

About AMNETPRO S.A.S.

AMNETPRO S.A.S. is an engineering and technology company that transforms physical operations into measurable, connected environments that reveal what is happening and enable decisions with operational and financial impact. Since 2011, we have developed and integrated solutions across water, energy, agriculture, industry, infrastructure, and other operational environments.

From sensors and custom hardware to industrial communications, SCADA, data platforms, analytics, and AI, we integrate or develop what each operation requires. Whether an operation starts with no digital infrastructure or already runs on existing systems, we begin from its current reality and build only what is needed to create measurable value.

Our engineering starts with the operation, not with the technology. We understand the process, identify where value can be created, connect the critical variables, and turn operational data into decisions. Because engineering is only successful when it delivers measurable ROI.

Phase 1

Investigate

Every project begins by understanding the business objective, the operational process, and where measurable value can be created. We analyze how the operation behaves in real conditions, its constraints, critical variables, assets, and existing infrastructure. The objective is to understand the operation before defining the technology.

Phase 2

Define

Once the process is understood, we define what the operation actually needs to measure, connect, and control. Critical variables, sensors, equipment, communication architecture, and existing systems are evaluated to determine what must be integrated, adapted, or developed to obtain reliable operational information.

Phase 3

Engineer

We connect the physical operation with the required automation, communications, platforms, dashboards, analytics, and intelligence so raw data becomes actionable information. AMNETPRO integrates existing technologies or develops new components when required, creating an environment where the operation can be continuously understood and improved.

Phase 4

Achieve - Guaranteed ROI

Every project must justify its investment through measurable operational or financial impact. Improvements are evaluated through efficiency, resource optimization, reliability, productivity, cost reduction, or other relevant performance indicators. The objective is not simply to deploy technology, but to generate measurable ROI.

Universal Application. The IDEA methodology applies to any operational environment. Regardless of the industry, existing technology, or level of digitalization, AMNETPRO starts from the current reality of the operation and develops the path from physical process to data, understanding, decision, and measurable impact.



Smart Water Systems

Nevis Water Department

Introduction

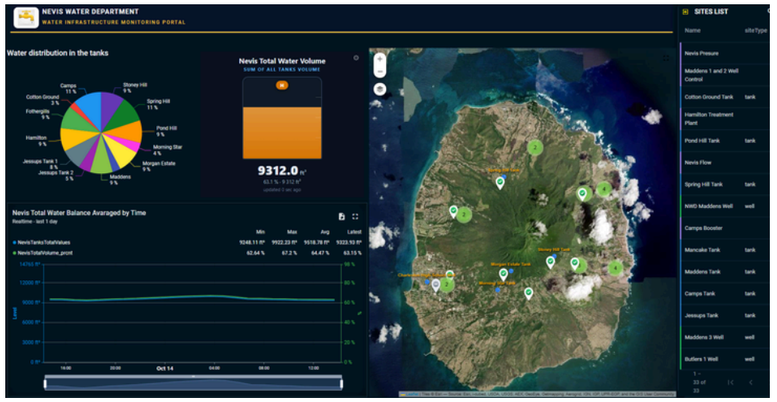
Nevis Island, part of the Federation of Saint Kitts and Nevis in the Caribbean Sea, is renowned for its volcanic terrain, tropical rainforests, and complex topography. The Nevis Water Department is responsible for managing and distributing the island's drinking water resources. However, traditional wired monitoring systems were vulnerable to lightning damage, manual inspections were inefficient, and pipeline leaks were difficult to detect in time.

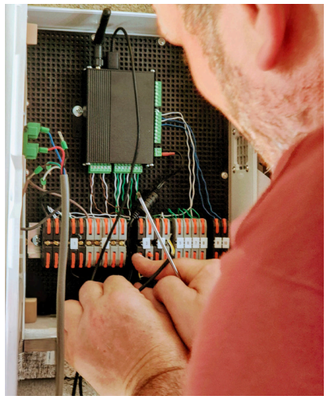
Challenge

The water utility needed to modernize an aging and largely reactive monitoring approach that limited visibility across tanks, pump stations, and pipeline networks. Manual operation, delayed fault response, and insufficient data integration reduced operational efficiency, increased maintenance burdens, and made it harder to manage water resources with precision.

