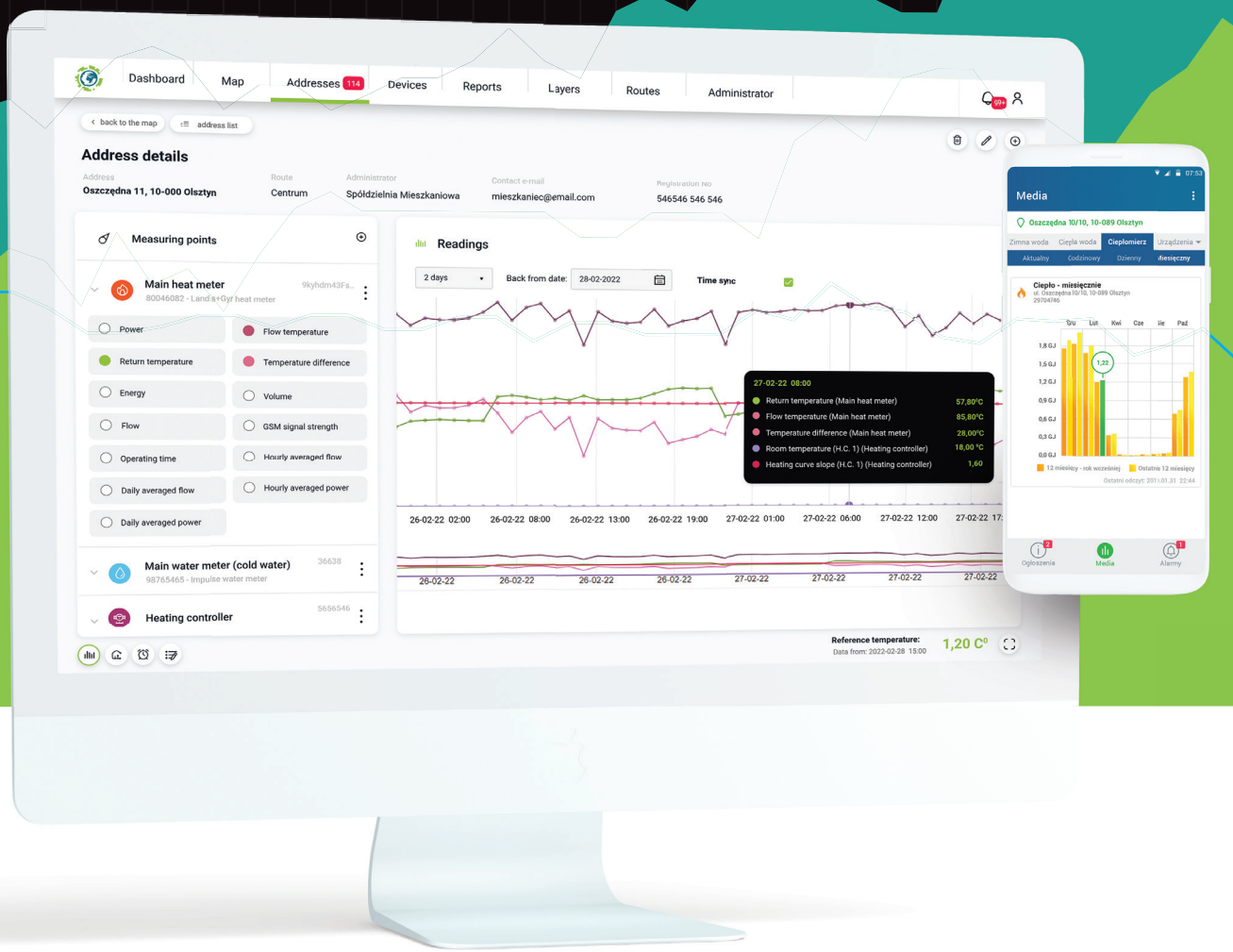
GlobeOMS®

A modern system for supervision, management of distribution and consumption of utilities like heat, electricity, water and gas, which enables active handling of technical infrastructure.



NETLAND

THE SYSTEM IN THE CLOUD – AVAILABLE ANYWHERE

BENEFITS

24/7 access to the cloud system from any place with Internet access

Reading data storage and database supported by professional IT entities to release the Supplier from the need to invest and maintain an expensive IT infrastructure

The highest level of data security provided by entities offering data hosting services

Support for measuring devices from different manufacturers due to the use of dedicated communication protocols

Motivating Customers to optimize the consumption of utilities by accessing up-to-date information on the status of meters, failures and predicted costs

Guarantee of the correctness of settlements - no errors related to the manual reading and inputting of the data

The challenges faced by suppliers utilities include ensuring the reliability of power deliveries as well as the optimization of related the processes, energy efficiency and prevention or quick removal of failure. Customers wishing to reduce their own costs should also actively participate in the process of minimizing losses and the optimal use of the supplied utilities.

GlobeOMS is a system of remote supervision and management of the running of the installation that innovatively combines the interests of Suppliers and Customers. Analysis and management through remote reading of parameters and control of the adjuster settings as well as the synchronized reading of all meters allows collecting a large amount of data. The application of appropriate formulas for such synchronized data carries out the supervision function, automatically detecting all the anomalies in the operation of the installation, even the smallest ones. Providing consumers with data from meters and alarms on system malfunctions, raises consumers' awareness, gives a cost control tool and positively influences pro-environmental behaviour, bringing tangible results in lowering consumption.

