



TECHNICAL SOLUTIONS
industrial technology

Technical Solutions Industrial Intelligence Platform

Vendor-Independent SCADA, IIoT &
Wide-Area Monitoring Solutions



From field data to operational intelligence

With ERP Integration, Cybersecurity, BMS Integration,
Training & Lifecycle Support





Who We Are

Technical Solutions is an engineering-led industrial technology company delivering practical digital transformation for utilities, infrastructure, energy, water, fuel logistics, buildings and industrial operations.

We combine field engineering, automation, SCADA, IIoT, communications, enterprise integration, power systems, cybersecurity and lifecycle support into complete solutions designed for real operating environments.



Local execution.



Vendor-independent design.



Long-term support.



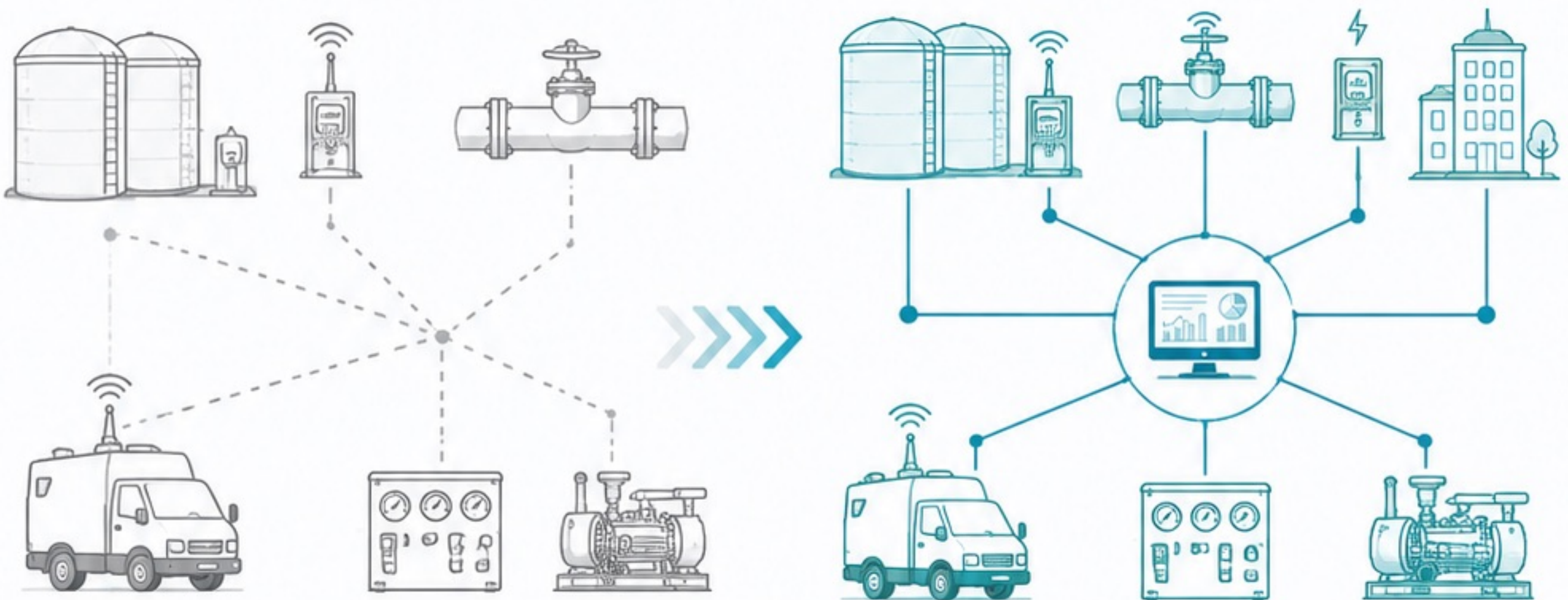
The Challenge

Industrial operations need real-time visibility.

Many organizations operate critical assets across large areas, remote locations, harsh environments and mixed infrastructure.

Some assets are modern and connected.

Others are mechanical, analog, isolated or dependent on manual reporting.



Common challenges:



Delayed or missing field data



Limited power and communication at remote sites



Difficult legacy system integration



Reactive maintenance instead of prevention



No single operational view for management



Solution Overview

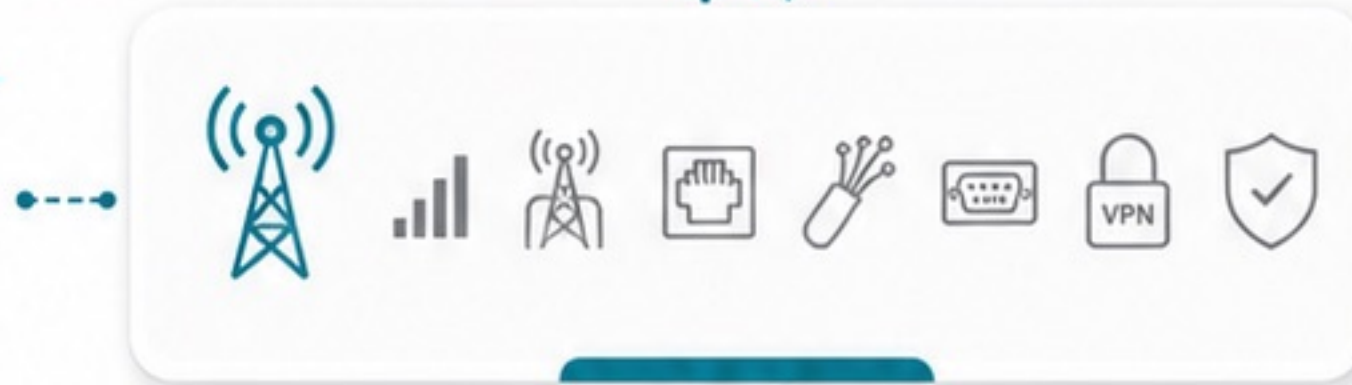
One platform for monitoring, control, reporting, analytics, alerts and enterprise integration.

The TS Industrial Intelligence Platform is designed around five layers:

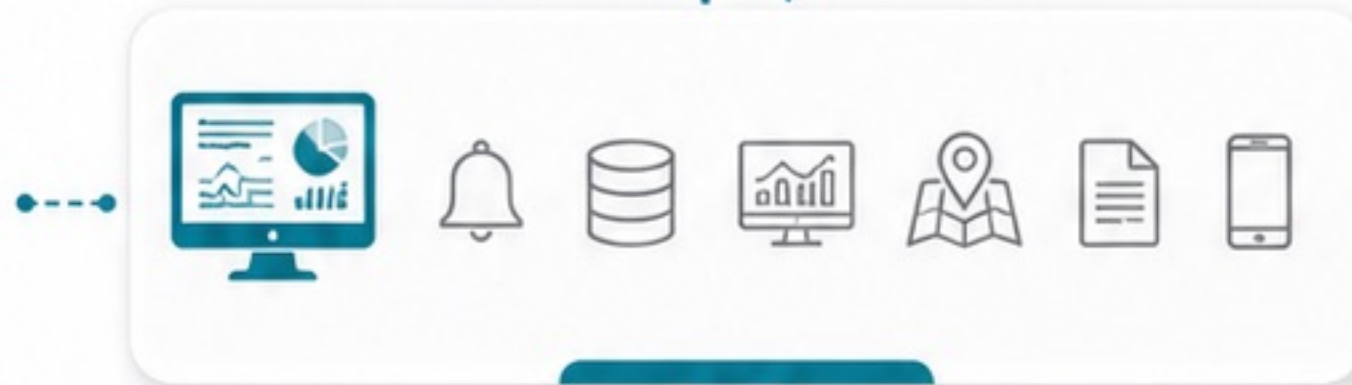
1 Field Layer —
sensors, meters, RTUs, gateways, controllers, BMS points, PLCs and legacy equipment.



