-IoT device management center.

NB-IoT device management center is a web-based platform for remote device configuration for multiple tenancies and users.

The main function is device administration:

- Remote configuration.
- OTA FW upgrade.
- Locations.
- Mass commands.

Features include:

- Multiple tenancies.
- Different user roles.
- Subscriber data delivery via http post json/xml, email Json/text, webapi http get, mqtt.
- 30 days sensor data log.
- Device communication log.



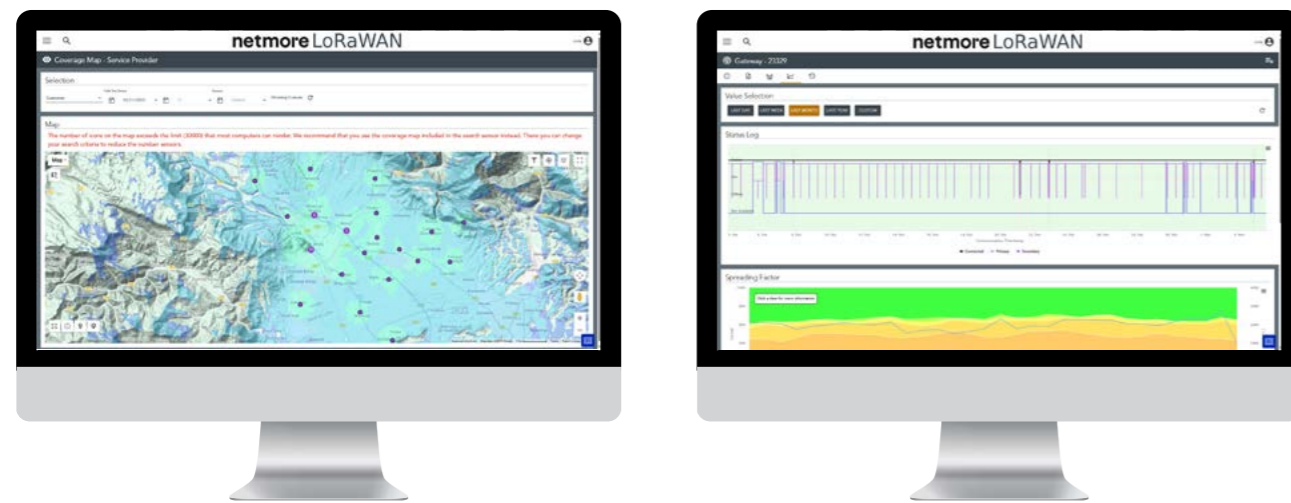
LoRaWAN™ network management center.

Our meter reading solution is designed to transmit the consumption data from water meters to a software platform by using LoRaWAN™ technology. Data reading is performed over a public or private LoRaWAN™ network. The data collection process is automated, manual readings are eliminated. Collected data provide a deep insight into the residential, commercial and industrial water consumption.

Iskraemeco offers a private LoRaWAN™ network supported by the management center.

The main features of the LoRaWAN™ management center include:

- Multi-tenant architecture.
- LoRaWAN™ gateways management:
 - Insight into gateway KPIs.
 - Incident alerts (e.g. power lost, connection lost, high temperature).
 - Alarm and event logging.
 - Remote configuration (e.g. radio, backhaul).
 - Remote SW upgrade.
- End-device (water meter) management:
 - Bulk mass import.
 - Geolocation.
 - Detailed insight into communication (e.g. payload, RSSI, SNR, seen gateways).
- Push or pull payload retrieval.
- REST API.

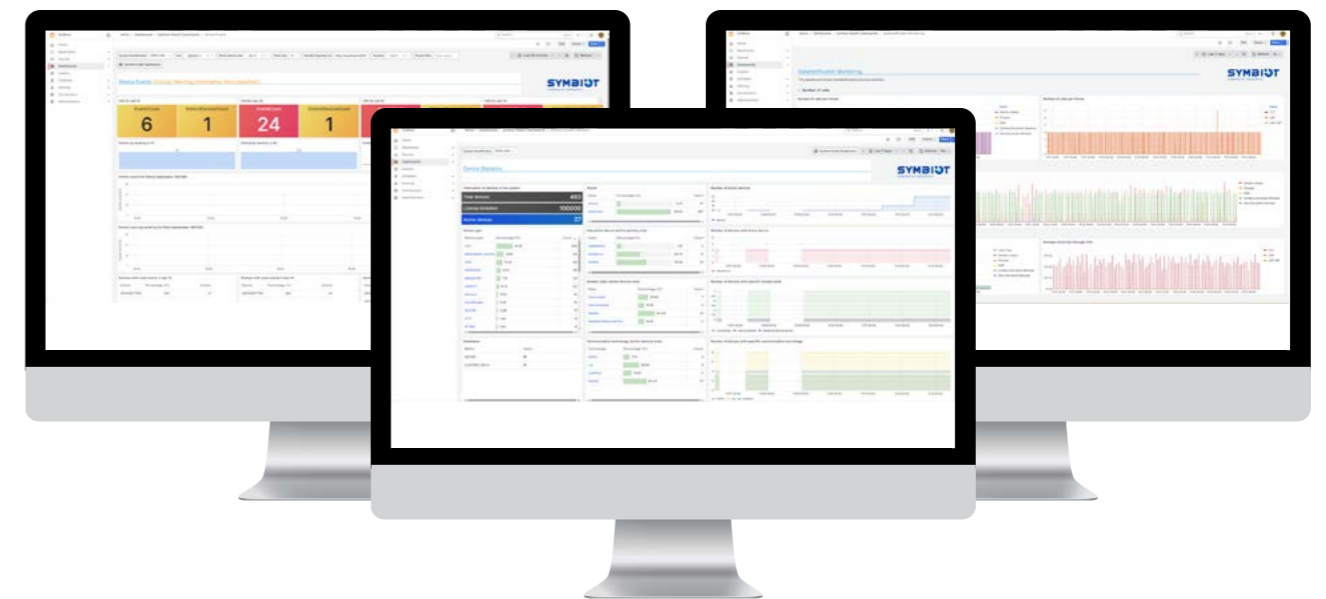


Grafana - HES. Data visualization and analytics.

