INDUSTRIAL IOT FOR WATER UTILITIES

Water Metering Solution

End-to-end stack for remote metering, pressure monitoring and network control — sensors, controllers and the EIP cloud platform.

NB-IOT · GPRS | RS-485 · MODBUS | EIP PLATFORM

CONTROLLER
ValveLink

FIELD SENSOR
VADTel SENS

SMART METER
USM-25

WHY IT MATTERS

Water utilities lose 26% of treated water before it reaches the customer.

26%

Non-revenue water

across EU networks

EurEau 2024 — avg. for CEE region

40+yr

Average pipe age

in municipal networks

Many systems built in the 1970s–80s

€4.7B

EU smart water market

by 2028

CAGR 12.3% — MarketsAndMarkets

Aging infrastructure and manual meter reading

cost utilities millions in lost revenue, undetected

leaks, and regulatory non-compliance. Digitisation

is no longer optional — EU Water Framework Directive

mandates real-time monitoring by 2027.

VAD POSITION

- Slovak engineering company, Bratislava HQ
- End-to-end: own hardware + EIP cloud platform
- EU-certified (MID, CE, IP68), Made in EU
- NB-IoT / GPRS connectivity, 10+ year battery

THE PROBLEM

Utilities operate blind — losing water, revenue, and compliance.

Undetected Leaks

€9.1B /year

Lost across EU networks due to physical losses in aging distribution pipes. Most leaks run for months before discovery.

Manual Meter Reading

1–2× /year

Read frequency in most CEE utilities. Billing based on estimates, no anomaly detection, no real-time visibility.

Zero Network Insight

85%

Of EU municipal networks lack real-time pressure and flow monitoring. Decisions rely on complaints, not data.

EU Water Framework Directive and national regulators now mandate digital metering and real-time monitoring — utilities face fines and license risk by 2027.

DESIRED OUTCOME

From reactive firefighting to data-driven water management.

TODAY

- Manual reads 1–2× per year
- Leaks found weeks to months late
- No pressure / flow data at all
- Zero audit trail for regulators

→

WITH VAD

- Hourly telemetry, real billing
- Alerts within minutes, on map
- Live pressure + flow per DMA
- Full digital EU-compliant trail

≤15%	30 min	99.5%	100%
Target NRW reduction within 3 years	Leak detection response time	Meter read success rate	EU directive compliance ready

SOLUTION OVERVIEW

One integrated ecosystem — hardware, connectivity, cloud.

1

Smart Devices

SENS · WM-15 · ValveLink

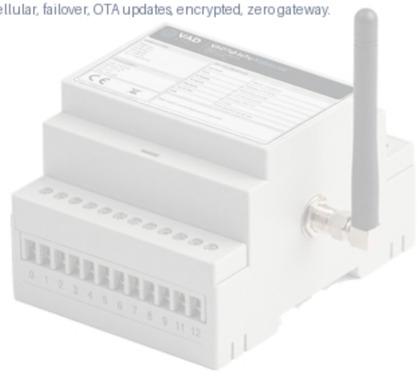
EU-certified IoT sensors for flow, pressure, leak detection. IP68, 10+ yr battery.

2

IoT Connectivity

NB-IoT · GPRS · LoRa

Carrier-grade cellular, failover, OTA updates, encrypted, zero gateway.



3

VAD IIoT Ecosystem

Analytics · Alerts · Shutoff

Dashboards, anomaly detection, valve control, full SCADA/billing API.