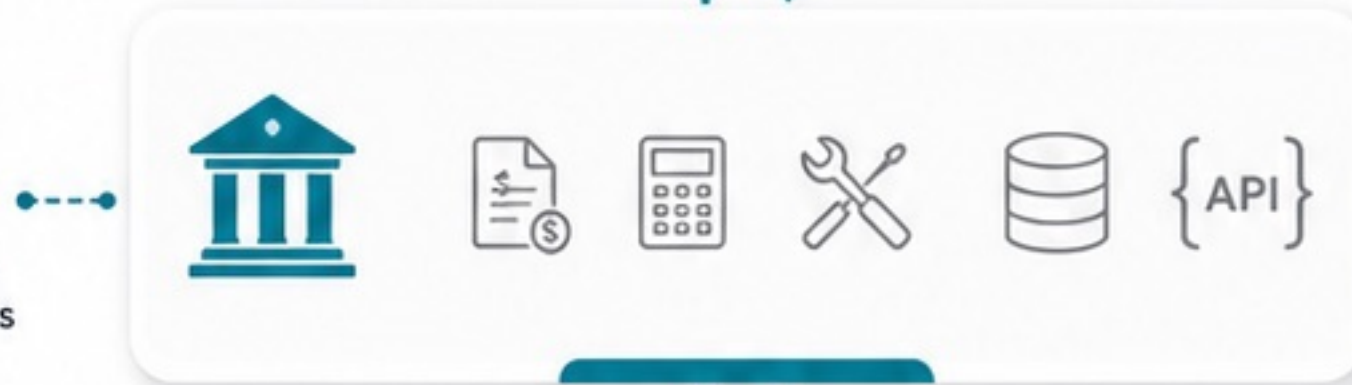
2 Communication Layer —
LPWAN, cellular, Ethernet, fiber, radio, serial, VPN and redundant backhaul.



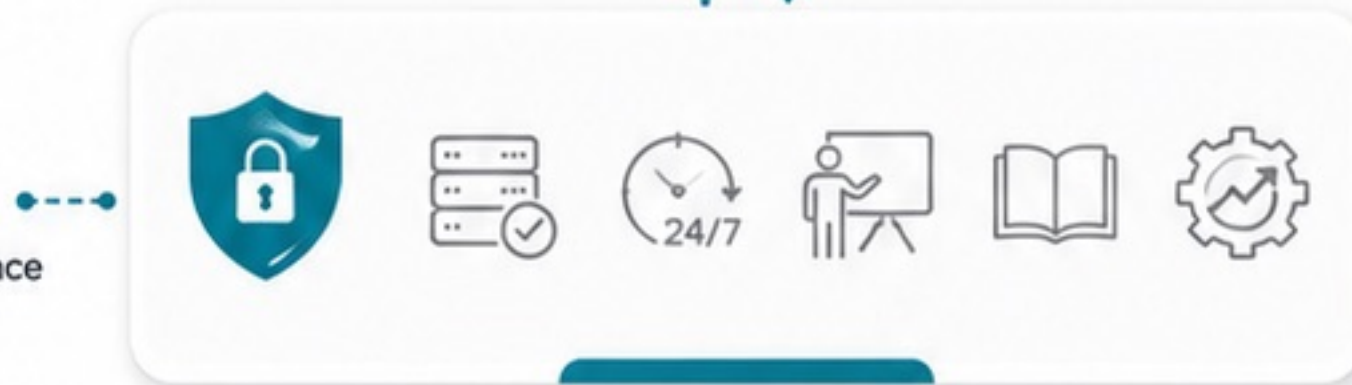
3 SCADA & IIoT Layer —
visualization, alarms, historian, dashboards, maps, reporting, mobile access and control.



4 Enterprise Layer —
ERP integration, billing systems, accounting, maintenance systems, data warehouses and APIs.



5 Support Layer —
cybersecurity, high availability, training, documentation, maintenance and continuous improvement.



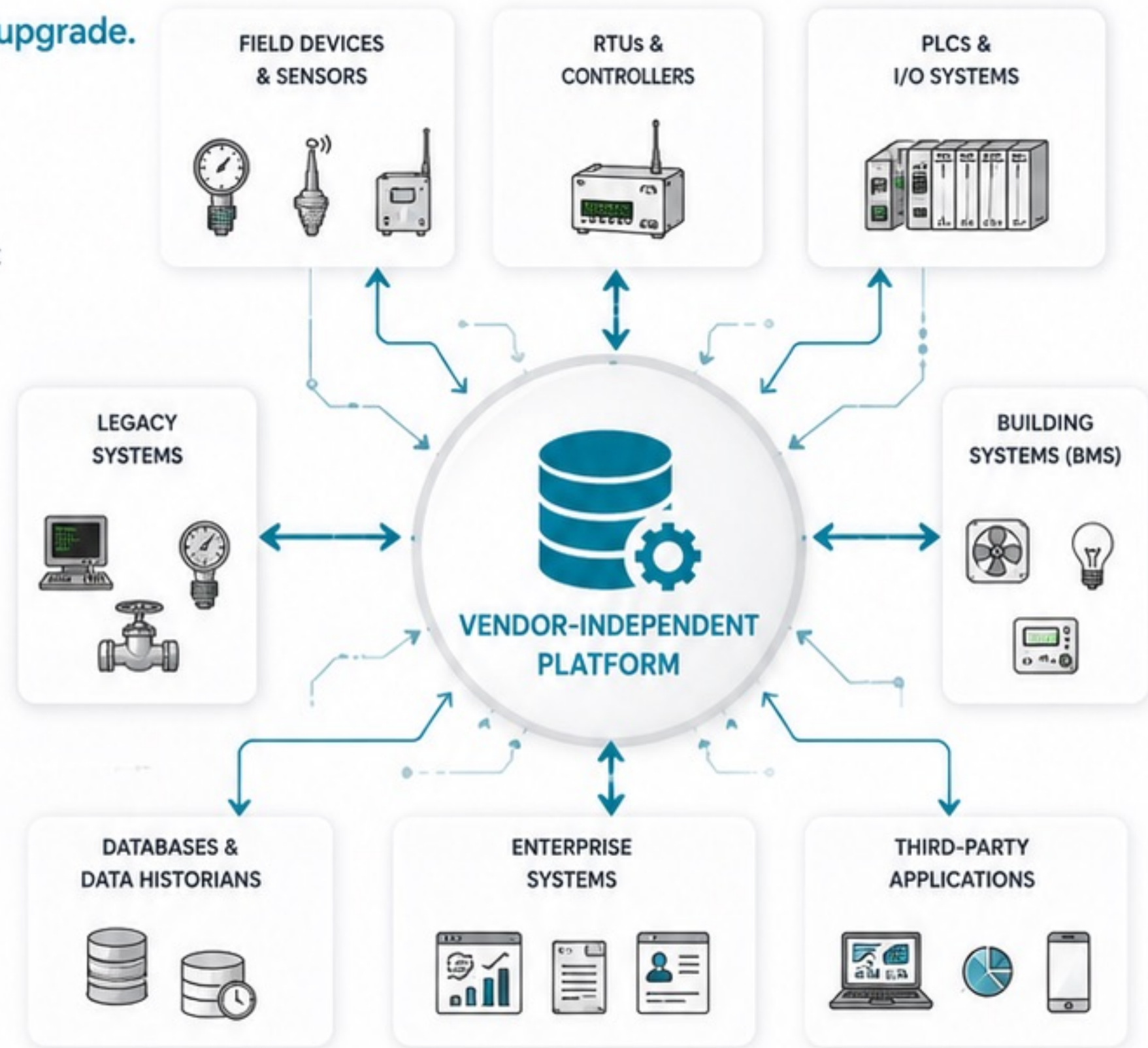


Why Vendor Independence Matters

Freedom to integrate, expand and upgrade.

Technical Solutions designs vendor-independent systems because clients should not be locked into one equipment brand, one protocol or one supplier.

Our solutions are built to integrate with current and future equipment through open standards, industrial protocols, database interfaces, APIs and custom connectors.



