

inventia[®]

Innovative **IoT** and **GPS/GNSS** technologies in remote monitoring, supervision, diagnostics, control and location solutions

Hannover Messe 2022



20 of
YEARS **inventia**

on the wireless technology market

**Professional telemetry and location modules
sold to 65 countries in the world**

IoT solutions for:

- ▶ control and management in energy sector
- ▶ monitoring of heat and professional power industry
- ▶ management in water and sewage sector
- ▶ environmental protection and smart irrigation systems
- ▶ monitoring of public transport
- ▶ cathodic protection

inventia



MODULAR TELEMETRY CONTROLLERS

Linux-based wireless router and PLC in one housing. Possible extension with external expanders
MTX-2060, MEX-B16, MEX-UPS and others

COMMUNICATION GATES

Linux-based wireless module with Ethernet port
MTX-2050 v2

LOCATION MODULES

GPRS/GPS location devices for monitoring vehicles, objects, and wild animals living at large
ML-231, ML-941



SPECIALIZED MODULES

Modules for cathodic protection and alarm communication in lifts
MT-651, MT-652, MT-512



IoT MODULES

Distributed measurement network solutions (sensors and gateways)
IoT-RG-01, IoT-RTH-01, IoT-RG-01, IoT-RG-02



TELEMETRY IN THE FIELD, PARKS AND GARDENS

AGREUS® system – IIoT solution for gardening and agricultural practice
WellGreen® – a system for precise irrigation with a non-pressurized tank
Green Walls – a remote system for watering plants in the offices and apartments, planted in the special cascading pots



DATAPORTAL SCADA SYSTEM

Visualization system working in a safe cloud computing environment. Professional and economical alternative to standard SCADA systems



DATAPORTAL

inVentia
PORTFOLIO



BATTERY MODULES

Battery-powered, energy-saving modules with waterproof housing
MT-051, MT-713 v3



ECONOMY MODULES

Monitoring and control modules without programmable logic
MT-025, MT-331



COMPACT MODULES

Monitoring and control modules, with programmable PLC logic
MT-151 HMI v2, MT-151 LED v2, MT-156 HMI