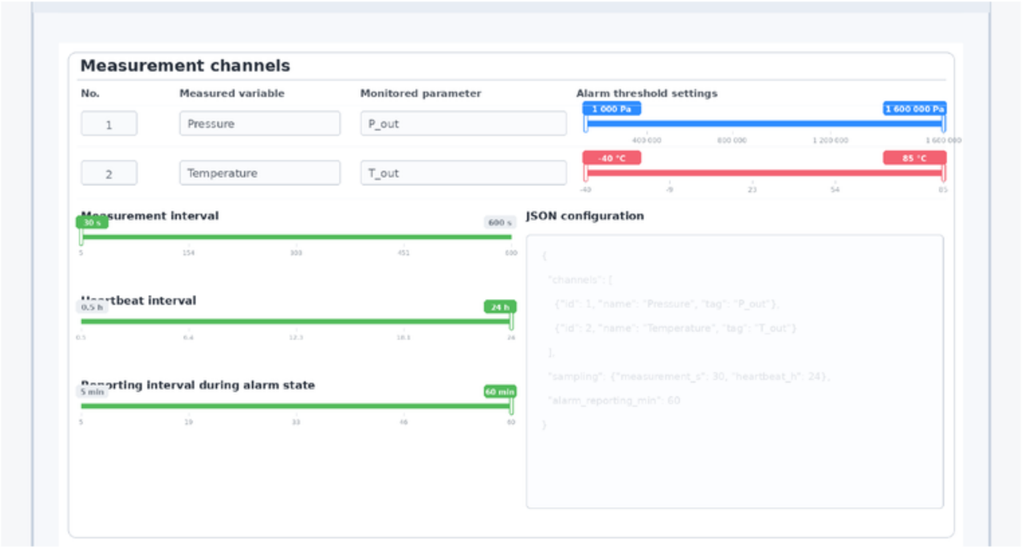
Sensor → **NB-IoT / GPRS** → **VAD IIoT** → **Dashboard & API**

End-to-end, single vendor — no integration headaches, one SLA

VADTel Sens

Smart cellular pressure & temperature sensor

Remote configuration interface



P + T
Pressure + temp.

IP65
AISI 316L steel

≤ 5 yr
LiPo battery

5–600 s
Meas. interval

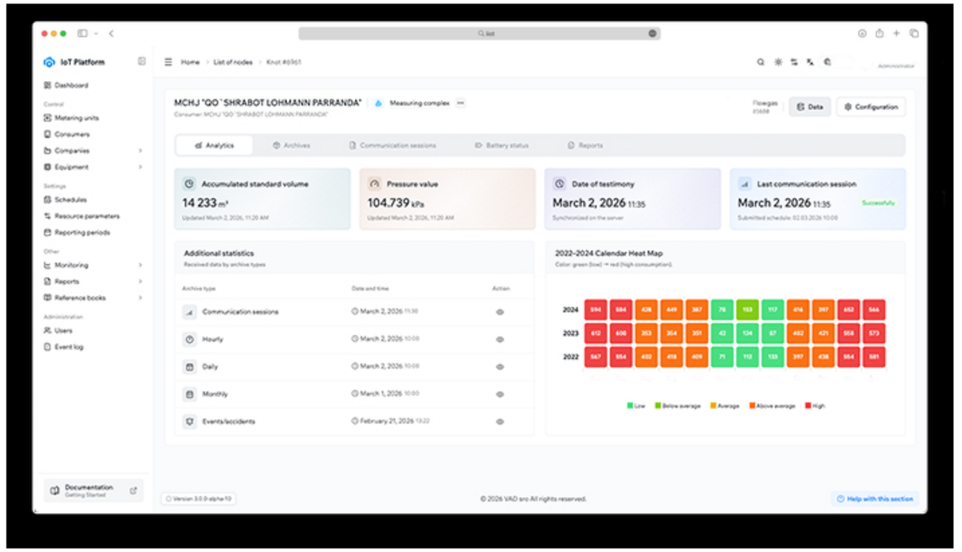
Applications: water supply · gas distribution · heat networks · boiler rooms

Connectivity: GSM / GPRS · NB-IoT — configurable alarm thresholds & event-driven reporting