Client advantages:



Add new equipment without replacing the entire platform



Connect legacy systems that still perform critical functions



Reduce dependency on closed systems



Expand gradually by site, region, department or application



Protect existing investments while modernizing operations

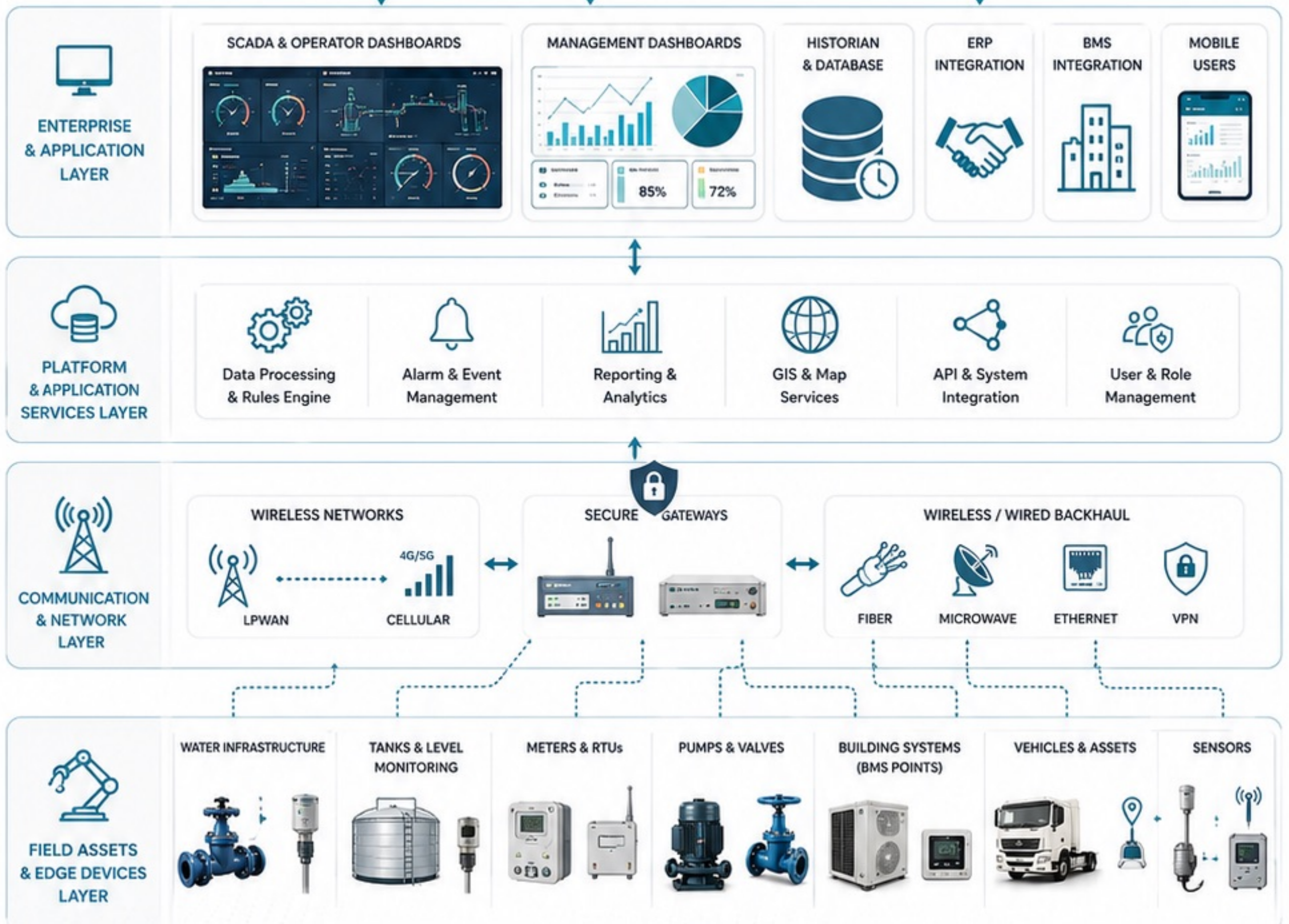


Platform Architecture

From field assets to enterprise decisions.

The platform collects field data from industrial assets, processes it through secure communication channels, stores it in structured databases and historians, then delivers it through dashboards, alarms, reports, maps and enterprise interfaces.

Core capabilities:












SCADA & Operations Intelligence

A unified SCADA layer for industrial operations.

The SCADA layer serves as the central operational interface for monitoring and controlling industrial assets.

Typical uses:

-  Water networks
-  Power grids
-  Fuel stations and tank farms
-  Pumping stations
-  Buildings and facilities
-  Remote industrial sites
-  Utilities, municipalities, oil, gas and logistics operations



For Operators

It provides live status, alarms, trends, control screens, event history and asset views.



For Management

It transforms operational data into performance indicators, exception reports and decision-ready insights.





IIoT & Wide-Area Monitoring

Connecting remote assets at scale.

Industrial IoT and wide-area monitoring allow organizations to connect assets that were previously difficult, expensive or impractical to monitor.

The platform supports low-power field sensors, remote telemetry, long-range communication and private industrial networks for geographically distributed assets.



Typical applications:

- Remote site monitoring
- Pressure and flow monitoring
- Tank level monitoring
- Manhole and cabinet status
- Flood and leak detection
- Asset tracking
- Vehicle and tanker monitoring
- Critical infrastructure monitoring
- Building system monitoring

“ Remote assets become visible, measurable and manageable.”



Field Sensors & Edge Devices

Smart data collection from the field.

The field layer connects physical assets to the digital platform.

The system can collect data from:

- Pressure sensors
- Level sensors
- Flow meters
- Pulse counters
- Mechanical meter retrofit readers
- Flood sensors
- Manhole sensors
- Motion sensors
- Temperature and humidity sensors
- Energy meters
- Fuel tank sensors
- Vehicle and tanker devices
- PLC and RTU signals
- BMS points
- Dry contacts
- Analog signals
- Serial devices

The platform supports both new installations and retrofit projects, allowing old mechanical or analog equipment to be gradually digitized without stopping operations.