SMART DATA MANAGEMENT AND SHARING

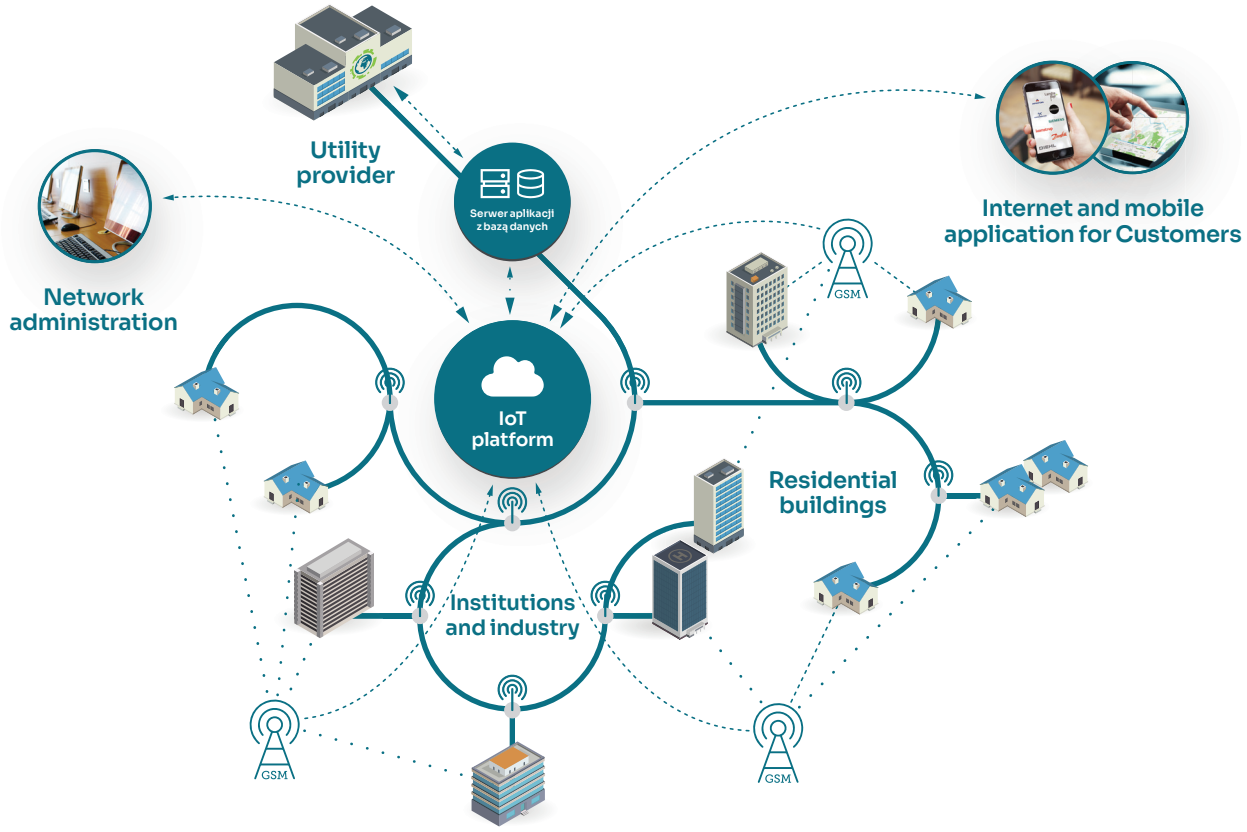
The purpose of the computational cloud is to collect, exchange and share information and to realize control, support and operational functions. The installation of the GlobeOMS application in the computational cloud allows convenient storage, processing and administration of data and sharing of the selected values also on the mobile application. Due to this, expensive and time-consuming construction of an IT infrastructure becomes unnecessary!

SYSTEM DESIGN

GlobeOMS is a supervisory system implemented in the form of a modern service in the SaaS model (Software as a Service) meaning a ready-made set of applications tailored to the needs of the user. It does not require any investment in an IT infrastructure or software installation, it is not permanently assigned to a specific computer. The GlobeOMS license allows simultaneous access for an unlimited number of the authorized Users.

The system can be used on any number of computers with access to the Internet, and the User uses the interface through a web browser.

The GlobeOMS system has a modular construction. Standard and dedicated interfaces of the measuring and controlling devices and an open system architecture allow technical equipment of the building in accordance with the applicable requirements and needs while offering a simple integration of a wide range of the additional services.



A MAP – THE MAIN DATA VISUALIZATION TOOL

Clear visualization of many parameters on the map with the network run

Using the cold/warm color scheme makes it easier to identify and assess the state of the deviation of the parameter

Due to the real-time synchronization of readings of all measuring and control points, the image on the map accurately reflects the current state of the network

Previous solutions were based on the presentation of data in tables. Immediately after logging, GlobeOMS displays to its user a map with the thumbtacks indicating monitored objects, giving a clear picture of the current status in the field. The visualization of the running of the installation on the map with the help of the coloured pins enables the filtering of a large amount of data. The system allows you to load layers from GIS (GML/SHP) systems at any time of exploitation, which enriches the displayed information, e.g. with the process of the power supply networks. The graphical presentation allows a quick identification of whether the detected event is isolated or if the same alarm also occurs in the nearby objects, which may indicate a network failure and not a fault at the measurement point.

ACTIVE VISUALIZATION LAYERS

Visualization of alarm states and putting current positions of service groups makes managing the teams working in the field easier

The insertion of address point pins, loading layers etc. is done independently by the User, without the need to engage external providers

GlobeOMS system allows creating an active layer that graphically shows the state of the selected parameter. The User defines areas on the map covered by monitoring. The green colour of the area symbolizes the average value of the selected parameter, calculated from the readings taken from the objects inside the selected area. Deviations up and down from the average are presented by colouring the surroundings of the address point in colours from navy blue (down) to red (up). Such imaging allows immediate analysis and comparison of the network operation and its individual nodes. This is the best tool for efficient filtering of large amounts of data related to their reading location.

TELEMETRY

BENEFITS

Communication with any devices (water, heat and current meters, regulators, analogue pressure transmitters etc.) by means of dedicated or standard communication protocols (wMBus, Mbus, RS232, RS485, bursts, 4...20mA, 0-10VDC, Ptxxx)

Modular design: readings plus telemetry - the option of the staged implementation or expansion of the system at any time

The simultaneous readings of meters, regulators, pressure and temperature transducers enable accurate analyses

Automatic supervision and notification of the User about measurement irregularities or installation defects

Possibility to extend the functionality of the system by installing additional wireless sensors, e.g. smoke, window and door, motion, flooding, etc.

Automatic reading of meters brings savings by eliminating the work of meter readers. However, the system only gives full benefits when it is extended to telemetry. Telemetry provides a remote on-line access at any time to any point covered by GlobeOMS.

Simultaneous reading of not only the meters, but all devices in the nodes and analysis of the operation of regions or individual buildings, allows for a conscious response and remote changes of settings in the regulators controlling the operation of the nodes, and in emergency situations, even switching off selected points. As a result, a well-balanced network results in increased efficiency and fewer failures.

GROUP CONTROL

BENEFITS

Two-way on-line communication - changes can be made "on demand" at any time

Remote handling of multiple addresses from a single map view

Change of one or more settings, regardless of the type and function of the regulator.

Record of each control operation in the log: control history with date and user ID of the user making changes

The task of telemetry systems is to simplify daily activities related to regular reading and response to events in the supplied facilities/buildings or in the network itself. Group control is used for the simultaneous task of changing selected settings in the regulators, instead of selecting each property separately. The function of group control consists in selecting any area in the map view and changing the regulator settings located in the property covered by the selected area. The group control function supports all weather regulators and devices plugged into the IO port connected to the telemetry control panel, regardless of their type and the installed system scheme. A list of selected regulators is displayed after indicating an area on the map. It is possible to control all settings of the weather regulators with the actual division into circuits operated by specifically selected devices, including on/off/auto switching and summer-winter switching. Each group control operation is saved with a unique user-defined name so that you can undo the entire change at any time.

SUPERVISION FUNCTION

BENEFITS

The supervision module enables setting and editing any number of mathematical conditions and formulas to control any parameter change

Formulas support parameters read directly from devices, their changes in a given time range, as well as the results of formulas (virtual parameters) entered by the User

The positive result of the supervision formulas can be shown on the map as a change in the colour of the pin symbolizing the address point, and also sent as any content to selected Customers (also those who are not a registered system user (Observer)

Alarms are grouped in the Events panel, which makes it easier to manage active states

Each event is saved in the history of the address point, which allows the assessment of the quality of work of specific devices or the entire node

In GlobeOMS the User can set up supervision, i.e. logical alarms. They involve defining formulas to control readout values, parameter changes in time or other factors with a defined limit. For example, a small volume increase determined separately for each water meter function within 3 consecutive hours may indicate a leak, i.e. leakage of the system - the information on the detection of such an increase in the indication of a specific water meter is immediately sent to the building administrator and the Consumer. These types of alarms allow quick identification of failures, and in particular allow to precisely identify faults of internal installations, not signalled by the meters themselves or to indicate places requiring adjustment.