Solution

The project deployed an island-wide tank monitoring and control infrastructure using level sensors installed across multiple storage tanks. Data is transmitted through a LoRaWAN communication network, enabling reliable long-range connectivity with low power consumption. Through the platform, operators can remotely monitor tank levels and control system components such as pumps and valves, improving operational coordination without the need to physically visit each location.









Key Element

The core of the project is the Muéstrame SCADA platform (muestrame.amnetpro.com). Unlike traditional SCADA systems that require costly on-site servers and infrastructure, Muéstrame operates on AMNETPRO-managed servers and is securely accessible from smartphones, tablets, or computers. The platform offers customizable dashboards, real-time alarms, analytics, and remote control capabilities, enabling operators to supervise and manage the entire water network from anywhere.

Results

The system provides operators with real-time visibility of the island's total water storage capacity and distribution status. Automated alerts allow rapid response to abnormal conditions, while consumption trend analysis supports improved operational planning. Reduced field visits, faster response times, and better coordination of water resources contribute to greater operational efficiency and reliability of the island's water infrastructure.

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Smart Water Systems

Intelligent Pulse Processing for Water Utilities

Introduction

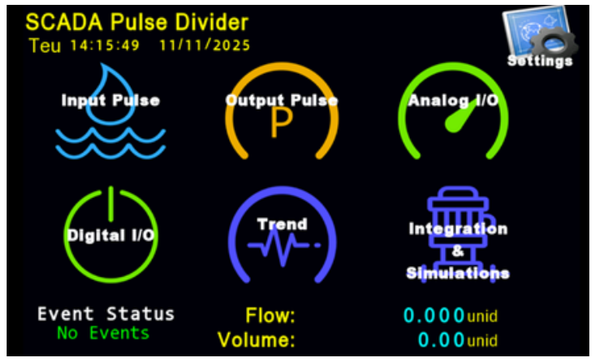
IRIT Canada Inc., strategic partner of AMNETPRO in Canada, identified the need within water utility systems to improve the reliability and usability of pulse signals generated by water meters. Accurate pulse interpretation is critical to determine flow and volume in distribution networks. To address this challenge, AMNETPRO designed and developed the AMIR-MP IAA platform, an intelligent pulse processing system capable of capturing, interpreting, and distributing pulse signals for advanced monitoring and integration.

Challenge

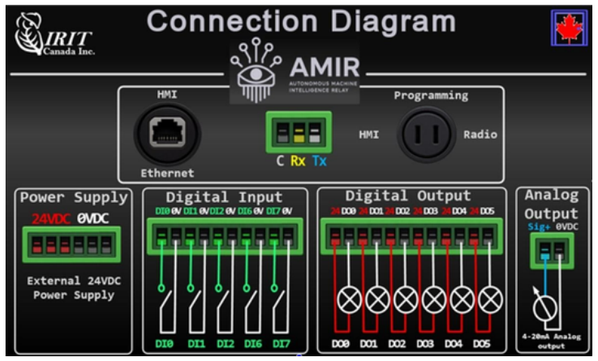
Water distribution systems commonly rely on pulse outputs from water meters to measure consumption and flow. However, these signals are often limited to a single connection and may suffer from instability or interpretation issues when multiple monitoring or control systems require access to the same signal. Utilities needed a reliable solution capable of accurately interpreting meter pulses while also allowing multiple systems to use the same measurement source.

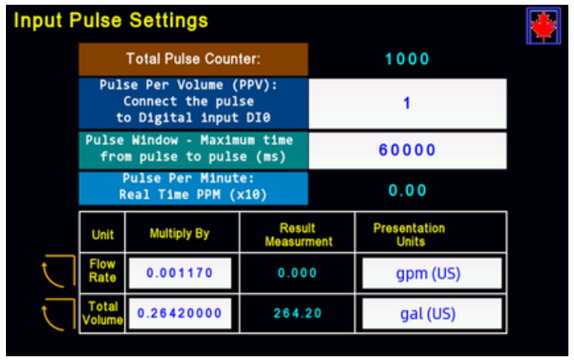
Solution

AMNETPRO developed the AMIR-MP IAA intelligent pulse processing platform to capture signals from water meters and interpret the flow and volume represented by each pulse. The system converts pulse signals into reliable measurement data while maintaining signal integrity. Additionally, AMIR enables controlled pulse duplication, allowing multiple monitoring devices, controllers, or SCADA systems to simultaneously receive the same pulse signal without affecting the original measurement.