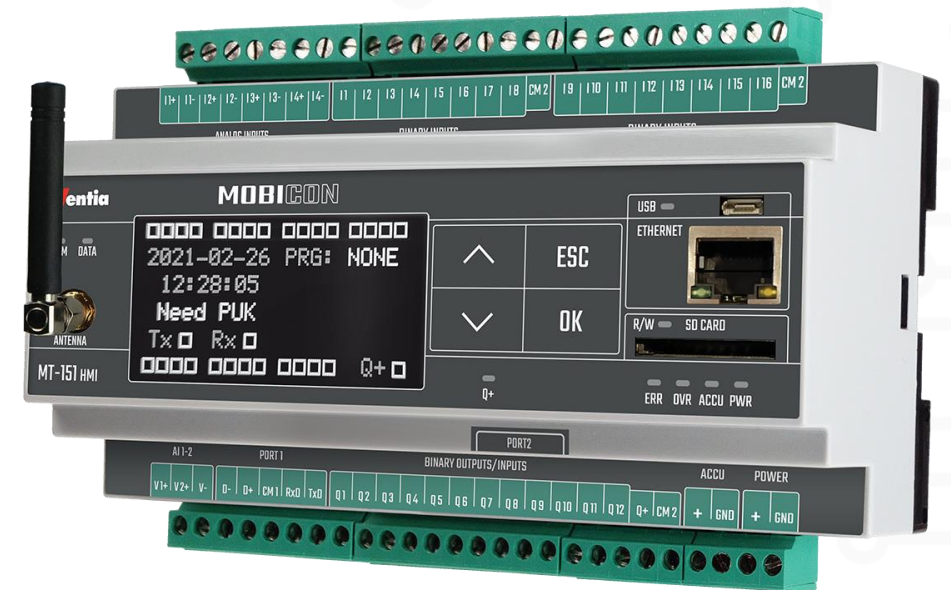


SMART CITY

SMART CITY

Multifunction modules

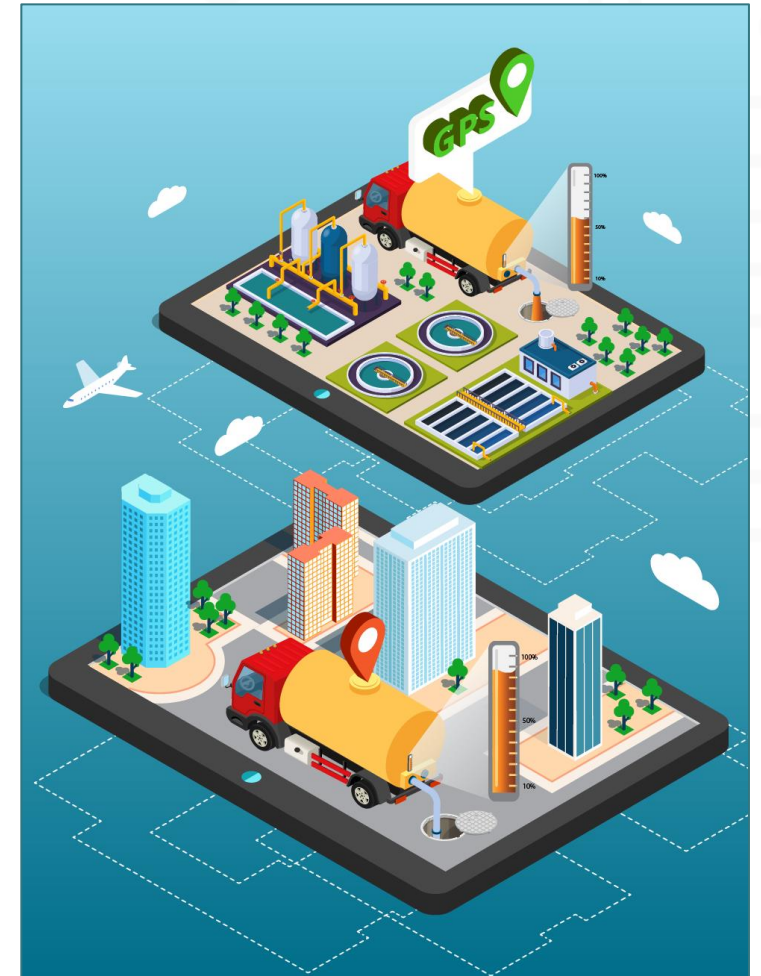
- ▶ Monitoring and alarming of temperature & humidity in rooms
- ▶ Monitoring of malt and salt storage silos, and tanks [LINK](#)
- ▶ Monitoring of pumping stations with the implemented algorithm of alternate pump operation [LINK](#)
- ▶ Control of water treatment and hydrophore stations [LINK](#)
- ▶ Remote monitoring of water filtration installations [LINK](#)
- ▶ Predictive supervision system in the power industry [LINK](#)
- ▶ Monitoring of groundwater and retention reservoirs in flood prevention systems
- ▶ Lighthouse control systems [LINK](#)
- ▶ Aggregate production and extraction. Monitoring of production process parameters