VADTel Metr

Ultrasonic smart water meter

Metering analytics dashboard



DN 15
T50 · MAP16 bar

IP68
Submersible housing

3.0V DC
Long-life battery

MID
EN 14154 / ISO 4064

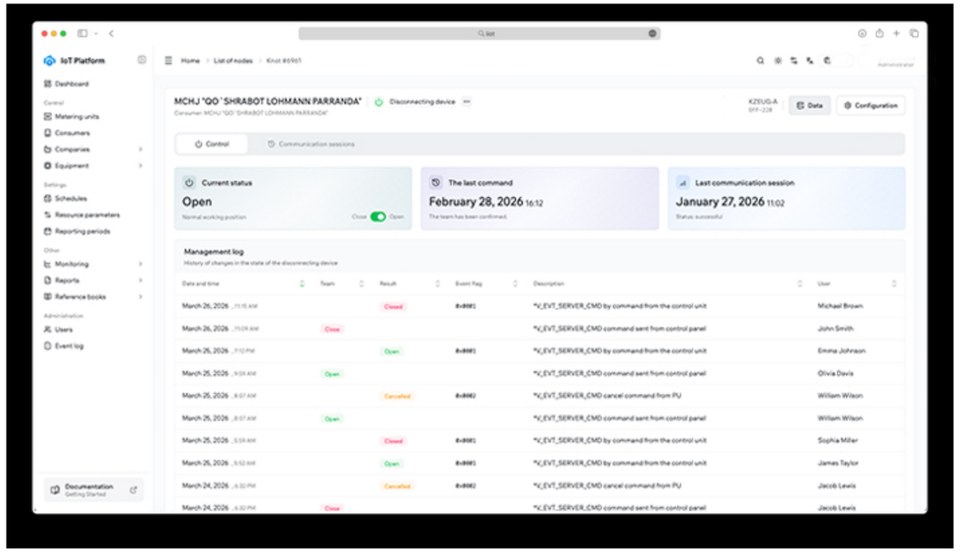
Application: residential & commercial water metering · Class 2 (E2) · Made in EU

Integration: VAD IIoT Ecosystem · real-time analytics · archive & session history

VADTel ValveLink

DIN-rail telemetry & valve-control unit

Remote valve control interface



12–24 V
DIN-rail · 15 W max

−40…+60°C
Cabinet installation

RS-485
Meters · correctors

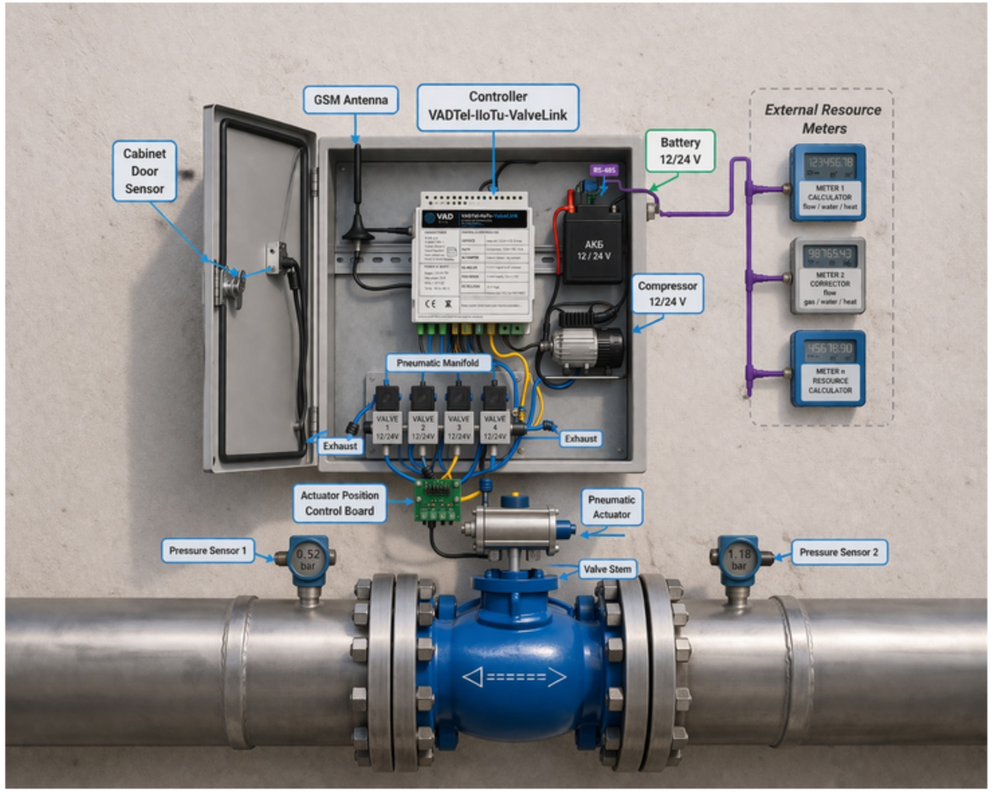
GPRS
NB-IoT cellular

Control: 4 outputs (5–10 A) · compressor & pneumatic manifold · tamper input

Scope: gas metering nodes · water distribution · district heating · valve stations