Key Element

The key component of the project is the AMIR-MP IAA intelligent pulse processing platform developed by AMNETPRO. The system combines pulse interpretation, signal validation, configurable I/O, and pulse replication within a single edge device. By enabling reliable measurement interpretation and distributing pulse signals to multiple systems, the platform provides flexibility for utilities to expand monitoring, automation, and integration capabilities without modifying existing meters.

Results

The implemented solution enabled accurate interpretation of pulse signals generated by water meters while allowing the same measurement source to be shared across multiple monitoring and control systems. Utilities gained greater operational flexibility, improved system integration, and reliable flow and volume data. The ability to duplicate pulse signals without compromising measurement integrity expanded the possibilities for monitoring, automation, and operational decision-making.

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Smart Water Systems

St. Kitts Water Service Department

Introduction

St. Kitts, part of the Federation of Saint Kitts and Nevis in the Caribbean, manages multiple water storage tanks distributed across the island to support its drinking water distribution network. The Water Department initiated a modernization effort by implementing a digital monitoring system across 20 tanks. This first phase establishes the technological foundation for future expansion toward a more advanced and intelligent water monitoring infrastructure for the island.

Challenge

Before the project, operators lacked centralized visibility of the island's distributed water tanks and had limited information about storage levels and water conditions. Tank inspections required manual field visits, which delayed operational responses and limited situational awareness. In addition, water quality parameters were not continuously monitored, making it difficult to detect potential issues or evaluate system conditions across the network.

Solution

AMNETPRO deployed a remote monitoring system across 20 water tanks using level sensors and CTD sensors to monitor key water quality parameters. Data from each site is transmitted through the communication network to the Muéstrame platform, where a centralized dashboard provides real-time visibility of tank levels and water quality indicators. This enables operators to begin digital supervision of the island's distributed water storage infrastructure.



Key Element

The key element of the project is the Muéstrame SCADA platform (muestrame.amnetpro.com). Hosted on AMNETPRO-managed infrastructure, the platform removes the need for costly local servers while providing secure access from computers, tablets, or smartphones. Custom dashboards allow operators to visualize tank levels, monitor water quality parameters, and supervise distributed assets across the island through an intuitive interface.

Results

Operators now have centralized visibility of 20 water tanks distributed across St. Kitts, allowing continuous monitoring of storage levels and water quality conditions from a single platform. The system improves operational awareness and reduces reliance on manual inspections. This first implementation establishes the digital foundation for future expansion of the monitoring network and supports more efficient management of the island's water infrastructure.

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Smart Water Systems

SCADA System – Bogotá Water Utility

Introduction

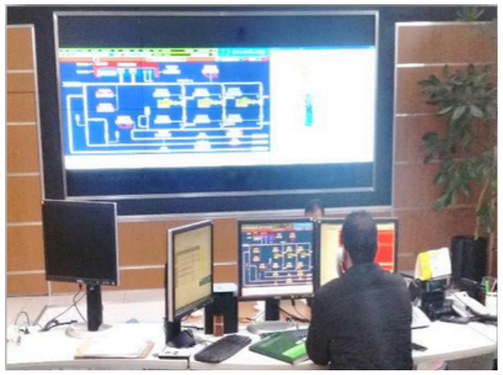
The Bogotá Water and Sewer Company operates one of the largest water distribution systems in Latin America, supplying potable water to Bogotá and surrounding municipalities. The infrastructure includes reservoirs, pumping stations, transmission pipelines, and distribution networks that must operate continuously and reliably. To support efficient operation, the utility requires advanced monitoring and control systems capable of supervising critical infrastructure in real time.