SMART CITY

Location modules for public transportation

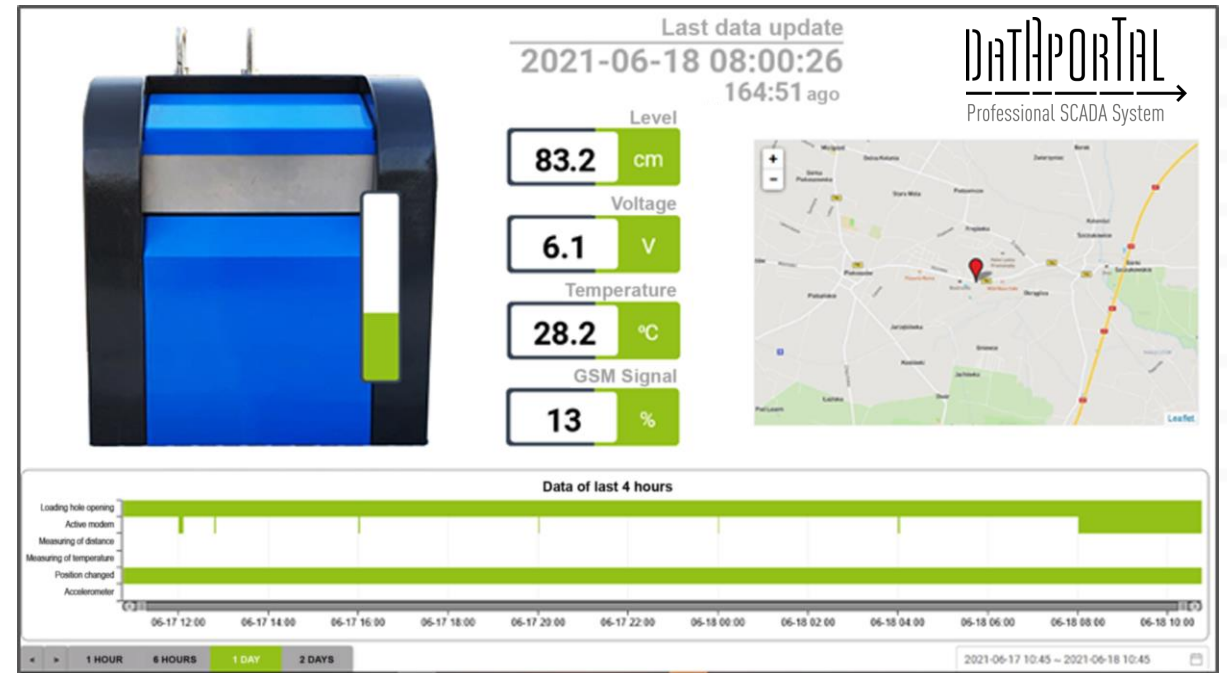
- ▶ Data transmission and SMS notifications
- ▶ Integral GPS receiver for highest sensitivity
- ▶ Accelerometer for motion detection
- ▶ Detection of switching the ignition on/cut-off, activation of the alarm, measurement of the fuel level
- ▶ Monitored voltage of the power inputs
- ▶ Communication with external devices – extended functionality
- ▶ Data logger function – maintaining data continuity while poor communication
- ▶ Possibility to connect the auxiliary power source



SMART CITY

Monitoring of parameters in waste containers

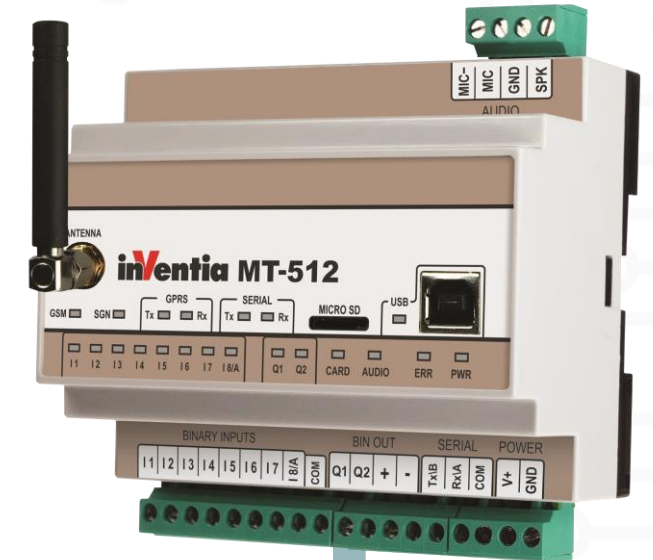
- ▶ Signal to open/close the loading hole
- ▶ Internal temperature measurements
- ▶ Measuring of space occupancy
- ▶ Alerting about changing the position (built-in accelerometer)
- ▶ Control of operating parameters (periodically, supply voltage, radio signal strength)