Metering Node Cabinet

Complete field-deployed valve & telemetry assembly



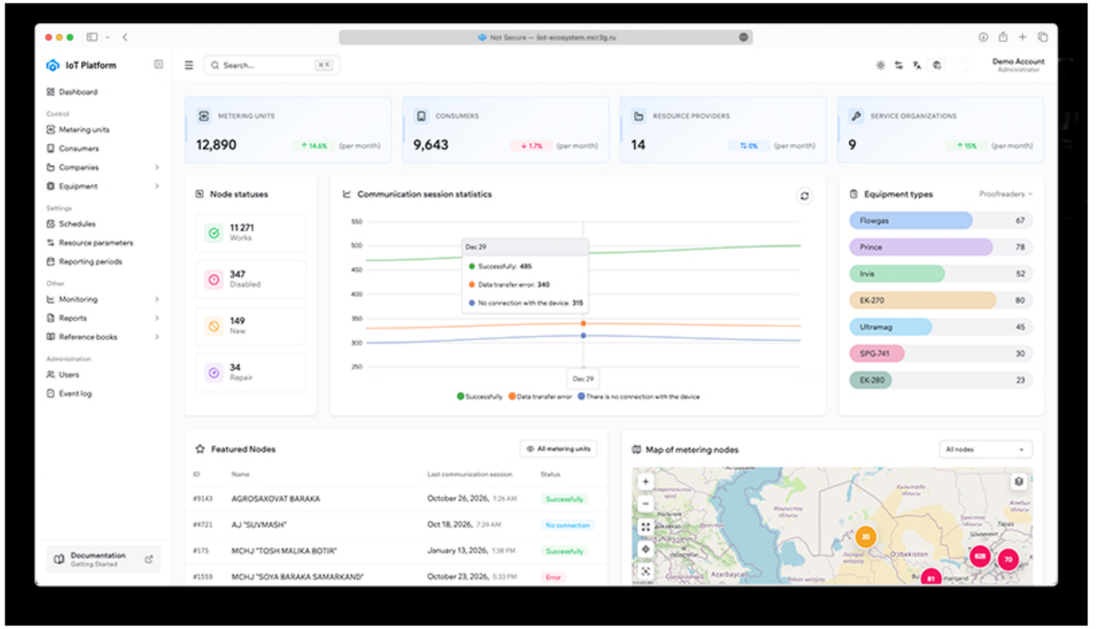
Cabinet components

- **ValveLink** controller
- **GSM antenna** cellular uplink
- **Battery** 12/24 V supply
- **Compressor** pneumatic drive
- **Manifold** solenoid valves
- **Position board** stem sensing
- **Pressure sensors** up/downstream
- **RS-485 meters** external devices

Deployment: gas nodes · water chambers · district-heating substations · remote valve stations

VAD IIoT Ecosystem

Centralized monitoring, control & analytics platform



Dashboard
Fleet status

Analytics
Trends & history

Control
Valve operations

Reports
Compliance data

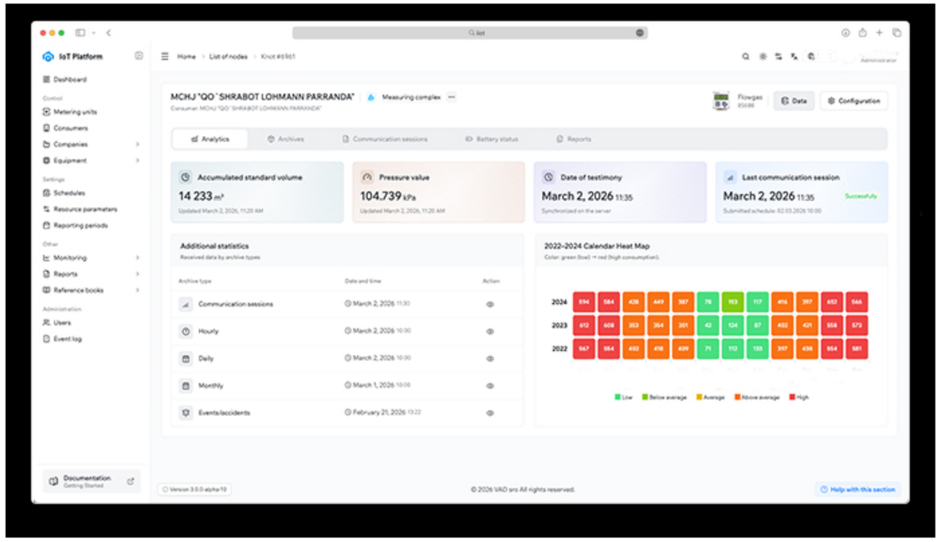
Scope: 12 890+ nodes · 9 640+ consumers · multi-tenant · role-based access