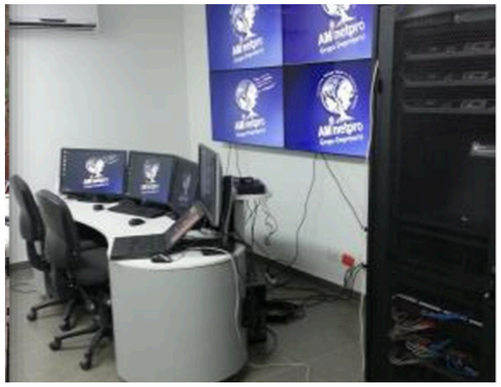
Challenge

The water distribution system includes numerous storage tanks, pumping stations, and control structures distributed across the city. Operating such a complex infrastructure requires constant monitoring of water levels, flows, pressures, and equipment status. Without centralized supervision, operators face limited visibility of system behavior, slower response to operational events, and reduced efficiency in managing the network.

Solution

AMNETPRO implemented a SCADA-based monitoring and control system designed to supervise critical elements of the water distribution infrastructure, including storage tanks, pumping stations, hydraulic valves, and process variables. The system collects operational data from field instrumentation and controllers and transmits it to centralized control servers installed on site. The SCADA platform provides real-time visualization, alarms, historical data analysis, and remote operational control of key assets.







Key Element

The core of the project was the implementation of an industrial SCADA architecture deployed on local servers within the utility infrastructure. This architecture allowed centralized monitoring, alarm management, operational dashboards, and historical data storage while maintaining full control within the client's IT environment. The platform integrates field sensors, telemetry stations, and automation systems to provide operators with a complete view of the network.

Results

The SCADA implementation significantly improved operational visibility and control of the water distribution infrastructure. Operators gained real-time monitoring of critical assets such as tanks, pumps, and hydraulic control points, enabling faster response to operational conditions. The system also provided historical data analysis and improved operational decision-making, contributing to more reliable water supply management across the distribution network.

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Smart Water Systems

Smart Monitoring and Control of a Water Mixing Junction

Introduction

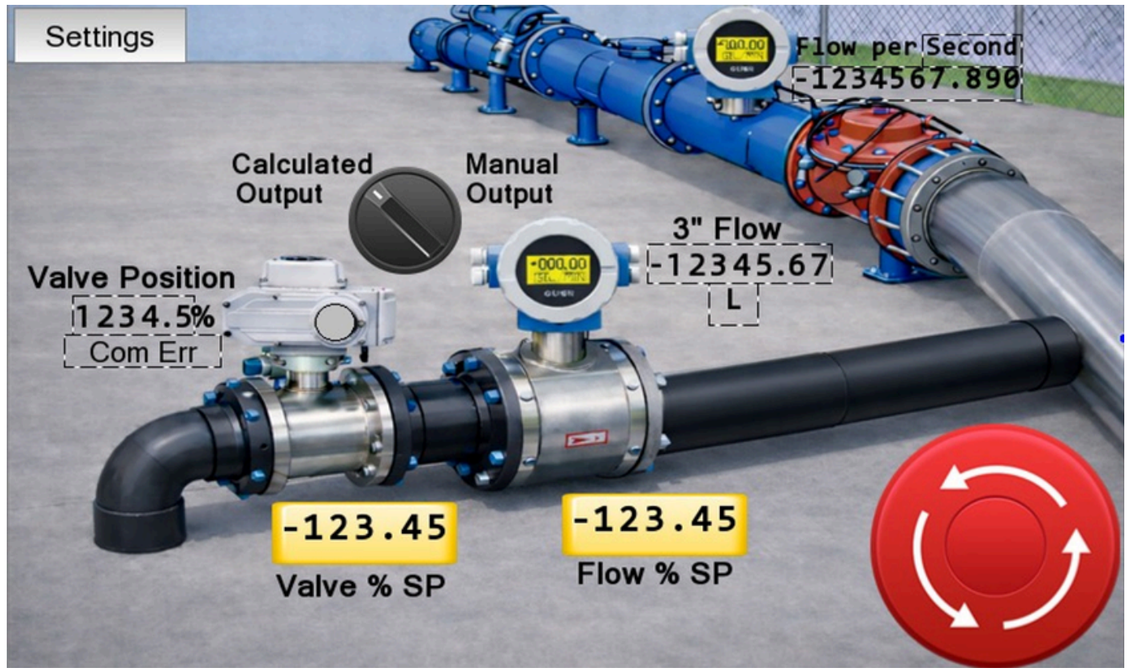
A water mixing junction required precise coordination between a 10-inch main pipeline and a 3-inch injection line. AMNETPRO developed an integrated monitoring and control system designed to continuously measure both flows, determine the actual upstream flow before the injection point, and automatically regulate the injected flow according to a user-defined mixing ratio. The solution combines real-time process visibility with automatic control, allowing operators to monitor flow conditions, valve position and operating mode from a centralized HMI.