SYSTEM OF DASHBOARDS

Dashboard is a personalized interface where you can observe the most important information from your system. The information is presented in the form of so-called "widgets". (graphs, events, reading values, etc.), whose selection and layout depend on the User.

Example widgets:

Number of active events	presents the number of events that are currently active according to user-defined supervision formulas
Water loss chart	presents the correlation between the amount of supplied and consumed water and shows water losses in the network
Reading efficiency	shows a chart with the number of devices read in relation to all devices in the system (weekly range)
Media sales	presents the quantity of utilities sold (water/heat) and a comparison with the previous period

More than one dashboard can be created for each widget configuration. Once added to a dashboard, the widgets only need to be indicated the data from the GlobeOMS system that we want to observe. The available widgets are fully configurable. One can manage both the dashboards themselves (adding, removing, renaming and rearranging) and the widgets located on individual dashboards (resizing and rearranging by moving or expanding).

BALANCING

BENEFITS

The basis of analyses is synchronized reading of all meters

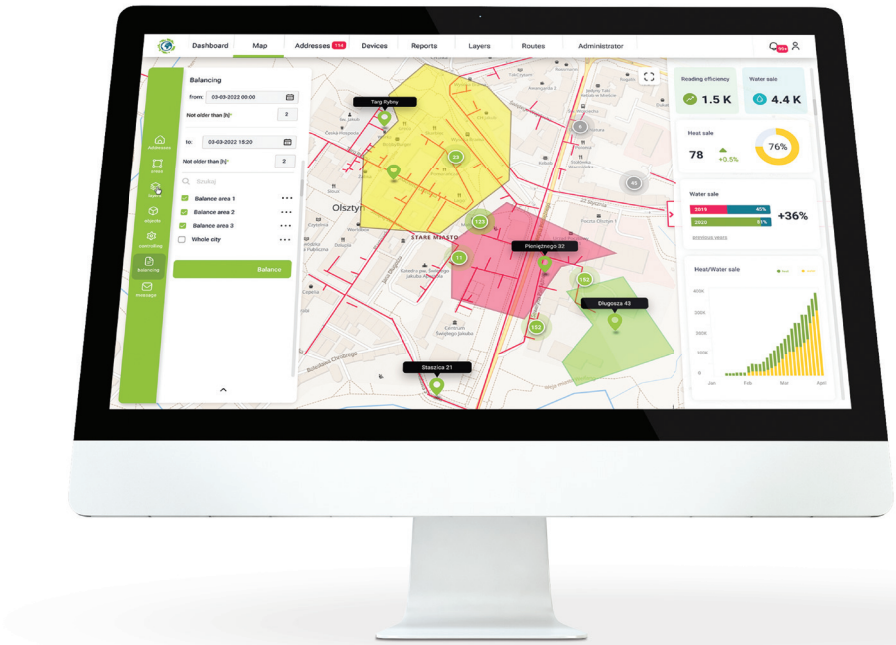
The User creates any balance groups by himself by indicating the map area or in a tabular view.

One meter can belong to many groups at the same time

The created groups form a list summing up the indications of meters to be balanced, compared against the reference meter assigned to the group

More than one reference meter can be assigned - for ring systems

Ready-made report templates for balance groups



If the meters are read in the traditional way, i.e. by meter readers, the interval between the first and last meter reading can be even several days. The GlobeOMS system automatically reads all measuring devices synchronously every hour.

The analysis of the collected information and the comparison of the sum from the examined area with the value from the reference meters allows to identify any anomalies in the operation of the installation which are not detected by other methods.

Balance deficits are the result, among others, of:
- leaky installations,
- no registration of low intakes by poorly selected meters (class and flows),
- time differences when reading the meters,
- water theft (e.g. by-passes, blocking of meters),
- installation and water quality (corrosion, sediment).

Practice shows that the losses caused by leaks from piping and fittings themselves can be from 5 to 12% of the indicated difference, i.e. the losses. Every power or water supply company, as the administrator settling accounts with consumers for energy or water consumption, should carry out systematic analyses in order to be able to take appropriate action in the event of increasing balance differences - to procure an expert opinion, repair the connection or the network or to replace a meter.

AUTOMATIC READING OF METERS – ADDRESSES AND REPORTS

GlobeOMS provides the remote and automatic reading of all types of meters via GSM / GPRS modules. The communication modules are adapted to communicate with all common meters. The data is SYNCHRONISED to full hours at least once every hour, which allows you to carry out any analyses and statistics, and exercise the SUPERVISION function. Meter readings are sorted and assigned to their functions at the respective locations, in order to easily prepare and export reports for further analysis or invoicing.

Report forms are created by the Users themselves, using all collected data, including results calculated according to the formulas and entered as attributes. Such reports tailored to the Customer's requirements are exported to files in text, csv or other formats which are compatible with the billing and invoicing systems.

BENEFITS

The use of dedicated drivers ensures a trouble-free operation of any measuring devices from different manufacturers

Remote access saves time and lowers meter reading costs in comparison to the traditional meter reading method involving physical presence

Synchronized and frequent reading provides material for network analysis, accurate balancing and settlement of utilities

Providing Customers with data motivates them to save

The system can be used in any building and it can be extended with new devices at any time

Early detection of failures and minimizing its costs

SYSTEM ADMINISTRATION (ROLES)