Features: node map · communication sessions · battery monitoring · equipment types

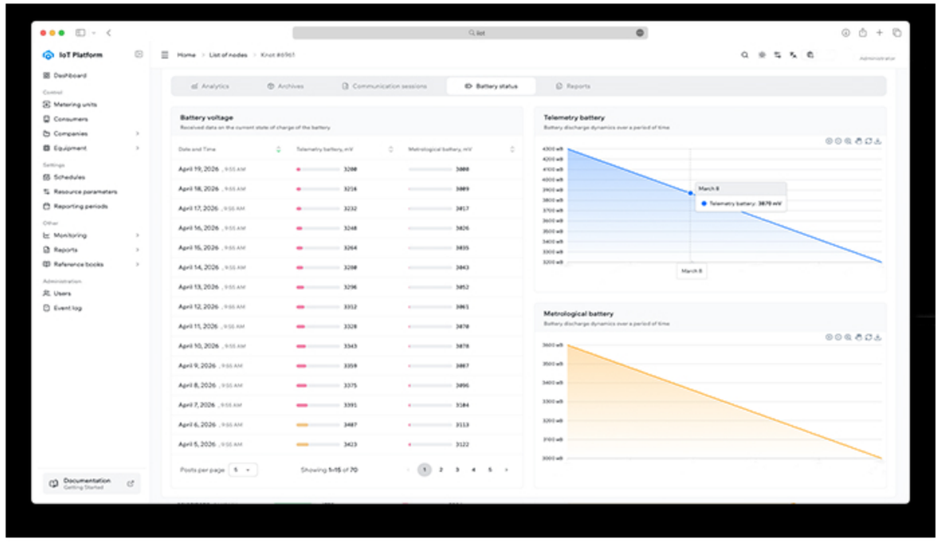
Analytics & Monitoring

Metering data analysis and device health tracking

Metering analytics



Battery monitoring



Readings
Values & heatmap

Sessions
Comm. statistics

Battery
Voltage & lifespan

Archives
Historical data

Data: calendar heatmap · session statistics · voltage trends · lifespan forecast

Alerts: low battery · missed sessions · abnormal readings · tamper detection

External Interfaces & SCADA

GTS monitoring, map visualization & live pressure data

GTS on the map

GTS pipeline scheme

Map view
Stations on map

Live data
Pressure & temp.

GTS scheme
Pipeline topology

History
Charts & archives

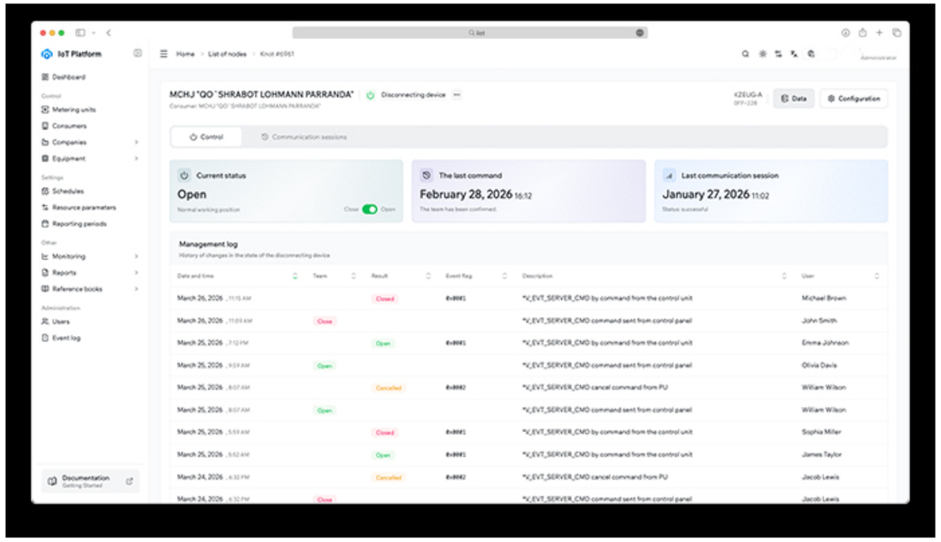
SCADA: OPC UA · Modbus TCP · REST API · MQTT broker