Challenge

The amount of fluid required through the 3-inch injection line changes whenever the flow through the 10-inch main pipeline varies. A fixed valve position or static injection setpoint cannot maintain the required mixing ratio under changing operating conditions. The process therefore required continuous measurement of both flows, calculation of the true upstream flow, stable regulation of the injection valve, and predictable responses when main flow stops, measurements become unstable, communication is interrupted or a flow sensor reports a fault.

Solution

AMNETPRO integrated the 10-inch and 3-inch flow measurements with an industrial control panel, HMI supervision and automatic PI control. The system calculates the net main flow by subtracting the injected flow from the measured main pipeline flow and applies a rolling time average for control stability. From this value and the selected mixing ratio, the controller continuously calculates the required 3-inch flow setpoint and automatically adjusts the injection valve between 0–100% to maintain the required operating target.



Key Element

The key element is the dynamic relationship established between actual main pipeline conditions and injection control. Instead of maintaining a fixed injection value, the system continuously calculates the required target from the averaged net main flow and the user-defined mixing ratio. Filtering and averaging improve control stability, while automatic valve closure at zero main flow, PI integral reset, manual operation and defined sensor-fault behavior provide controlled responses to different operating and abnormal process conditions.

Results

The main and injection pipelines operate as a coordinated mixing process rather than as two independently controlled flows. When conditions in the main pipeline change, the required injection flow is automatically recalculated and the valve position is continuously adjusted to follow the selected mixing ratio. Operators have real-time visibility of flows, valve position and control mode, while automatic zero-flow response, manual operation and sensor-fault logic provide predictable behavior as process conditions change.

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Smart Water Systems

Conventional Water Filters Automation

Introduction

Water treatment plants require reliable process control to ensure the continuous production of potable water that meets regulatory standards. In Armenia, Colombia, Empresas Públicas de Armenia E.S.P. required modernization of the conventional filtration process within the treatment facility. AMNETPRO implemented an automation solution designed to improve operational supervision, enhance process control, and provide operators with better visibility of filtration system performance.

Challenge

The filtration process relied on limited automation and lacked centralized supervision of operational variables. Without real-time monitoring, operators had reduced visibility of filtration performance, making it difficult to detect operational deviations or optimize process conditions. This situation limited operational efficiency and reduced the ability to supervise filtration cycles and system performance within the treatment plant.

Solution

AMNETPRO implemented an automation system for the supervision and control of the conventional filtration process. The solution integrates field instrumentation, control systems, and communication infrastructure to collect operational data from the filtration units. Operators can supervise process variables and system conditions through a centralized monitoring environment, enabling more efficient control of filtration operations.









Key Element

The key element of the project was the integration of process instrumentation, automation control systems, and communication infrastructure within the filtration units. Sensors and control devices continuously collect operational variables from the filtration process, enabling centralized supervision of system behavior. This architecture allows plant operators to observe filtration cycles, evaluate operational conditions, and maintain stable process control throughout the water treatment operation..

Results

The automation system improved operational visibility and control of the filtration process within the treatment plant. Operators gained continuous access to critical process variables, allowing better supervision of filtration cycles and system conditions. The solution strengthened operational reliability and enabled more efficient management of treatment operations, contributing to more stable plant performance and improved supervision of water treatment processes.

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Smart Water Systems

Pressure Monitoring Points – Bogotá Water Network

Introduction

Thirty pressure-monitoring points across Bogotá's water network had to become visible from one control center. Each location needed to report both hydraulic pressure and an intrusion signal, despite being distributed across the city. AMNETPRO equipped the field sites with remote terminal units and communications, connecting readings from unattended points to the utility's supervisory operation. The project focused on giving scattered infrastructure a reliable operational voice.