BENEFITS

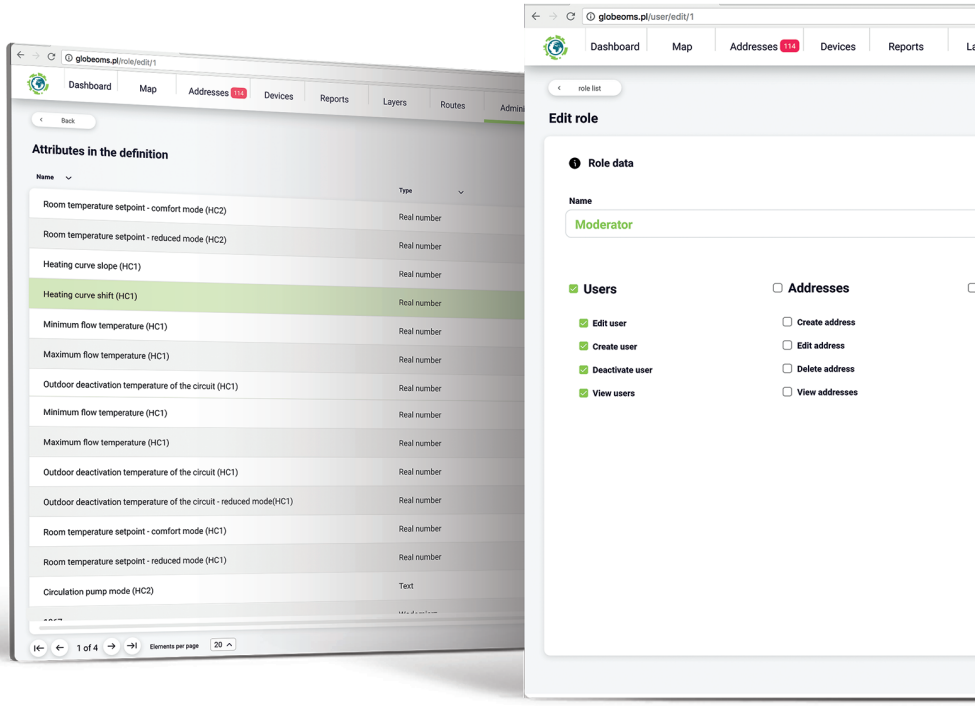
Saving time and ease of use

Precise parameters defining the scope of authority

Security of the sensitive data

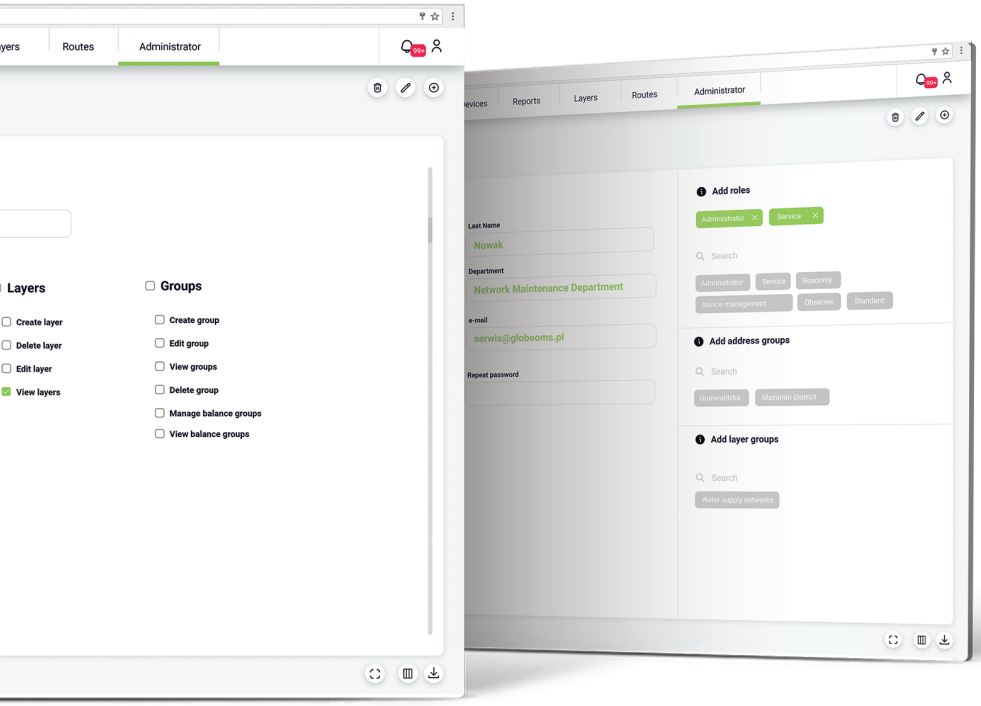
The possibility to change the scope of authority in a specific Role, e.g. one click changes the range of options available to Users in a Role without having to update each one separately

The withdrawal of the Role authority does not delete the User's history



GlobeOMS provides independent, free management of the system, including the creation of user accounts without any quantitative restrictions. The authorization management mechanism is based on RBAC roles (role-based access control). It is about defining the so-called Roles for various functions in the organisation with which a certain scope of authority and duties are associated. Roles are assigned the relevant authority in the system. Then, Roles are assigned to Users, so they get the permission to perform the actions specified for these Roles. The user may have multiple assigned Roles, and each Role may be assigned to multiple Users. The characteristic feature of RBAC is to define Roles and authority in such a way that they reflect the actual functions of the organization. RBAC works particularly well where it is important to apply the principle of separation of duties and authority, and when some operations require the approval of two independent Users.

DEFINITIONS AND ATTRIBUTES



All devices read remotely send a set of default parameters. The Attributes are used to create and handle additional information not included in the transmitted readings. They are created by the User himself, due to which he works exactly with the data he needs.

ATTRIBUTES AS PARAMETERS IN ALARM FORMULAS

Attributes can be added to any list, completing information about the address point (e.g. area number, power station code or the value of contracted power and transmission). The attributes of measuring devices can record data (e.g. the year of legalization, manufacturer's code, descriptive information and others). Attributes can also be numbers that will be further used in the alarm formula, e.g. as a limit value. The control of excessive return temperature to the network consists in checking if this parameter is not higher than the specified value in the examined point. To avoid having to create as many formulas as the values of the return temperature to be analysed, just set the attribute in the measuring point [Tpow. max], then set the threshold value, exceeding of which will be signalled.

BENEFITS

Attributes can be a string, a text or a number and they are added by the User

The attribute can be added to any point in the system as an additional parameter

Attributes allow generation of reports according to guidelines, e.g. billing programs (attributes will be the required identifiers), registration lists, etc.

Attributes can be part of formulas for creating virtual parameters or be used in the alarm formulas

The system has no restrictions on the number of added attributes

Based on the attributes entered, the system allows sorting and filtering of displayed information

COLLECTOR READING – GLOBEOMS ROUTIFY

BENEFITS

Supervision of readings in the GlobeOMS system – verification of the correct operation of devices and

Actual billing based on actual consumption

Time saving – free selection of reading dates and ranges

Convenient readings of devices installed in difficult sites

Security and privacy – no need for physical access to measuring devices

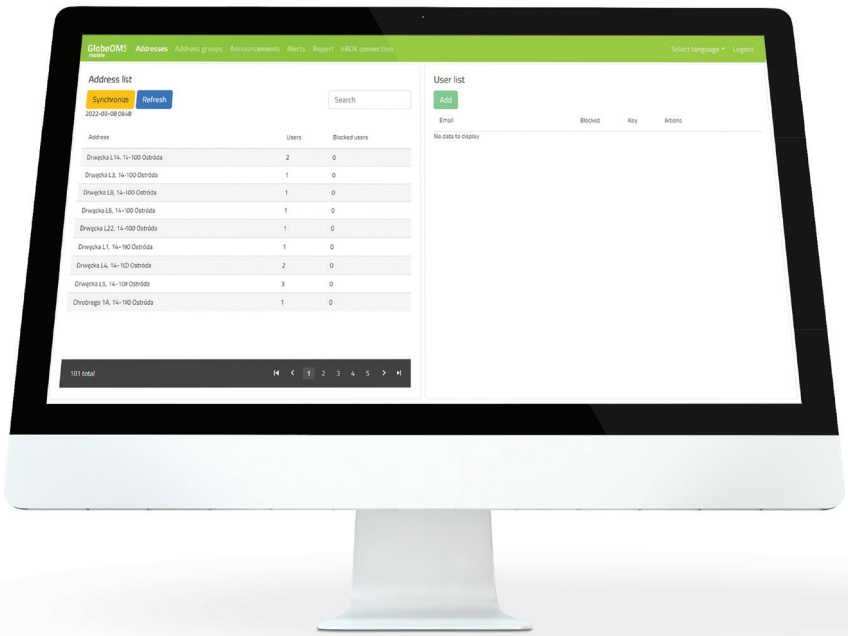
Eliminate misreadings due to typing mistakes

Automatic synchronization between the collector's mobile device and the GlobeOMS system

Reading using the collector method with the RUTO telemetry head enables quick and easy reading of meters equipped with an overlay or a Wireless M-Bus OMS radio module. Radio reading takes much less time, and the digital data exchange method allows for the elimination of manual input errors.