Empower your teams with real-time insights, actionable KPIs, and visually engaging reports—enabling smarter decisions and greater operational efficiency.

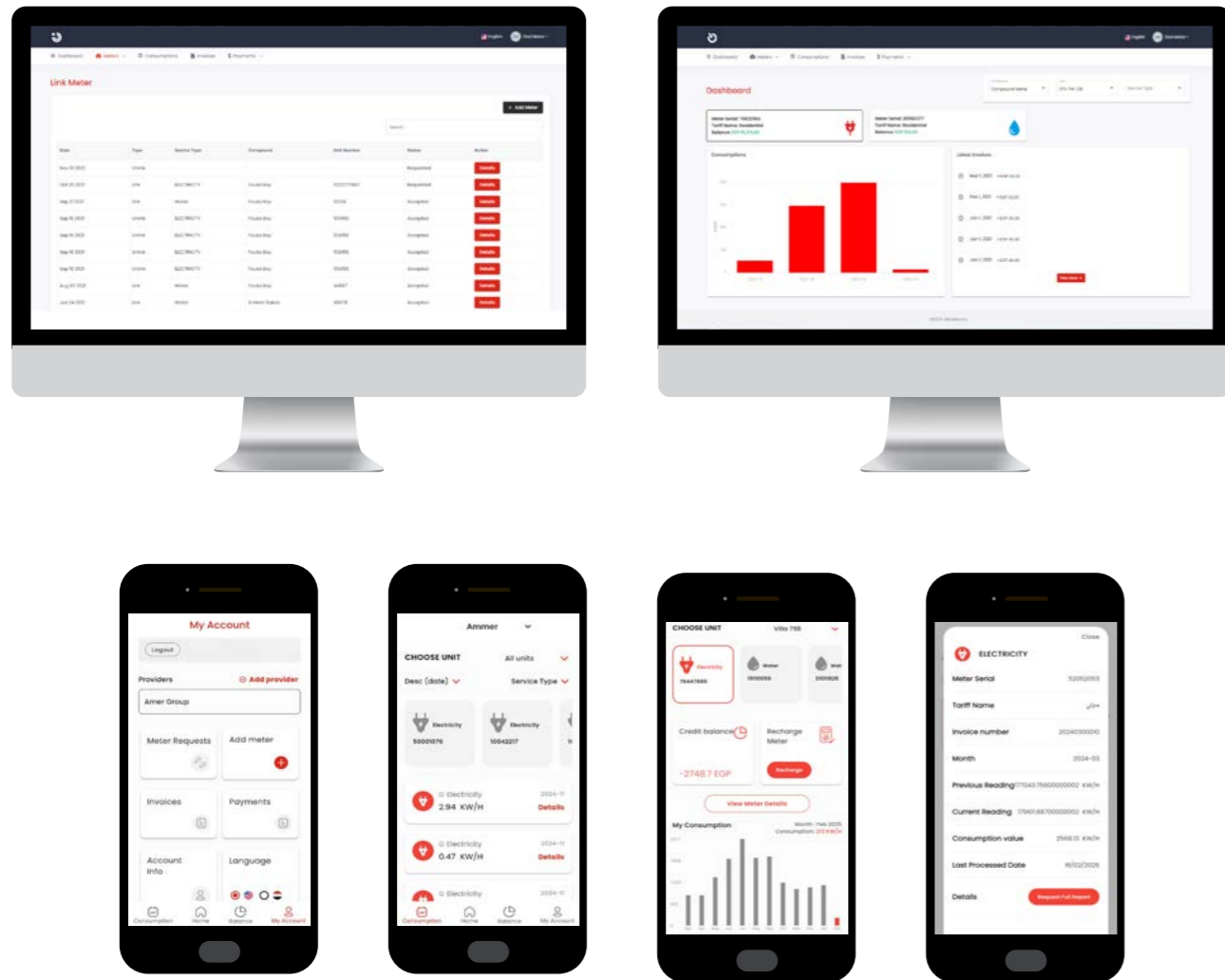
- **Dynamic Grafana Dashboards:** Instantly visualize key metrics and trends with fully customizable dashboards designed for water utilities.
- **Actionable KPIs:** Monitor performance at a glance and drive continuous improvement across your operations.
- **Automated Email Reports:** Keep your team informed with scheduled, easy-to-understand reports delivered directly to their inbox.
- **Intuitive Data Visualizations:** Explore your data through interactive tables, charts, and maps for deeper insights.
- **Comprehensive Coverage:** Support critical utility operations, including water meter collection and leakage detection, with data-driven precision.

Experience how data visualization and analytics can revolutionize your water utility's performance, efficiency, and service quality.



Symbiot Energy 360 – customer portal and application.

Symbiot Energy 360 is a fully integrated customer application designed to improve utility service management. Connected with Symbiot Billing Software, it provides end-users with near real-time insights into energy consumption, billing, and payments, all accessible from their mobile devices. The application offers customers detailed usage analytics, historical data, and personalized consumption insights. It supports various payment methods, making bill management more convenient and efficient. For utilities, Symbiot Energy 360 delivers data on consumption patterns, improving resource allocation, reducing operational costs, and strengthening customer engagement. Its intuitive interface ensures a seamless user experience, promoting smarter energy usage and cost savings.





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