Export: CSV · JSON · XML · real-time streaming to third-party systems

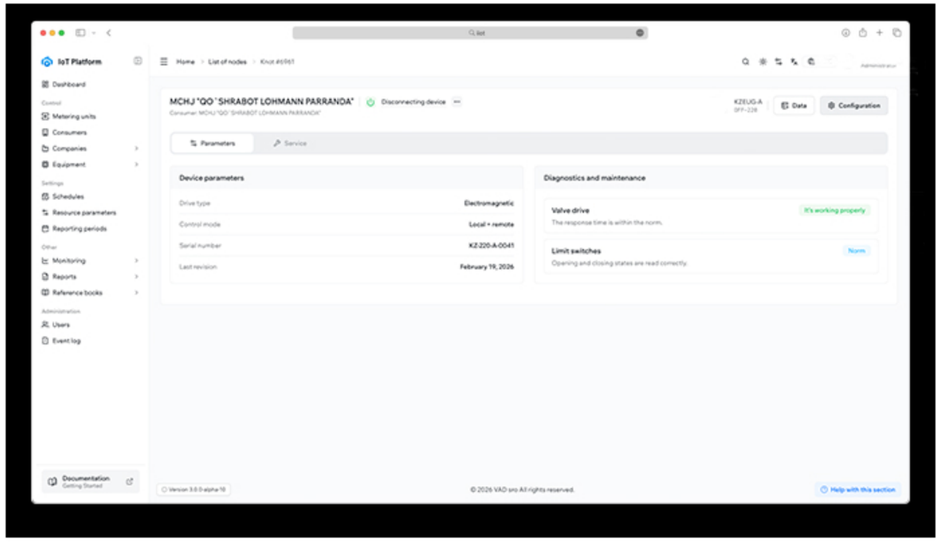
Remote Shutoff Control

Valve operations, diagnostics & maintenance tracking

Valve command history



Device diagnostics



Open / Close
Scheduled commands

Diagnostics
Drive & switch health

Audit trail
Full command log

Maintenance
Service history

Operations: remote open/close · scheduled shutoffs · emergency stop · position feedback

Safety: valve drive status · limit switch check · response time monitoring · tamper alerts

APPLICATIONS

Use Cases

Proven deployments across utility sectors

01 Gas metering

- Volume correctors
- Remote shutoff valves
- Cabinet telemetry
- Leak & tamper alerts

02 Water supply

- Ultrasonic meters
- Pressure monitoring
- Consumption analytics
- Loss detection

03 District heating

- Heat calculators
- Valve station control
- Substation telemetry
- Temperature tracking

04 Industrial

- Hydraulic systems
- Pneumatic networks
- Boiler room sensors
- Compressor control

Coverage: gas · water · heat · industrial — single platform for all utility sectors

COMPLIANCE

Standards & Compliance

EU certifications, metrology & industrial standards

CE
EU conformity
Product labeling per EU market

MID
Metrology directive
M24 · MID 1621 · fiscal approval

EN 14154
Water meter standard
ISO 4064 · Class 2 (E2)

IP65 / IP68
Ingress protection
SENS: IP65 · Metr: IP68

SELV
Extra-low voltage
Circuits < 30 V DC · OVC II

AISI 316L
Stainless steel
Corrosion-resistant · 304 alt.

Origin: Made in EU · VAD s.r.o. · Bratislava, Slovakia

Quality: EU DoC per product · WEEE compliance · product traceability

ADVANTAGES

Why VAD

Key differentiators of the VAD IIoT Ecosystem

01
Full-stack solution
Devices + platform + control in one ecosystem

02
EU manufactured
CE · MID · Made in Slovakia, EU

03
Multi-utility
Gas, water, heat & industrial on one platform

04
Remote control
Valve shutoff with diagnostics & audit trail

05
Cellular IoT
GPRS & NB-IoT, no local infrastructure

06
Field-proven
12 890+ nodes deployed & operational

One ecosystem. All utilities. Full control.

Ready to connect your infrastructure?

Company
VAD s.r.o.
Bratislava, Slovakia, EU

Web
iot.vadsro.eu
vadsro.eu

Email
info@vadsro.eu
Sales & technical support

One ecosystem. All utilities. Full control.

VADTel SENS · VADTel Metr · ValveLink · IoT Platform · SCADA