The collectors are equipped with radio heads that listen to and receive radio frames from measuring devices. Using Bluetooth communication, the head transmits data to the GlobeOMS Routify application installed on an Android mobile device. The application assigns the measuring device number to the information taken from the meter, then the meter reading is saved in the phone's memory. The data collection routes can be completed on foot (walk-by system) and by car (drive-by system). Measurement data collected on a mobile device is sent to the GlobeOMS system, where the readings are analyzed and shared.

DATA SHARING



The Supplier can may make selected metering data available to the Customers for more efficient management of utilities. By making readings available, end users can compare current and historical consumption of utilities at any given period of time. This creates favourable conditions for more efficient use of utilities and generates savings for the individual household. Alarms can also be made available. When the Supplier provides the Customer with the statuses of selected alarms, information on undesired events (e.g. leakage) detected by GlobeOMS is sent to them simultaneously. The Customer is closer to a defect, so he can respond much faster. Data sharing offers the additional advantage of the Electronic Bulletin Board. The Board gives us the possibility to send announcements and documents to the Customers, e.g. billing forms.

BENEFITS

Tightening of cooperation between the Supplier and the Customer

Greater energy consumption awareness among Customers

Current information on events and shorter response time reducing material losses

Electronic distribution of information and documents

Easy and quick sharing of readings

Supporting effective use of utilities is also about preserving, protecting and improving the quality of the environment.

GlobeOMS MOBILE

MOBILE UTILITIES CONSUMPTION CONTROL

GlobeOMS Mobile is an application in which readings from measuring devices, e.g. water meters, heat meters or heat allocators, are made available. The data presented in the form of charts gives a very clear overview of heat and water consumption. The application also notifies you about adverse events, such as leakages or breakdowns.

Current measurement data

Comparison with historical readings

Alarms in the event of leakage and flooding

Electronic notice board

APP FEATURES

- Friendly interface
- Graphical presentation of data
- Ongoing monitoring of consumption
- Compare consumption over time
- Failure notifications
- Announcements, e.g. about renovation works

BENEFITS

- 24/7 access to readings
- Graphical charts of heat and water consumption
- Fault finding
- Quick response to spills or leakages
- Motivation for saving
- Convenience for landlords

READOUT SERVICE FOR HOUSING COOPERATIVES

COST SETTLEMENT

› Self-settlement of consumption costs
› An option of monthly settlements
› Avoiding overpayments and underpayments
› No cost of interim readings

SUPERVISION

› Detection of missing readings and equipment failures
› Fast response and troubleshooting
› Immediate identification of the problem
› Support for the technical services of the building

BALANCING

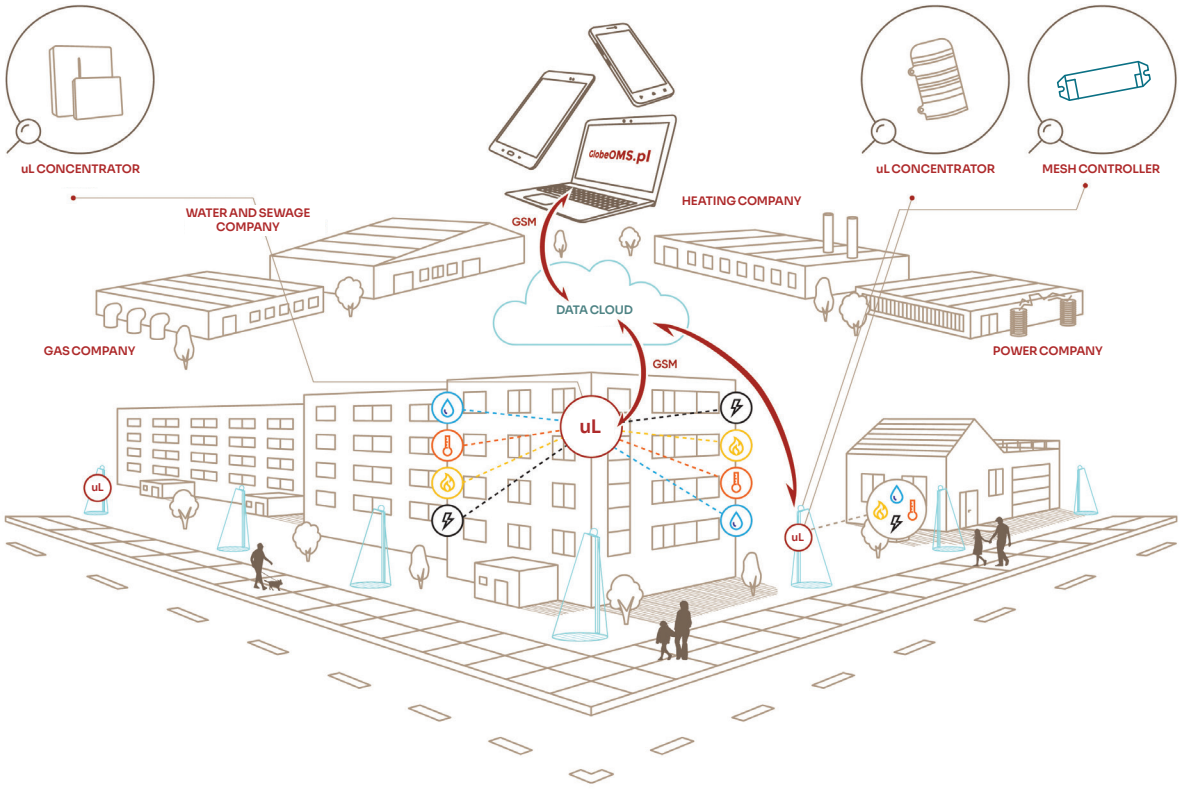
› Reduction of heat or water loss
› Control of contracted power consumption
› Determination of costs according to actual consumption
› Automatic data exchange with billing systems

DATA SHARING

› Engaging tenants in consumption control
› Reduction of complaints
› Raising tenants' energy awareness
› Electronic Bulletin Board

READOUTS

› Synchronised readouts of all meters every hour
› No need for access to premises and common areas
› Guaranteed readout correctness
› 24/7 access to online data



COMMUNICATION DEVICES – HEAT

Telemetry exchanges

The main function of the Hakar PLS and Hakar MMN telemetry exchanges is to read measuring devices connected to communication ports and transfer this data to the telemetry server.

Hakar PLS

Hakar PLS consists of an electronic module, housing, SIM card and power supply.