SMART CITY

Monitoring and alarm communication in passenger and goods elevators

- ▶ Remote monitoring of elevators operation with an emergency voice call
- ▶ Possibility of supplying the surveillance center with data from many facilities at the same time
- ▶ SMS notifications and data transmission in the 2G network
- ▶ Serial port allowing communication with other elevator equipment
- ▶ A set of inputs and outputs enabling the operation of buttons and alarm lamps in the elevator cabin
- ▶ Possibility of voice communication using an external speaking set



SMART CITY

Telemetry in parks and gardens

Agrotechnical devices to support and automate the management of urban green areas, parks, and vegetation in gardens

- ▶ Water consumption protection system for watering plants in pots
- ▶ Remote access to measurement data of plants areas
- ▶ Monitoring of soil moisture adapted to requirements of plantings
- ▶ Improvement of plants' living conditions in parks
- ▶ Reducing costs of transporting water for watering urban green areas
- ▶ Dedicated tanks with low water level alerting
- ▶ Automatic irrigation based on schedules and sensors data
- ▶ Remote control of plantings in parks – battery operation
- ▶ Control via smartphones or desktop computers



SMART CITY

Telemetry in orchards and under-cover crops

Wireless measurement and control in all types of agricultural, horticultural, forestry, and green areas

AGREUS® is a wireless Smart Village class system that enables the acquisition of measurement data facilitating agrotechnical decision-making as well as control over them. The system includes dedicated sensors and actuator modules as well as an application available on both desktop computers and mobile devices.

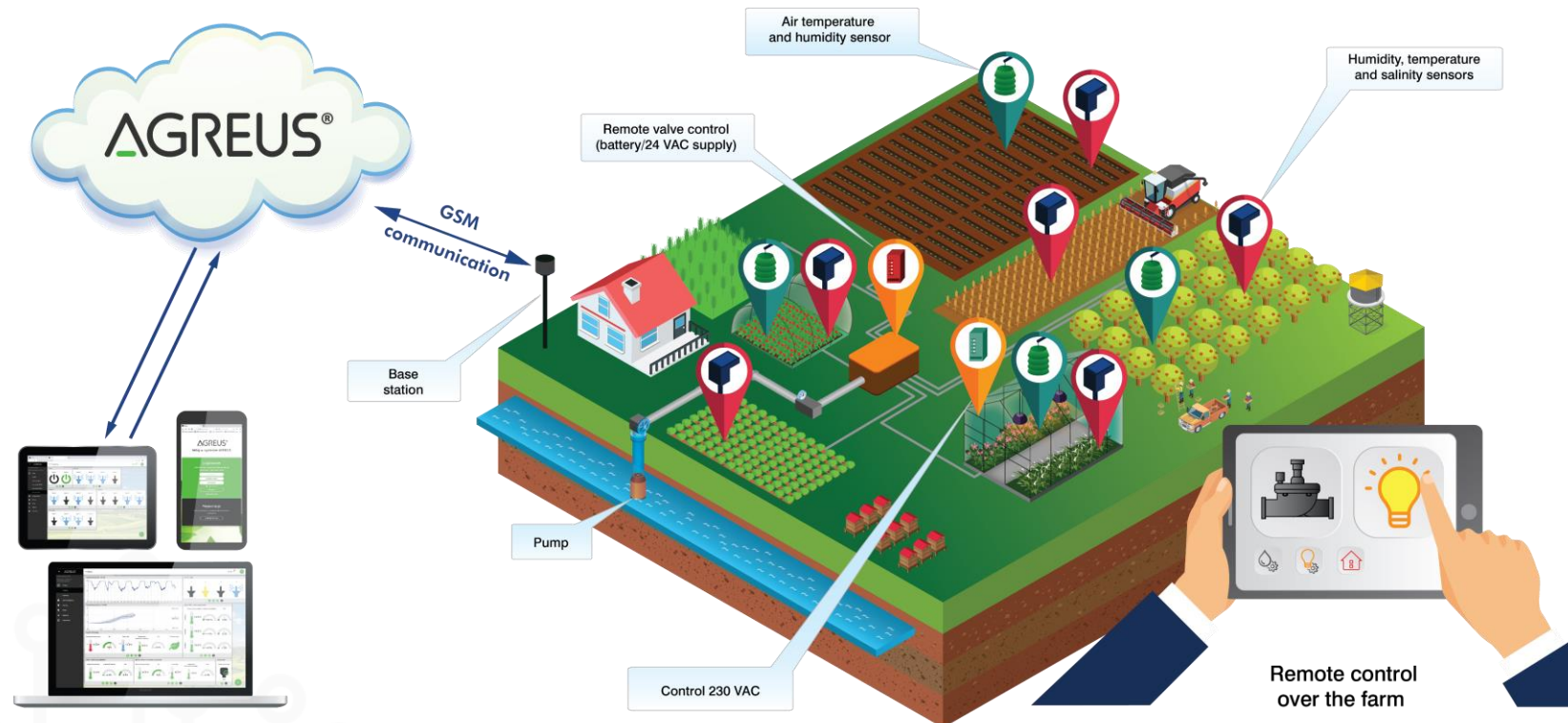
- ▶ Monitoring the climatic parameters of soil or organic substrates [LINK](#)
- ▶ Managing the irrigation of the field/orchard/garden from your mobile device [LINK](#)
- ▶ Measurement of air temperature and humidity in all types of agricultural, horticultural, and forest crops, green areas, orchards, and crops under cover [LINK](#)
- ▶ Remote management of the farm: irrigation, fertilization, control of blinds, opening of ventilation ducts, etc.
- ▶ Monitoring of parameters in apiaries situated on the roofs of modern housing estates
- ▶ Monitoring of gas concentration in farm buildings, piggeries, barns and henhouses
- ▶ Monitoring of concentration of nitrates, oxygenation and turbidity of groundwater