**Pressure
Sensor**



**Level
Sensor**



**Flow
Meter**



**Pulse
Counter**



**Mechanical Meter
Retrofit Reader**



**Flood
Sensor**



**Manhole
Sensor**



**Motion
Sensor**



**Temperature &
Humidity Sensor**



**Energy
Meter**



**Fuel Tank
Sensor**



**Vehicle & Tanker
Device**



**PLC / RTU
Signals**



**BMS
Points**



**Gateway /
Edge Controller**

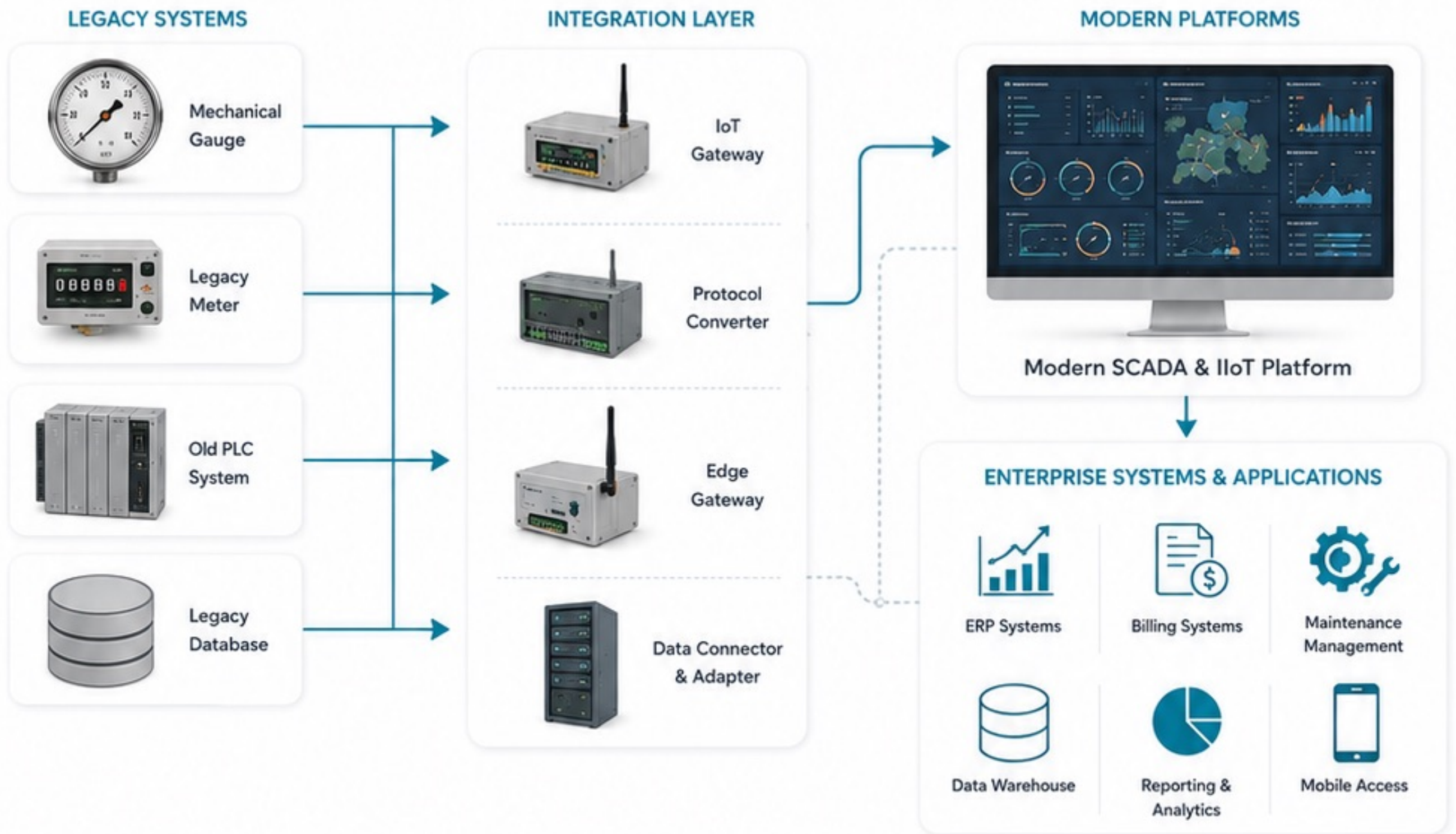


Legacy System Integration

Modernize without replacing everything.

Many industrial environments depend on legacy systems that cannot be replaced immediately. Technical Solutions designs integration strategies that allow these systems to become part of a modern monitoring and control environment.

We can integrate:



“ Modernization does not always mean replacement. Often, it means intelligent integration. ”



BMS & Facility Systems Integration

Building Management Systems as part of industrial intelligence.

The TS Industrial Intelligence Platform can integrate Building Management Systems into the same operational environment used for industrial monitoring.

BMS integration can include:

-  HVAC monitoring
-  Lighting systems
-  Energy meters
-  Water meters
-  Pumps and valves
-  Generator and UPS status
-  Fire alarm interfaces
-  Access control events
-  CCTV system status
-  Environmental sensors
-  Server room conditions
-  Facility alarms
-  Equipment runtime
-  Maintenance indicators



For large facilities, utilities, hospitals, offices, control centers and industrial sites, **BMS integration provides a unified view of building performance and operational infrastructure.**



Water Infrastructure Monitoring

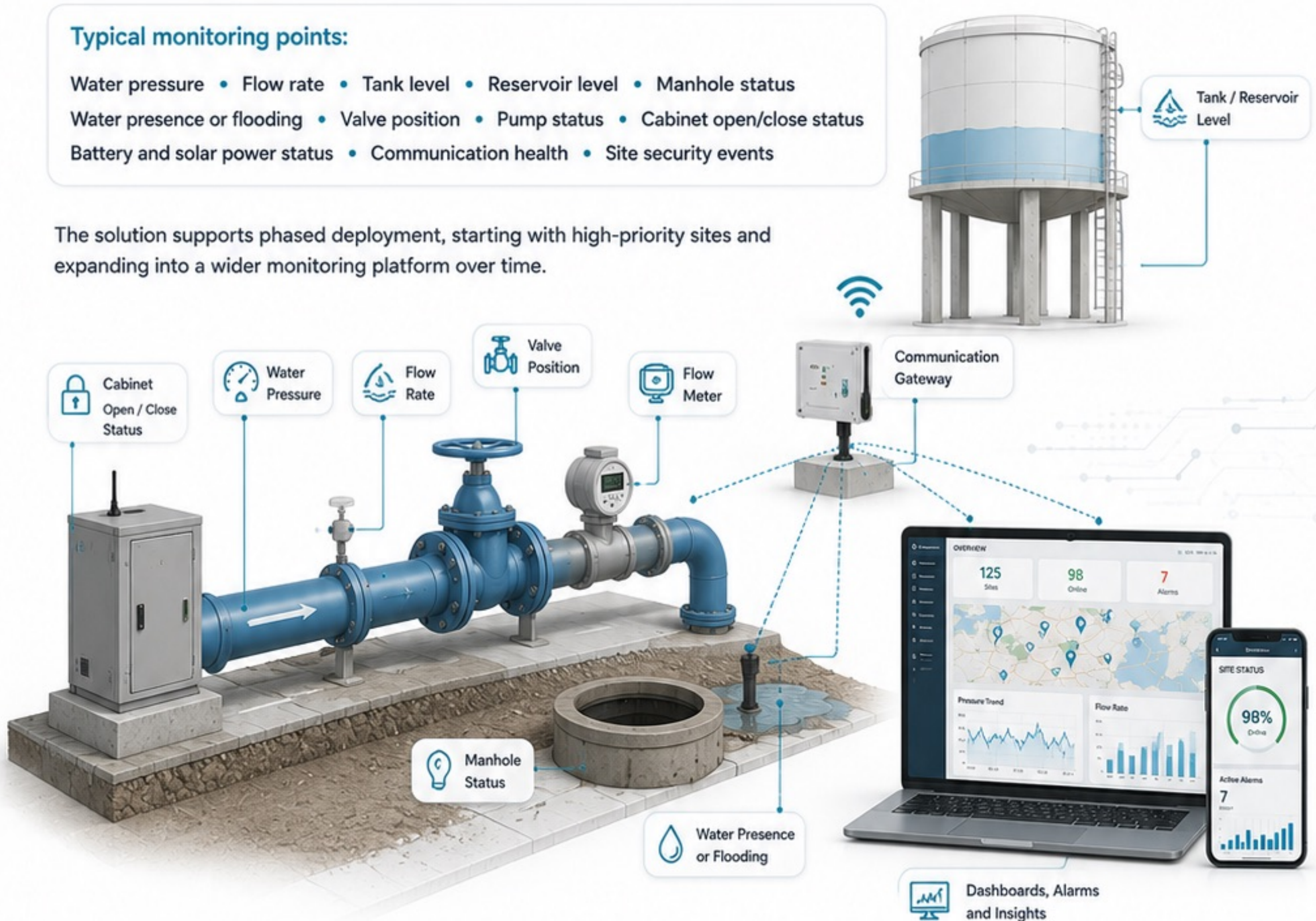
Monitoring turnouts, tanks, reservoirs and remote water assets.

Water infrastructure often covers large geographic areas with difficult access, limited power and limited communication. The platform is designed for this type of environment.

Typical monitoring points:

- Water pressure
- Flow rate
- Tank level
- Reservoir level
- Manhole status
- Water presence or flooding
- Valve position
- Pump status
- Cabinet open/close status
- Battery and solar power status
- Communication health
- Site security events

The solution supports phased deployment, starting with high-priority sites and expanding into a wider monitoring platform over time.



Remote Sites

Designed for wide-area assets with challenging access and limited infrastructure.



Low Power

Battery and solar-powered devices deliver long life with minimal maintenance.



Phased Expansion

Start with priority sites and scale gradually across regions, systems and applications.



Fuel Tank & Fuel Logistics Monitoring

Real-time visibility for fuel stations and tankers.

Fuel operations require accurate visibility of stock levels, tanker movement, deliveries, losses and consumption patterns.