The device allows the connection of:

- two devices with UART interface (e.g. heat meters with adapters)
- two pulse-generating devices
- devices with 1WIRE interface
- devices with MBUS support
- devices with RS485 or RS422 interface
- devices with RS232 interface
- relay-controlled devices
- devices with an analog interface (e.g. temperature sensors, pressure sensors)
- GSM antennas (SMA connector)

Hakar MMN

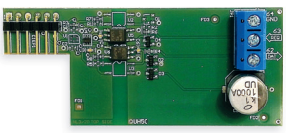
Hakar MMN consists of an electronic module, battery or power supply, housing with cable glands or cable glands and an external or internal GSM antenna.

The device allows the connection of:

- two devices with UART interface (e.g. heat meters with adapters)
- two pulse-generating devices
- temperature sensor type PT50
- GSM antennas (MMCX connector)

Communication: GSM (GPRS / NB-IoT / Cat.M1) / LoRa / wM-Bus / Ethernet

ADAPTERS FOR HEAT METERS



Landis+Gyr T550

Kamstrup Multical C66/601/602

Kamstrup Multical 401/402

Kamstrup Multical 403/603

TELEMETRIC CONTROL PANELS – TECHNICAL DETAILS

Hakar PLS – ports

- USB service port
- 2x UART interface port (two-way communication for, among others, communication with heat meters)
- 1Wire bus port (support for many types of sensors)
- MBUS bus port (two-way communication, support for, among others, weather regulators, heat meters)
- RS232, RS422, RS485 interface port (two-way communication, support for, among others, weather regulators, electricity meters, pre-insulated network detectors)
- relay output port
- 2x port dedicated to devices with impulse interface (support for, among others, impulse water meters)
- dedicated port for devices with an analog interface (4-20mA current sensors, 0-10V voltage sensors, PT100, PT500, PT1000 sensors)
- +15V power supply port for sensors
- +5V power supply port for sensors

Hakar MMN – ports

- port dedicated to PT500 temperature transmitters
- 2 x ports dedicated to devices with impulse interface (support for, among others, impulse water meters)
- 2 x ports dedicated to devices with UART interface (support for, among others, heat meters)
- UART diagnostic port

SUPPORTED PERIPHERALS

	Hakar PLS	Hakar MMN
Kamstrup Multical heat meters (66C, 40x, 60x)	yes	yes
Landis+Gyr T550 (UH50), T450 (UH40) heat meters	yes	yes
Danfoss ECL controller (RS485 MODBUS)	yes	yes (with an adapter)
Siemens RVD series 100 controller	yes	yes (with an adapter)
Siemens RVD series 200 controller	yes	no
Samson Trovis 55XX controller (RS485 MODBUS)	yes	yes (with an adapter)
Samson Trovis 5179 controller (RS485 MODBUS)	yes	yes (with an adapter)
temperature converter	PT100/PT500/PT1000	PT500
voltage pressure transducer	yes	yes (with an adapter)
current pressure transducer	yes	no
digital sensors	yes	yes (via pulse ports)
Wilo-Stratos MAXO pumps (RS485 MODBUS)	yes	yes
pre-insulated network detectors DASL RAT-2 (RS485 MODBUS)	yes	yes
LEVR LPS2MB pre-insulated network detectors	yes	yes

TECHNICAL DATA

	Hakar PLS	Hakar MMN
Antenna	external with SMA connector	external/internal with MMCX connector
Power supply	230V AC using a 12-15V DC power supply (min. 30W)	13Ah or 6Ah 230V AC battery (using a dedicated 3.3V DC power supply)
Working temperature	-15°C ÷ 60°C	-15°C ÷ 60°C
Data transmission	GSM (GPRS/NB-IoT/Cat.M1) LoRa / wM-Bus Ethernet	GSM (GPRS/NB-IoT/Cat.M1) LoRa / wM-Bus Ethernet
SIM card	SIM micro (removable SIM card)	SIM micro (removable SIM card)
Air-tightness class (variants)	none (DIN rail housing for mounting in a cabinet/electrical box)	IP51 or IP68

WMBUS READING (TRANSMISSION DEVICES)

Stationary system

uL 5.0 CONCENTRATOR

The uL 5.0 Concentrator enables radio reception of readings from meters such as water meters, heat meters, gas meters, electricity meters, and data transmission to a telemetric cloud computing via the GSM network (GPRS / Cat.M1 / NB-IoT). The distinguishing feature of the uL 5.0 Concentrator is its real-time operation (reception and transmission of measurement data). In addition, the uL 5.0 Concentrator works with all devices with a frequency of 868 MHz, compliant with the Wireless M-Bus OMS protocol – regardless of the manufacturer and type of the supported medium (water, heat, electricity, gas).

muL 5.0 REPEATER

The muL 5.0 repeater is a device that works with uL 5.0 to increase the range of the radio signal between the transmitting transmitters (end devices) and the concentrator.

WMBUS SENSORS

Wireless sensors providing information from the environment about temperature, humidity, air quality and detecting undesirable situations such as smoke, flooding or burglary. Thanks to the battery power supply, it is extremely easy to install and use.

The devices, using the radio standard WMBus, communicate with a concentrator or a retransmitter in order to transmit data about readings and alarms to the GlobeOMS system. This solution combines remote reading from devices such as water and heat meters with security monitoring, e.g. in multi-family housing.

- temperature sensor
- air quality sensor
- opening sensor
- flood sensor
- smoke sensor

HEAT AND WATER METERS

HEAT METERS

The ULTRAHEAT T230 is a modern ultrasonic meter for heat, cooling or combi (heat and cooling), with a flow transducer made of glass fibre-reinforced composite, which has been specially designed and optimized for the requirements of construction technology and plastic installations.

- temperature sensor installed in the housing
- temperature sensor 5.2 x 45 mm, 1.5 m cable
- calculator detachable from the flow meter
- PC+GF composite converter, T_{max}=105°C

The ULTRAHEAT T330 is a compact and robust ultrasonic meter for heat, cooling or combi (heat and cooling) that meets all the requirements in residential construction.

- temperature sensor installed in the housing
- temperature sensor 5.2 x 45 mm, 1.5 m cable
- calculator detachable from the flow meter
- bronze transducer T_{max}=105°C (extra T_{max}=130°C)

We also offer other types and diameters of heat meters. Communication: GSM (GPRS / NB-IoT / Cat.M1) / LoRa / wM-Bus.

WARIDA KT-M WATER METERS

- Water meters compliant with Directive 2014/32/EU
- Metrological class according to MID: R-100-160H, R-50V
- Cold water (500C), Warm water (990C)
- Eight-position counter for visual reading, available regardless of the installed module
- Polish National Institute of Hygiene (PZH) hygienic certificate
- Brass housing
- Working pressure 1.6MPa
- Hermetically sealed counter, IP 68 class, resistant to contamination and fogging
- The serial number is permanently marked on the counter's disc, resistant to water hammer
- Resistant to external magnetic field
- Double-sided counter bearing on technical stones
- The water meter is adapted to the installation of the communication module.

We also offer other types and diameters of water meters. Communication: GSM (GPRS / NB-IoT / Cat.M1) / LoRa / wM-Bus.

