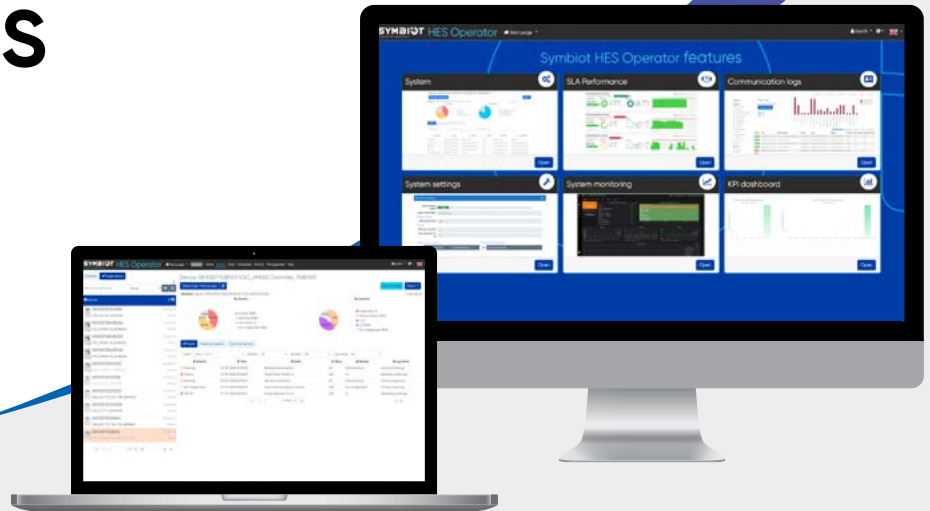


Symbiot HES Head end system

Multi-source data collection



Configure, manage and control millions of smart devices in your metering infrastructure.

Symbiot HES focuses on collecting data from multiple sources; it is able to process different types of meters (electricity, water, gas, heat), including 3rd party devices.

It enables easy and customer-friendly configuration of any scale and deployment in various modes (physical, virtual, HA, DR, etc.).

Its modular design allows system customization, enabling you to use the modules you truly require and thus optimizing system costs. A flexible licensing model is set for adaptation to your individual needs.

Use cases

Residential

End-to-end solution for meters and devices management, connectivity, data analyses and customer applications.

Commercial & industrial

Holistic solution for meters and devices management in industrial and commercial applications.

Grid

Advance functionalities and capabilities to protect critical grid infrastructure.

Submetering

Supporting submetering applications, providing functionalities for data management in multitenant facilities.

Main functionalities

- Management of all types of meters, sensors and communication devices.
- Acquisition, validation and storage of metering data.
- Consumption data, power quality information, and monitoring data.
- Full configuration and remote updates for individual meters or dedicated groups.
- Reliable and secure communication with meters and other devices.
- Monitoring and logging of all communication with meters, overview of critical operations.
- Event processing and alarm management.
- Integration and timely transmission of data to other systems (MDMS, ADMS, CIS).
- High-level authentication and encryption at all levels (TLS, COSEM/DLMS, KMIP v1.4).
- Management of the security keys and certificates of designated/selected devices.
- Secure pull and push mechanisms (IDIS, DLMS/COSEM) for data retrieval.
- User friendly web GUI for simple monitoring and operation with multilanguage support.
- Multiple communication channels (web portals, text messages and emails) for sharing consumption data.
- Extensive reporting, dashboarding and statistics.
- Powerful Open API library (SOAP web services, CIM integration layer, file-base integration, etc.).

Supported communication protocols

Symbiot HES covers all communication options, supporting a mix of these media for the best coverage.

- IP networks depending on location and needs
- Cellular networks:
 - LTE 4G
 - LTE - cat1
 - LTE - M
 - 3G
 - GPRS
 - NB-IoT
- PLC (Power Line Communication)

Communication Protocols: Symbiot HES ensures seamless communication with a wide range of meters. Examples include DLMS, 1107, M-BUS, TCP/IP, and IDIS.



HES web operator

Overview of the applications.



HES events

This dashboard allows you to see all events that occurred in the system within the specified date range.



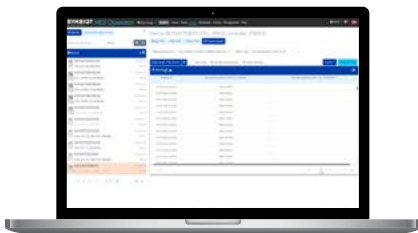
HES SLA performance monitoring

It tracks system data availability by comparing collected results to SLA KPIs.



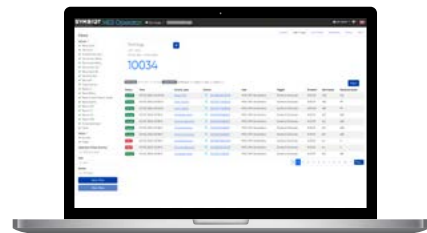
HES device events

Monitor device events by date & severity. Filter critical, warning, informative, or specific events.



HES data monitoring

The dashboard (Grafana) monitors performance and health condition in components that compose Symbiot system.



HES communication logs

Track Symbiot communication activity (logs) for individual devices using the dashboard.

Benefits

High integration capability & optimal development costs

- CIM base integration (e.g. xml message, transport layer MQ, web services).
- SOAP base integration.
- File exchange-based integration (e.g. csv, xml).
- Database-to-database connectors.

Automated meter provisioning

- Meters and other devices installation and provisioning process is automated and simplified, eliminating the need for highly qualified personnel and special commissioning equipment.

Multi-utility scope

- Two-way communication capabilities for water, electricity, and gas devices with a one-point access system.

Complex grid monitoring

- Online monitoring of meters and other devices.
- Meters and other devices health and diagnostics.
- Meters and other devices and system status alerts.
- Meters and other devices action and manipulation tracking
- SLA monitoring.
- Advanced features to support network monitoring.
- Voltage, power quality and power outage data.

Focus on end users and customer support

- Real-time monitoring.
- Immediate notification of exceptions.
- Easy operation via a graphical user interface (Web GUI).
- Communication log for security purposes.