Challenge

Pressure measurements lose much of their operational value if they stay at the point where they are taken. Bogotá’s requirement covered 30 network locations and included intrusion detection at each site. Staff needed reliable pressure values at the control center, correct readings from local instrumentation and a functioning communications link. Each installation also required robust equipment and configuration appropriate for the field.

Solution

Across Bogotá's water network, AMNETPRO integrated field pressure transmitters and intrusion contacts with InBeeBox RTUs housed in outdoor cabinets. The pressure readings entered the RTUs through 4–20 mA signals, while intrusion alarms used digital inputs. Each station transmitted information through cellular GPRS to the control center, following the reporting frequency defined by the utility. The result was a distributed monitoring architecture connecting 30 points with the supervisory team.





Key Element

The project's strength was its distributed design: thirty field locations, each combining a pressure transmitter, intrusion contact and rugged InBeeBox RTU. Pressure entered through a 4–20 mA channel, security status through a digital input, and readings traveled over cellular GPRS. The utility could set a reporting rhythm for each location, allowing the system to accommodate different monitoring needs while keeping the entire network visible from central control.

Results

Thirty points across Bogotá's water network gained a common route for sending pressure readings and intrusion signals to the control center. Instead of depending on information held at individual sites, operators could receive updates through cellular communication according to each station's configured schedule. The project strengthened the availability of field information for pressure supervision and gave the utility a practical basis for following conditions across a dispersed network.

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Smart Water Systems

Pressure Monitoring Points – Bogotá Water Network

Introduction

Two pressure-reducing valves were at the heart of a water-network control challenge: managing station pressure without relying solely on visits to the field. AMNETPRO connected the regulating equipment to remote supervision, combining pressure measurements, programmable RTUs and UHF communications. The implementation gave control-room operators a direct way to understand station conditions and command valve opening while keeping the hydraulic process visible through SCADA.

Challenge

Pressure varies as water enters and leaves a regulating station, so operators need to understand both sides of the valve before deciding how far it should open. Local maneuvers alone cannot provide immediate remote control over changing conditions. The utility needed a reliable link between inlet and outlet transmitters, a programmable control unit, the electromechanical valve and the central SCADA display to coordinate regulation without repeated trips to each station.

Solution

AMNETPRO installed field equipment and RTUs, connected the inlet and outlet pressure readings as 4–20 mA analog inputs and programmed the local control algorithm. The RTU drove each valve to the required percentage using a 4–20 mA analog output, then communicated with central SCADA by UHF radio. Operators received dedicated graphics displaying the station information and current operating conditions.









Key Element

At the center of the solution is a complete control loop, not just a pressure dashboard. Analog transmitters send inlet and outlet values to the RTU, which calculates and commands the required valve position through a 4–20 mA output. UHF radio carries the station information to SCADA, where the operator can follow conditions and control the valve remotely. Measurement, local logic and physical actuation work together in one responsive hydraulic system.

Results

With two pressure-reducing valves connected to the control center, operators gained the ability to adjust valve opening remotely rather than travel to each station for routine maneuvers. Inlet and outlet pressure readings also became available through SCADA, supporting closer observation of the network's behavior. This combination of remote positioning and pressure visibility gave the utility more direct control over the regulating stations and better information for hydraulic decisions.

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Smart Water Systems

AMIR Micro UI1203 – Intelligent Water Meter Integration

Solution

AMNETPRO combined the IBB150 pulse counter with an intelligent controller that processes signals from two water meters, calculates volume and flow, and generates UI1203/R21-compatible responses. AMIR Micro V5 creates its own Wi-Fi network, providing direct access to a configuration portal from a smartphone or computer. An onboard OLED display supports local monitoring, while optional LoRaWAN communication extends connectivity options within a compact integration platform.







Introduction

AMIR evolved from a practical challenge: enabling measurement devices with different communication methods to work together. For a project in Canada, AMNETPRO developed AMIR Micro, a new generation of its intelligent pulse-processing technology. The solution connects water meters to UI1203/R21 reading systems and allows measurement parameters to be configured directly from a smartphone through the device's own Wi-Fi network, extending interoperability without replacing existing measurement equipment.