COMMUNICATION DEVICES – WATER

Application: water supply installations

HAKAR MMN

WARIDA WGA GSM
WARIDA WGA wM-Bus/LoRa

WARIDA APA GSM
WARIDA APA wM-Bus / LoRa

DESCRIPTION OF OPERATION

The Warida WGA and Warida APA shields, as well as the Hakar MMN exchange, are telemetry modules that communicate with the server using GSM technology (GRPS / Cat.M1 / NB-IoT) or LoRa, wM-Bus (in Hakar MMN also via cable Internet connection). They are a communication medium for water meters used in water supply systems. The modules are easy to install without breaking the water meter verification seal. The devices have a counting module, thanks to which they continuously record the flow indicated by the water meter, recording the current volume every hour. The devices also generate alarms of sudden water loss and prolonged leakage. The encoded information about the measurement readings stored in the device's memory is sent to the telemetry cloud and then made available in the GlobeOMS system and in the GlobeOMS Mobile application. The system constantly supervises the correct consumption of utilities and alerts you to any irregularities in the operation of the metered water supply network.

TECHNICAL DATA

	HAKAR MMN	WGA GSM	WGA wM-Bus/LoRa	APA GSM	APA wM-Bus/LoRa
Power supply	13A (10+1 years) or 6Ah (5+1 years) battery 230V AC	(10+1 years) 13Ah or 6Ah (5+1 years) battery	1.6Ah (5+1 years) battery	13Ah (10+1 years) or 6Ah (5+1 years) battery	3Ah (5+1 years) or 6Ah (10+1 years) battery
Communication	GSM (GPRS / Cat.M1/ NB-IoT) LoRa / wM-Bus Ethernet	GSM (GPRS / Cat.M1 / NB-IoT)	wM-Bus LoRa	GSM (GPRS / Cat.M1 / NB-IoT)	wM-Bus LoRa
Air-tightness class	IP51 IP68	IP51 IP68	IP51 IP68	IP51 IP68	IP51 IP68
Working temperature	0°C ÷ 60°C	0°C ÷ 60°C	0°C ÷ 60°C	0°C ÷ 60°C	0°C ÷ 60°C
Antenna	Int./extern. MMCX	Int./extern. MMCX	Built-in	Int./extern. MMCX	Int./extern. MMCX
Communication with the water meter	wired impulse interface (2-5 wired)	Inductive	Inductive	Inductive	Inductive

SUPPORTED DEVICES

ENERGY METERS

Reading of single and three-phase electricity meters is carried out with the use of Hakar PLS and Hakar MMN telemetry exchanges, via the GSM network (GPRS/NarrowBand/Cat.M1). All data is available in the GlobeOMS system and in the GlobeOMS Mobile application, which can be made available to end users. The GlobeOMS system provides access to real and historical data, active monitoring of all parameters and reports generation. Thanks to integration with Business Intelligence and dedicated systems, it is possible to accurately analyze the collected data in order to optimize costs.

Main features:

- real-time monitoring of all meter parameters (the ability to define the communication interval between the telemetry center, the meter and Globe OMS)
- access to data in the GlobeOMS system along with the analysis and active monitoring of parameters
- ongoing supervision and alerting (email, text messages, PUSH)
- automatic sending of measurement results

PRESSURE TRANSDUCERS

Monitoring of relative pressure measuring transducers in liquids and gases in the range of 1-60 bar, incl. by JUMO using dedicated HAKAR PLS and mHAKAR telemetry devices, both in 230V and battery versions. The data is presented in the GlobeOMS system on charts, dashboards and reports. Monitoring is used in heating nodes as well as in water supply networks. The use of battery power enables monitoring in locations without access to a permanent power source, e.g. fire hydrants, water meter wells.

Main features:

- online pressure monitoring in heating and water networks
- reading in the GlobeOMS system with water meters, flow meters etc.
- ongoing supervision and alerting (email, text messages, PUSH)
- automatic sending of measurement results

PRE-INSULATED NETWORK DETECTORS

Pre-insulated network detectors of companies such as e.g. LEVR and DASL constantly supervise the functioning of the heating network, and thanks to dedicated devices, data from the readout is sent via GSM communication to the GlobeOMS system. Online supervision enables alarming of failures, and online access to the system enables the current operation of the network.

Main features:

- monitoring of detector alarm states
- resistance reading from all channels
- support for impulse and resistance detectors
- reading of the leakage location in the network

CIRCULATION AND CIRCULATING PUMPS

We monitor the operation of circulation and circulating pumps from companies such as Wilo and Grundfos by using Hakar PLS and Hakar MMN devices and the GlobeOMS system. In the system, we read the operating parameters of the pump and enable remote change of the operation configuration. In GlobeOMS we present a pump operation diagram, which allows you to check the current state of the device.

Main features:

- presentation of the pump operation diagram
- control of pump operating parameters, incl. lifting height and operating mode
- monitoring of exceeded pump operating parameters

SHARING E-BOK DATA – PAYMENTS FOR INVOICES

The offered e-BOK and e-services functionalities include the following modules:

- document handling,
- administrator,
- content management (CMS),
- communication with the ePUAP platform,
- downloading data from Domain Systems,
- online payment and liability handling,
- public register.

Customers deciding to implement the e-BOK and e-services system have the option of implementing any e-service forms.

The most popular e-services:

- access to electronic invoices with on-line payment,
- access to the electronic notification and supervision system (network failure, monitoring of own meter, information about threats and events),
- application for the specification of technical conditions for connection to the heating network,
- application for the conclusion of a contract for the supply of utilities,
- access service to the current meter reading and historical billing states,
- application for total or partial cancellation of receivables, e.g. for the water supplied.

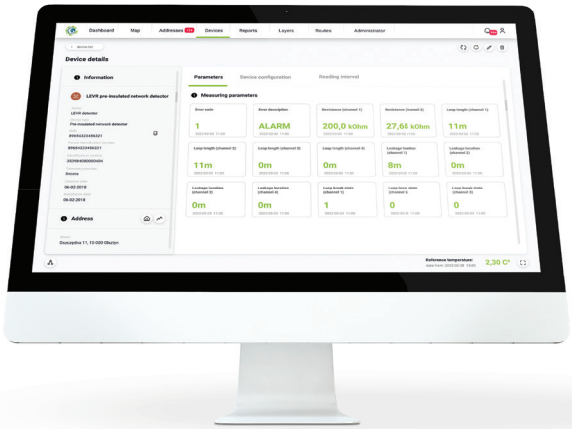
Among the functionalities related to access to data using e-BOK, you can also make payments for invoices or provide the meter reading in the GlobeOMS Mobile application for any number of people.