OPERATIONS DASHBOARD

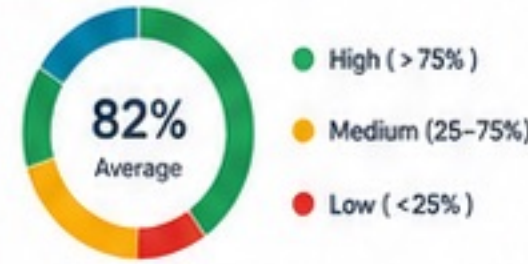
TOTAL STATIONS
128

ONLINE
116

ACTIVE TANKERS
24

ALERTS
8

STATION STOCK OVERVIEW



CONSUMPTION (LITERS)



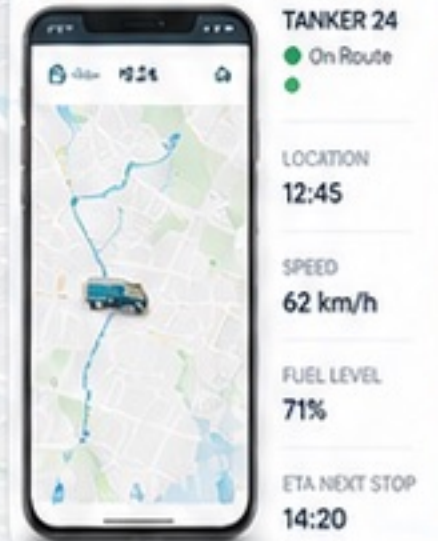
The platform can monitor:

- Station tank levels
- Tanker tank levels
- Vehicle location
- Vehicle speed
- Delivery route
- Fuel loading and unloading events
- Station stock availability
- Consumption trends
- Potential theft or abnormal behavior
- Alarms and exceptions
- Mobile access for managers
- Accounting or ERP integration

FUEL DEPOT



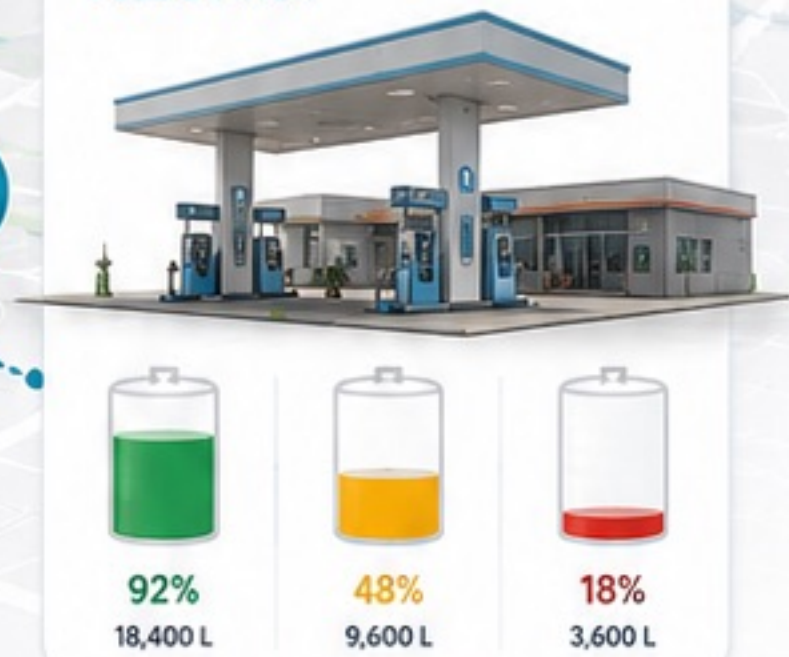
MOBILE ACCESS



TANKER STATUS



FUEL STATION



LIVE EVENTS & ALERTS

- Fuel Loaded 12,000 L
- Fuel Unloaded 10,500 L
- Low Stock Station 15
- Route Deviation Tanker 24
- Possible Theft Station 08
- Equipment Fault Tanker 17



Know where the fuel is, how much is available and when action is required.