SMART CITY

Telemetry in orchards and under-cover crops

AGREUS® System operation diagram



Smart
Energy
Smart

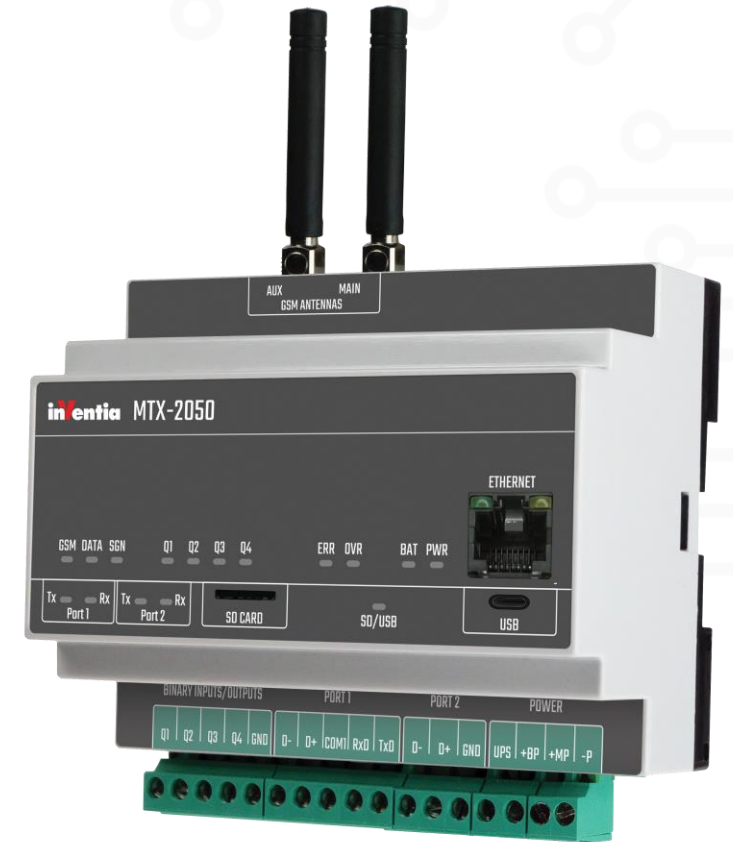


SMART METERING

SMART METERING

Linux-based communication gateway

- ▶ Monitoring of overhead transmission lines
- ▶ Communication gateway for various protocols and drivers where remote communication is required
- ▶ Control of various types of devices via embedded binary in/out
- ▶ Monitoring of facilities (switching on a receiver, verification of closing of the room door or telecommunication cabinet)
- ▶ Remote control of sensors using Bluetooth Low Energy technology
- ▶ Possibility to use a PLC program
- ▶ Communication between automation objects, not connected yet
- ▶ Communication for ATMs, computers in kiosks, monitoring of HVAC installations in facilities (sports halls, shops, large-format stores)