INTEGRATION WITH BILLING SYSTEMS

One of the many applications of the GlobeOMS system is sharing readout data collected in the telemetry cloud for billing purposes. Integration can be bi-directional – the GlobeOMS system will provide the readout data to the billing system, or it will be supplied with accounting data from the settlement system to complete the information in the GlobeOMS system. We support integration with the most popular billing systems on the market, including:

- Unisoft
- GW-Max
- Kom-Media
- Logica
- QNET

GlobeOMS LITE



To ensure excellent user experience, we have developed an optimized version of the system. GlobeOMS Lite has been enriched with a billing module, which, based on the collected measurements, allows you to analyze the data in terms of costs, generate detailed summaries of a selected element of the hierarchy (building, premises or measuring point) and compare them to the same historical period. The graphic interface has been refreshed and adapted to the latest trends. We ensured it is simple, intuitive and properly displays vital information provided by the system. We also see the potential in the collected data, which is why GlobeOMS Lite includes a tool for its analysis – the reports and dashboards module, which offers a wide range of customization options. It allows us to present the data initially analyzed by us in the form chosen by the user.

OTHER FUNCTIONALITIES

- intuitive map with a dynamic list of observed objects
- supervision function with the ability to define your own rules
- remote device control
- records of buildings, premises, measuring points and devices
- recipient file
- automatic generation of water and heat settlements
- billing estimates for water and heat losses with various algorithms
- set up of fixed billing fees
- reading, balance, record and billing reports
- consumption and billing reports
- dashboards on events, formulas and readout data
- dashboards for the sale of media and their billing
- automatic generation and sending of reports according to the schedule

LIGHTING TELEMETRY

On-line lighting control is used in common areas of housing estates, parks, city squares and parking lots, as well as in industrial facilities. The system and hardware components contribute to a comprehensive modernization solution. It makes it possible to connect virtually any lighting fixture that supports the DALI protocol and connect it to a reliable and intuitive outdoor lighting management interface.

Street lamps control and supervision

Telemetry of the work environment of lighting fixtures

Mesh installation monitoring

FEATURES

- Works with DALI type lighting fixtures – does not require dedicated NEMA/ZHAGA connectors
- Freedom in grouping lighting fixtures and creating work schedules
- No wiring and easy installation (Bluetooth Mesh communication with Casambi modules)
- Intuitive GlobeOMS interface
- Possibility to integrate other measurement systems and sensors
- Safe and reliable network (elimination of critical single points of failure)

BENEFITS

- Automated, remote infrastructure management system
- Additional energy savings when modernizing lighting
- Possibility of coordinating infrastructure maintenance services
- Quick response to failures
- Reduction of operating costs
- Increased sense of security
- Adaptation of lighting to the needs of the local community
- Monitoring of the working environment of lighting fixtures in industrial applications

MODULES / FUNCTIONALITIES

Functionality	GlobeOMS Lite	GlobeOMS Pro
Map	✓	✓
Dashboards and reports	✓	✓
Equipment inventory	✓	✓
Records of buildings and premises	✓	✓
Supervision, events and formulas	✓	✓
Media consumption billing	✓	✓
Water and heat losses billing	✓	✓
Remote device control	✓	✓
Inspection system	✓	✓
Node diagrams		✓
GIS layers		✓
Areas – distribution of the parameter on the map		✓
Group control		✓
Consumption balancing		✓
Replication of telemetry data		✓

SAFETY CERTIFICATES

ISO/IEC 27018:2019

Protection of personal data in a computing cloud related to the remote reading service of measuring devices.

ISO/IEC 27001:2013

Information security management in the field of comprehensive remote reading of measurement devices based on cloud computing resources.

WE COOPERATE WITH

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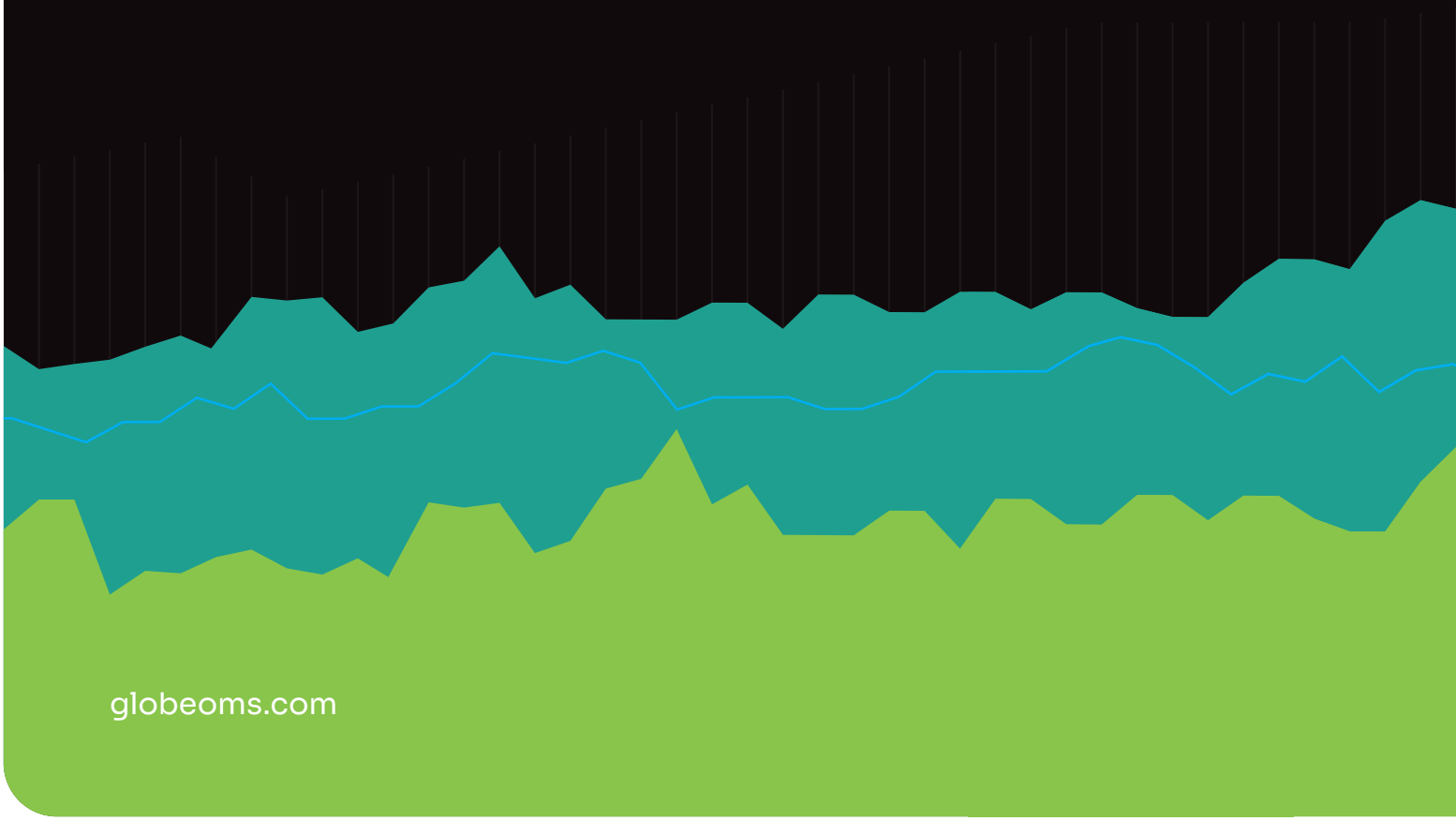

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