Energy Data Management

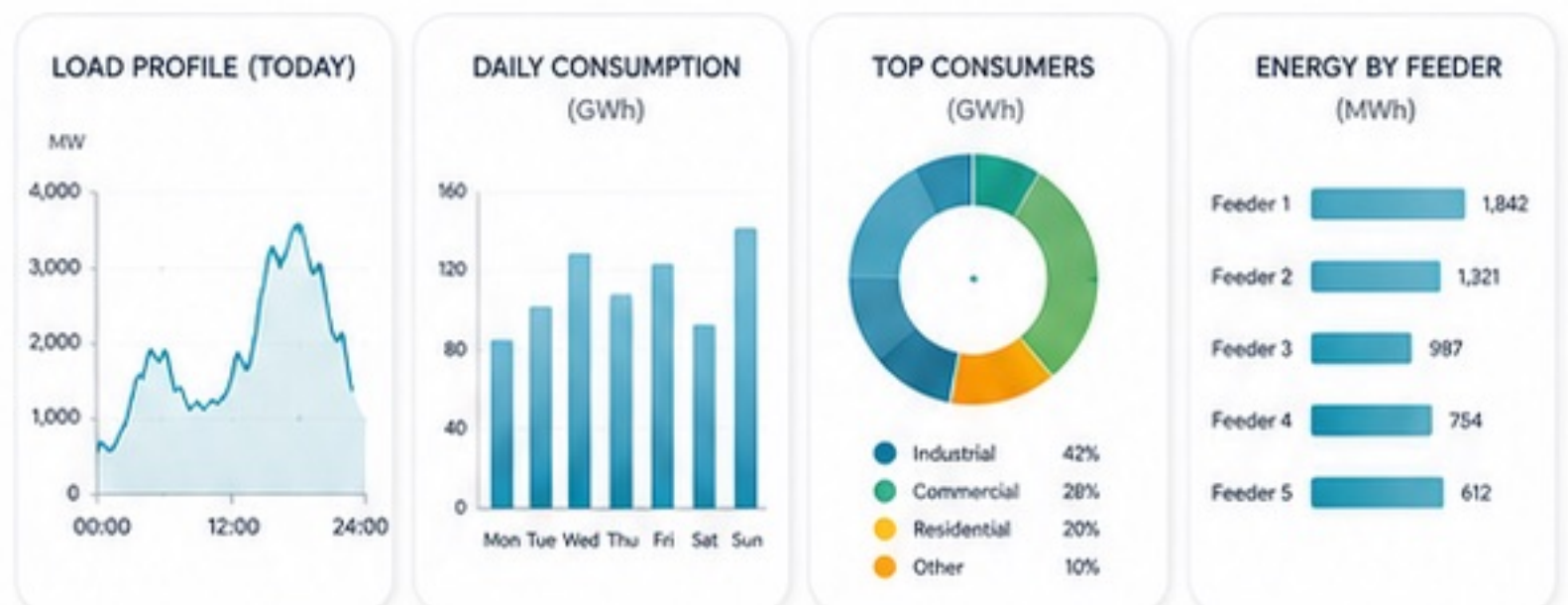
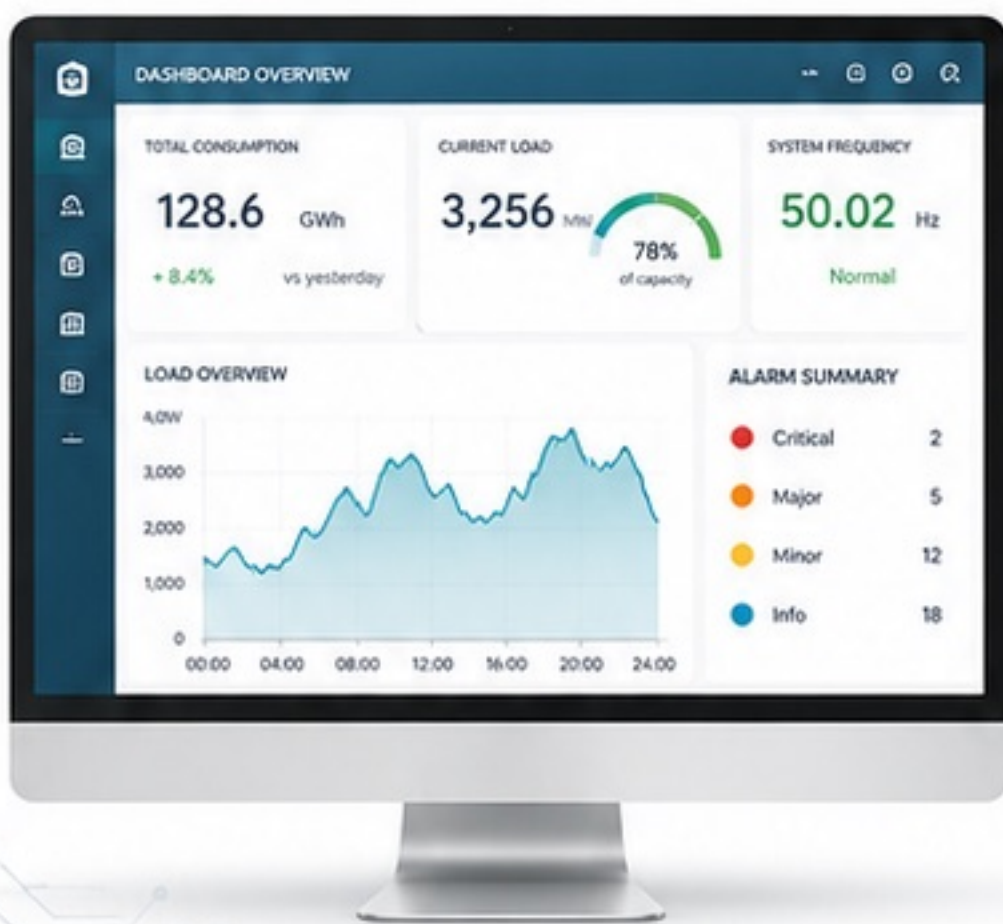
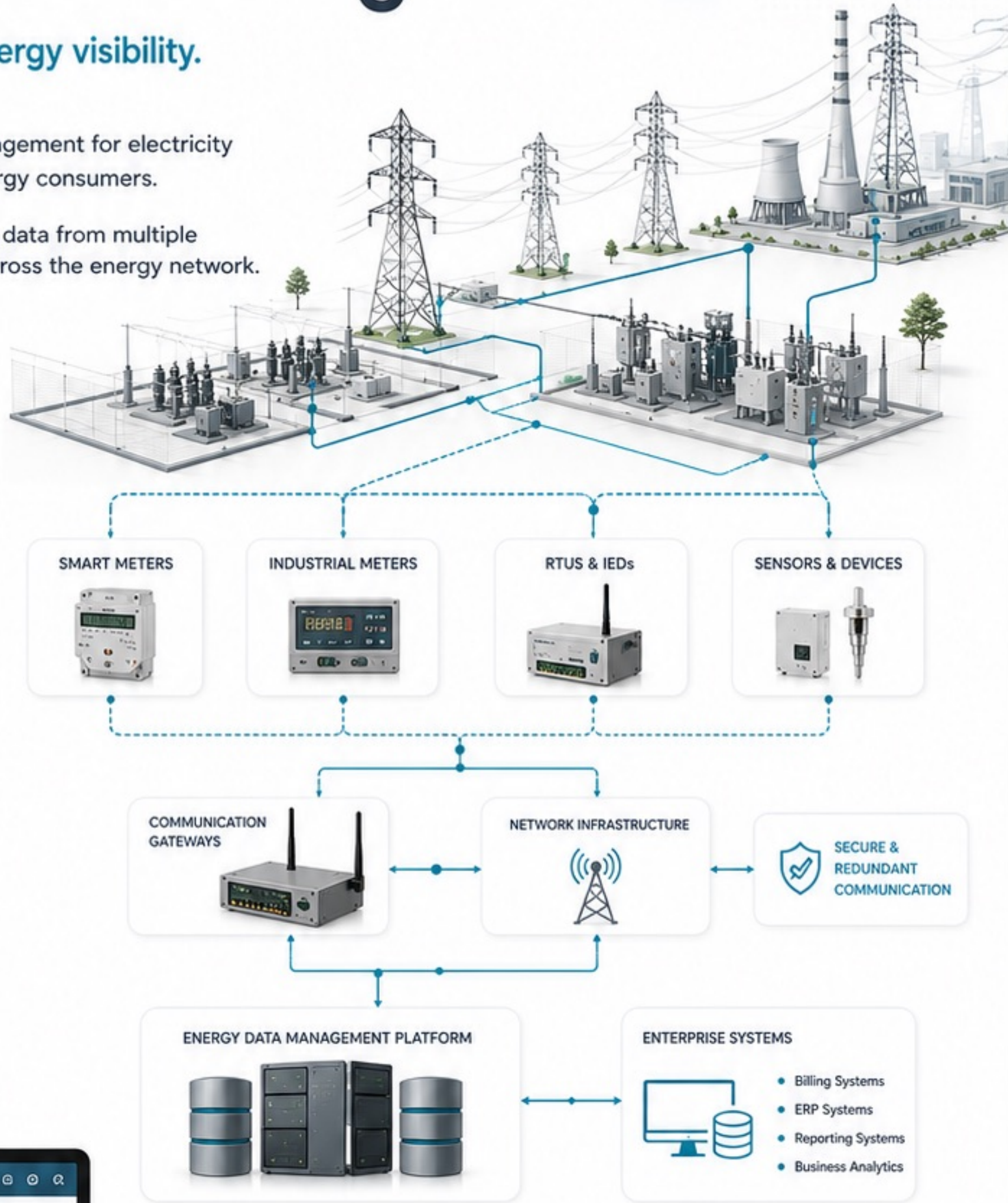
Smart grid, metering and energy visibility.

The platform supports energy data management for electricity utilities, industrial facilities and large energy consumers.

It can collect, process and analyze meter data from multiple sources and provide real-time visibility across the energy network.

Core capabilities:

- Energy data collection
- Remote meter reading
- RTU and meter integration
- SCADA visualization
- Load profiles
- Consumption history
- Billing data support
- Peak and base load analysis
- Substation and feeder monitoring
- Power grid dashboards
- Exception reporting
- Data export and integration





AMI & AMR Solutions

Automated meter reading for utilities and facilities.

Automated Meter Reading and Advanced Metering Infrastructure help utilities and large organizations reduce manual work, improve data accuracy and gain real-time insight into consumption.

METERING ECOSYSTEM



The platform can support:

- Residential meter reading
- Commercial meter reading
- Industrial meter reading
- Water meter reading
- Electricity meter reading
- Gas meter reading
- Pulse-based meters
- Digital meters
- Meter retrofit options
- Billing integration
- Consumption profiles
- Abnormal usage detection
- Service failure detection
- Manual-reading reduction

The system provides several key capabilities:

- CONSUMPTION DASHBOARD:** Displays real-time consumption data for Electricity (12,450 kWh), Water (8,350 m³), and Gas (4,920 m³). It also includes a **CONSUMPTION PROFILE** graph showing usage over a 24-hour period (00:00 to 24:00).
- ABNORMAL USAGE ALERTS:** Detects high consumption and provides a **VIEW ALERTS** button.
- BILLING INTEGRATION:** Ensures data accuracy with **GENERATE BILL** functionality, including checks for Meter data, Validation, and Billing.
- MOBILE ACCESS:** Provides a mobile app interface for **Overview** of consumption data, including bar charts for Electricity, Water, and Gas.



ACCURACY

Accurate, validated data eliminates manual errors and improves decision confidence.



VISIBILITY

Real-time consumption insight across all assets empowers faster and smarter actions.



BILLING SUPPORT

Automated data flow reduces billing disputes and accelerates revenue collection.



Industrial Asset & Fleet Monitoring

Monitoring mobile and fixed assets.

The platform can monitor both fixed industrial assets and mobile assets.

Applications include:

- Fleet tracking
- Vehicle movement monitoring
- Tanker route monitoring
- Asset location
- Generator monitoring
- Mobile equipment monitoring
- Remote cabinet monitoring
- Field team activity support
- Operational alerts
- Unauthorized movement detection
- Fuel usage indicators
- Maintenance data
- Driving behavior indicators
- Dispatch or ERP integration



ASSET OPERATIONS DASHBOARD



LIVE MAP VIEW



By combining location, sensor data, alarms and reporting, the platform provides a practical view of asset performance and operational discipline.