SMART METERING

Linux-based wireless router/PLC controller

- ▶ Communication with other devices in the facility: automation controllers, flow meters, electricity meters
- ▶ Dedicated for more complex installations, requiring a large number of local resources while supporting modern IT standards
- ▶ Possibility of increasing local resources, such as binary inputs/outputs, voltage, and current analog inputs
- ▶ Support for temperature/motion/lighting/access sensors on facility
- ▶ Testing the condition of fuse cartridges at power facilities
- ▶ Support for BLE sensors
- ▶ Possibility to use a PLC program



SMART METERING

Monitoring, alarm and control applications

- ▶ Allows monitoring, diagnosis and control of remote devices via text messages (SMS) or/and using data packet transmission over GSM provider network
- ▶ Communication via GSM provider network enables secure and reliable connection with higher-order applications (SCADA, database, cloud-based systems)
- ▶ Typical applications:
 - ▷ Facility monitoring
 - ▷ Alarm systems
 - ▷ Access control
 - ▷ Preventive diagnostics
 - ▷ Remote meter reading (ARM)
 - ▷ Remote control of various devices by SMS or GPRS: gates, pumps, heating, lighting, etc.

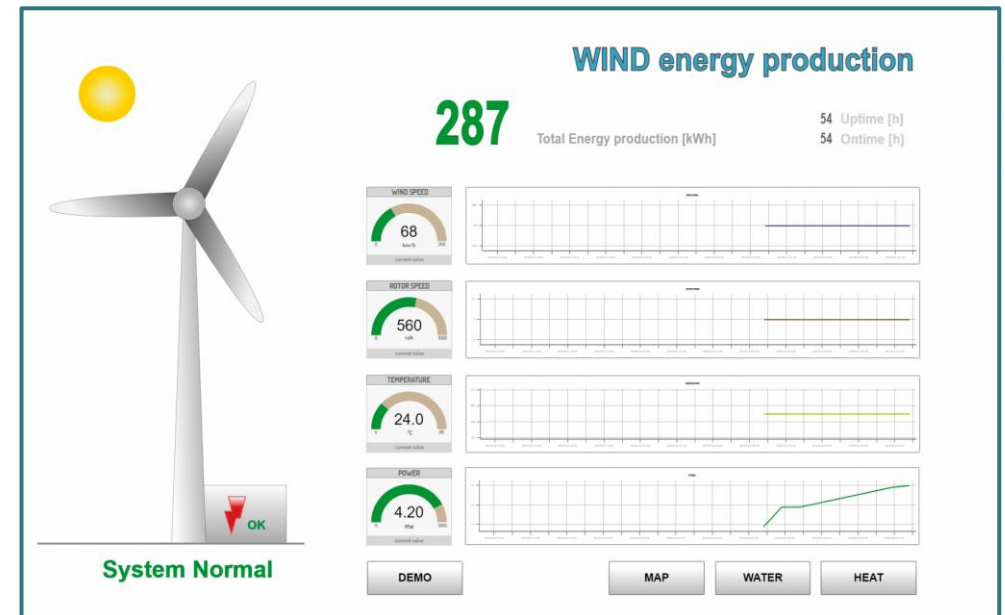


SMART METERING

Visualization system working in a safe cloud environment

- ▶ Monitoring of electricity generation in wind farms and photovoltaic installations
- ▶ Control and monitoring of hydrophore plant and sewage pumping stations
- ▶ Monitoring of leaks in urban district heating installations
- ▶ Control and monitoring of the operation of power generators in emergency power systems
- ▶ Monitoring of cathodic protection station parameters
- ▶ Graphical reports of water consumption based on the remote reading of water meters
- ▶ Monitoring of the level of surface and ground waters
- ▶ Predictive monitoring of electrical switchboards with SMS and e-mail notification system
- ▶ Liquid parameters monitoring system with notification of exceeding the permissible limits