GIS, Maps & Spatial Intelligence

Operational data on the map.

Industrial operations are not only data points — they are locations, routes, zones, regions, assets and service areas.

The platform can integrate GIS and mapping features to show:

- Asset locations • Site status
- Sensor alarms • Vehicles and tankers
- Stations and depots • Water turnouts
- Power assets • Buildings and facilities
- Maintenance zones • Service areas
- Incident locations • Geographic trends



Map-based visualization helps operators and managers understand where problems are happening, prioritize response and coordinate field teams more effectively.



- #### DATA LAYERS
- Assets
 - Sensors
 - Vehicles
 - Facilities
 - Pipelines
 - Power Network
 - Water Network
 - Zones

- #### MAP TOOLS
- Search
 - Filter
 - Measure
 - Draw
 - Bookmarks
 - Export

MAP OVERVIEW



INCIDENTS (TODAY)

	Critical	2
	Major	4
	Minor	7
	Info	12

126
Total Assets

13
Active Alarms

24
Vehicles Online

98%
Sites Normal

Zones
18
Total Zones



Dashboards, Reports & Alarms

Turning data into action.

The platform transforms field data into usable operational intelligence.

Dashboards can be designed for:

Operators	Managers	Maintenance teams
Executives	Control rooms	Field supervisors
Finance and billing teams	Security teams	Facility managers

Reporting and alarm features:

- ✓ Live dashboards
- ✓ Trend graphs
- ✓ Historical reports
- ✓ Exception reports
- ✓ SMS and email alerts
- ✓ Mobile notifications
- ✓ Alarm escalation
- ✓ Consumption reports
- ✓ Asset health summaries
- ✓ Maintenance reports
- ✓ Data export
- ✓ Role-based access

OVERVIEW DASHBOARD

All Sites Today

TOTAL SITES

128

Online 116

ACTIVE ASSETS

2,345

Online 2,102

ALARMS

18

Critical 4

SYSTEM HEALTH

98%

Good

ENERGY CONSUMPTION (kWh)

CONSUMPTION BY CATEGORY

ASSET HEALTH SUMMARY

82% Healthy

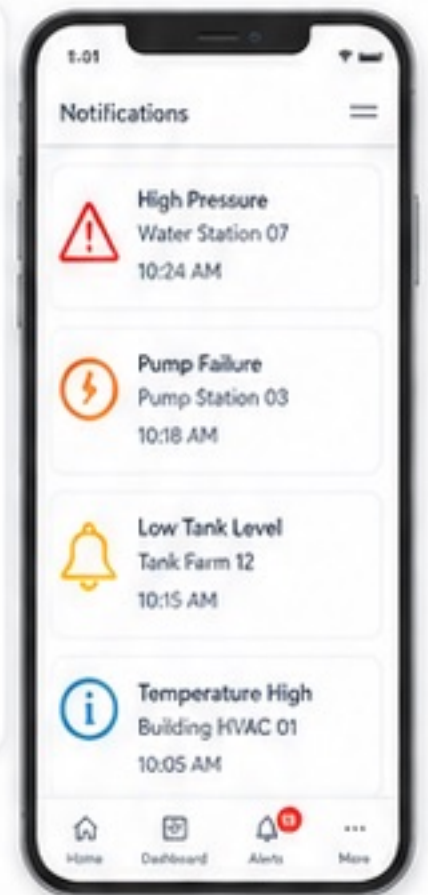
- Healthy 82%
- Warning 12%
- Critical 6%

ALARM SUMMARY (TODAY)

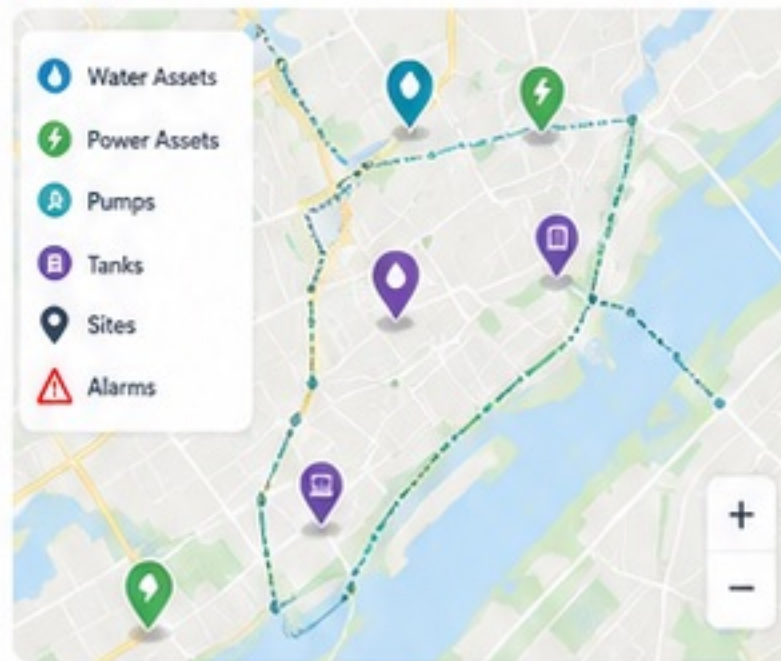
ACTIVE ALARMS

View All Alarms →

TIME	SITE	ALARM	SEVERITY	STATUS
10:24:15	Water Station 07	High Pressure	Critical	Active
10:18:42	Pump Station 03	Pump Failure	Major	Active
10:15:09	Tank Farm 12	Low Tank Level	Minor	Active
10:10:33	Power Substation 02	Voltage Unbalance	Warning	Active
10:05:12	Building HVAC 01	Temperature High	Info	Active



ASSET MAP



REPORTS & EXPORT

Historical Reports

Consumption Reports

Maintenance Reports

Export Data

ENERGY (kWh)

125,430

▲ 8.4% vs yesterday



WATER (m³)

43,210

▲ 6.2% vs yesterday



FUEL (LITERS)

18,950

▼ 3.1% vs yesterday



ACTIVE ALARMS

18

4 Critical



MAINTENANCE DUE

23

This month



UPTIME

99.2%

This month



“ The right data, at the right time, for the right user. ”



Control Rooms & Command Centers

Centralized monitoring for critical operations.



Technical Solutions can design and implement control-room environments for monitoring, dispatch, supervision and incident response.

Control room solutions may include:

- SCADA operator screens
- Video walls
- Alarm consoles
- GIS dashboards
- Incident views
- Operational reports
- Communication tools
- CCTV integration
- BMS status views
- Utility monitoring
- Fleet and asset monitoring
- Access-controlled workstations
- High-availability network and server infrastructure



VISIBILITY

Large display walls and dashboards provide a unified, real-time view across all operations and infrastructure.



RESPONSE

Integrated alarms, incident views and communication tools enable teams to respond faster and more effectively.



RELIABILITY

Redundant servers, secure networks and access-controlled workstations ensure continuous, secure operations.



The objective is to provide a single operational environment where teams can **see, understand and respond** to live events.



ERP Integration as a Complementary Layer

Connecting operations with business processes.

ERP is not the main focus of the TS Industrial Intelligence Platform, but it is an important complementary service.

Technical Solutions can integrate industrial data with administrative and business workflows, including:

- Sales • Purchasing • Inventory • Transport
- Fleet maintenance • Human resources
- Finance • User management
- General management dashboards
- Customer records • Station records
- Delivery records • Invoices • Approvals • Reports

INDUSTRIAL DATA SOURCES



BUSINESS WORKFLOWS & PROCESSES



ERP integration extends the value of the platform from operations to business management.





Cybersecurity as a Complementary Layer

Securing industrial and enterprise systems.

Cybersecurity protects the platform, users, infrastructure and data.

LAYERED SECURITY ARCHITECTURE

Technical Solutions can support:

- Security assessments
- Network segmentation
- Firewall design
- Secure remote access
- User access control
- Multi-factor authentication
- Endpoint protection
- Vulnerability management
- Log monitoring
- SOC implementation
- Incident response planning
- Security awareness training
- Backup and recovery planning
- Business continuity planning
- Disaster recovery planning
- IT/OT security alignment



SOC MONITORING

24/7 monitoring, threat detection and proactive response.