DATA PORTAL →
Professional SCADA System



SMART METERING

Large-format visualization

- ▶ Modular DLP graphic walls of 50", 70", and 80" diagonals, with LED or laser RGB lighting system
- ▶ Graphic walls made of LCD panels with the unique UniSee technology
- ▶ Graphic walls in LED technology
- ▶ Laser DLP projectors of very high brightness, up to 75,000 ANSI lumens
- ▶ Innovative system of integrated OpSpace workstations
- ▶ Advanced graphics controllers
- ▶ ClickShare wireless presentation system





SMART GRID

SMART GRID

Battery-powered measuring and recording

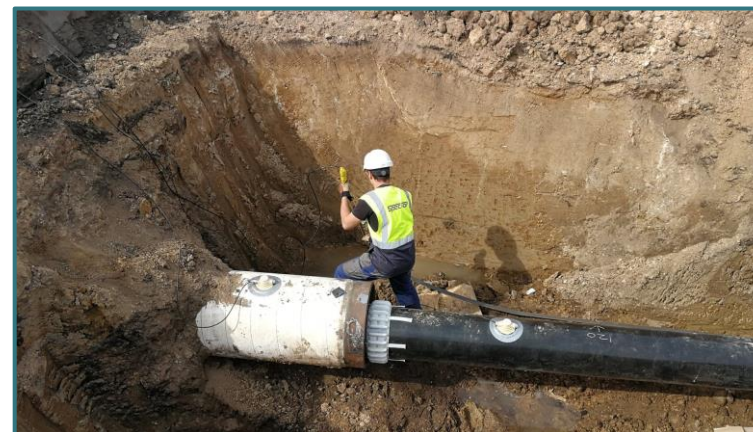
- ▶ Remote reading of media consumption
- ▶ Monitoring of water supply and heating networks
- ▶ Water leak detection
- ▶ Flood warning systems
- ▶ Level monitoring of rainwater tanks
- ▶ Remote monitoring of the level of rivers and water chambers
- ▶ Remote geological surveys
- ▶ Environmental monitoring systems
- ▶ Track monitoring systems
- ▶ Brine production monitoring
- ▶ Monitoring of flow and pressure in water networks



SMART GRID

Telemetry in cathodic protection

- ▶ Monitoring of gas reduction stations
- ▶ Control of the cathodic protection system
- ▶ Remote monitoring, and control of work in:
 - ▷ cathodic protection stationd
 - ▷ drainage stations
- ▶ Dedicated to pipelines, tanks, metal structures installed in the ground or submerged in water
- ▶ Mains powered and battery-operated versions are available
- ▶ Electrochemical active method of protection against corrosion



SMART GRID

Detection of leaks in pipelines

- ▶ Conductance methods for BRANDES and NORDIC pre-insulated pipes
- ▶ Acoustic methods
- ▶ Detection of flooding in heating chambers





We look forward to working with you

Krzysztof Borowy

Director of Strategy Development
Mobile/WhatsApp +48 602 205 402
e-mail: krzysztof.borowy@inventia.pl





We look forward to working with you

Bartłomiej Kosciesza

Technical Support Manager

Mobile/WhatsApp +48 600 477 410

e-mail: bartlomiej.kosciesza@inventia.pl





We look forward to working with you

Grzegorz Czyzewski

Technical Support Engineer

Mobile/WhatsApp +48 532 751 272

e-mail: grzegorz.czyzewski@inventia.pl



inventia[®] in Social Media

We encourage you to follow what's new in our offer:



Follow us on LinkedIn

and to visit our websites:

inventia.online

dataportal.online

www.agreus.pl

xway.online