INCIDENT RESPONSE

Prepared processes to detect, contain and resolve incidents.

BACKUP & RECOVERY

Secure data backup and recovery to minimize disruption.

BUSINESS CONTINUITY

Maintain critical operations during any disruption.

The goal is to ensure that monitoring and control systems are functional, resilient, controlled and secure.












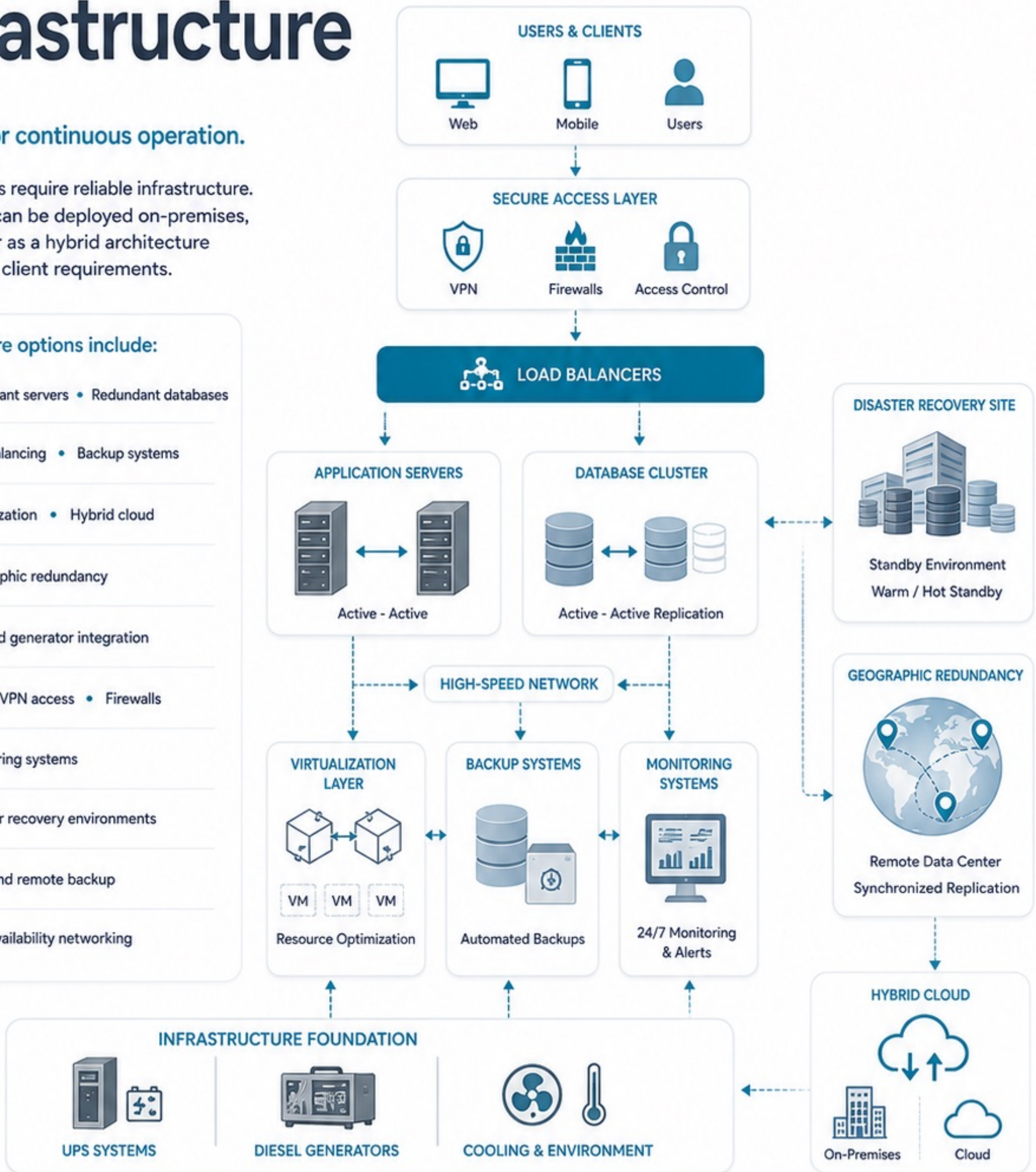
High Availability & Infrastructure

Designed for continuous operation.

Critical systems require reliable infrastructure. The platform can be deployed on-premises, in the cloud or as a hybrid architecture depending on client requirements.

Infrastructure options include:

-  Redundant servers • Redundant databases
-  Load balancing • Backup systems
-  Virtualization • Hybrid cloud
-  Geographic redundancy
-  UPS and generator integration
-  Secure VPN access • Firewalls
-  Monitoring systems
-  Disaster recovery environments
-  Local and remote backup
-  High-availability networking



The design considers local operating realities such as power interruptions, communication instability, dust, remote access limitations and practical maintenance.





Implementation Methodology

From study to deployment.





Training, Knowledge Transfer & Support

Built to be owned by the client.

Technical Solutions places strong emphasis on knowledge transfer. A successful platform should not remain dependent on outside support for daily operation.

TRAINING CAN INCLUDE:



- SCADA operation
- Dashboard use
- Alarm handling
- Reporting
- Device configuration
- Gateway configuration
- Network management
- User administration
- BMS integration management
- Database and historian basics
- Cybersecurity awareness
- Maintenance procedures
- Troubleshooting
- Expansion planning





SUPPORT CAN INCLUDE:

- Local support
- Remote support
- Regular visits
- Software updates
- System health checks
- Maintenance agreements
- Future enhancement services


Comprehensive training for all user levels.



Clear documentation and practical knowledge transfer.



Reliable support to keep your systems running.



Continuous improvement and future-ready solutions.



Selected Solution Applications

One platform, multiple industrial use cases.



Water Infrastructure

Turnouts, tanks, reservoirs, flow, pressure, manholes, pumps, valves and remote sites.



Energy & Utilities

SCADA, EDMS, AMR, AMI, metering, load profiles, billing support and grid visibility.



Fuel Logistics

Station tanks, tanker tracking, fuel levels, delivery visibility, alerts and logistics KPIs.



Buildings & Facilities

BMS integration, HVAC, energy meters, generators, UPS, fire alarm interfaces and facility dashboards.



Industrial Operations

Asset monitoring, production data, equipment status, alarms, reporting and maintenance visibility.



Government & Public Sector

GIS, dispatch, document workflows, fleet monitoring and command-center systems.



Suppliers & Technology Partners

Our technology partner ecosystem.

Main Industrial Software Partner



inductive
automation®

Inductive Automation

Used extensively as our main industrial software layer for SCADA, IIoT, HMI, alarming, reporting, edge connectivity, enterprise integration and mobile industrial applications.

Technology Ecosystem



SCADA and industrial software



LPWAN network management



Industrial gateways



Low-power field sensors



Tank and level monitoring



Flood and environmental sensing



Metering and RTU integration



Cloud and infrastructure platforms



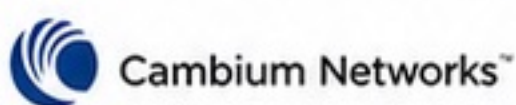
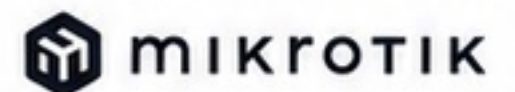
Cybersecurity services



Backup and resilience technologies



Enterprise integration tools





TECHNICAL SOLUTIONS

industrial technology

Industrial Technology for Critical Operations

TS Industrial Intelligence Platform helps organizations monitor, control, analyze, secure and optimize industrial assets — from remote field sensors to enterprise-level decisions.

Core capabilities:

- SCADA • IIoT • LPWAN • BMS Integration • Energy Data Management • Water Infrastructure Monitoring • Fuel Tank and Tanker Monitoring • AMI and AMR • GIS and Dashboards • ERP Integration • Cybersecurity • Training and Lifecycle Support

“ From field data to operational intelligence. ”

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