Challenge

Water meters do not always speak the same language as the systems collecting their readings. Pulse signals can represent different volumes, while external readers require specific communication formats. These differences complicate the integration of existing instruments with new technologies. The challenge was to translate signals from two water meters into information compatible with UI1203/R21 readers while maintaining configurable measurement parameters and flexibility across different meter types.

Key Element

Its key innovation lies in adapting measurement data without requiring every device to use the same communication technology. Each meter channel supports configurable volume per pulse, meter identification and initial reading offsets. Modbus RTU connects the controller to the IBB150, while UI1203/R21 provides the external reader interface. Built-in Wi-Fi allows technicians to configure these parameters directly from a smartphone without relying on an external network.

Results

AMIR Micro expanded the AMIR family with a specialized interface for integrating two pulse-output water meters with UI1203/R21 reading systems. Its architecture combines intelligent signal processing, configurable measurement parameters and local wireless setup. This evolution provides a flexible way to connect existing equipment with new reading technologies, reinforcing AMNETPRO's approach to solving interoperability challenges through intelligent measurement engineering.

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Smart Water Systems

AMIR Micro V7 – Intelligent Water Meter Integration

Introduction

AMIR's evolution led AMNETPRO to develop Micro V7, a solution that goes beyond connecting measurement devices. Built on the IBB165 module, this intelligent analyser processes signals from two meters, calculates accumulated volume and flow, and generates new outputs compatible with other equipment. Its configurable architecture expands integration possibilities across existing technologies, even when devices use different signal formats and measurement requirements.

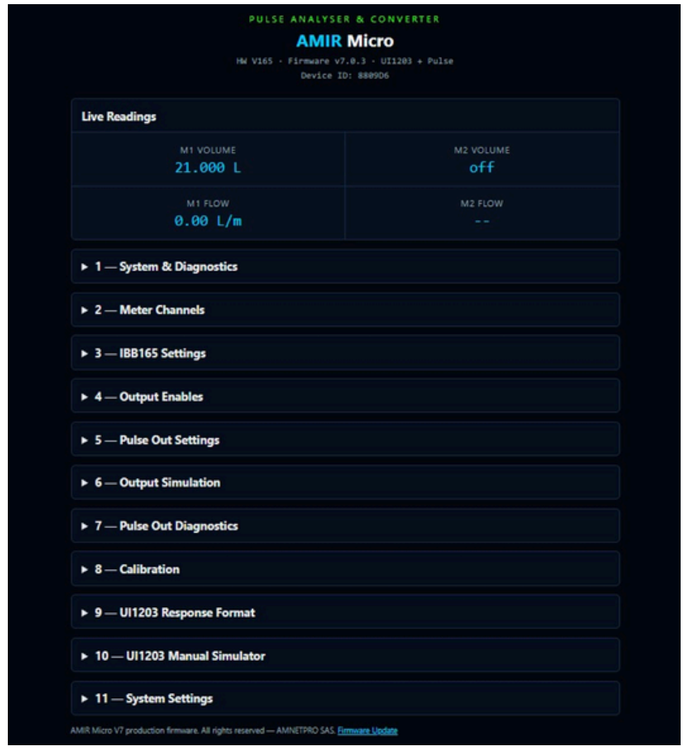
Challenge

In water networks, one pulse does not always represent the same volume or meet the requirements of the receiving equipment. These differences complicate integration between meters, data loggers and control systems. Even when devices are electrically connected, incompatible scaling or signal configurations can produce incorrect readings. A more adaptable solution was needed to interpret incoming pulses, adjust measurement parameters and generate outputs suited to each application.

Solution

AMNETPRO developed AMIR Micro V7 using the IBB165 module, with two pulse inputs and independent volume and flow processing. The device can generate Pulse Out signals with configurable volume per pulse and pulse width, provide UI1203 responses, or operate both interfaces simultaneously. Its Wi-Fi web portal enables technicians to configure meter channels, filters, scaling, outputs and operating parameters directly from a smartphone or computer without requiring a permanent Internet connection.





Key Element

V7's defining innovation is its ability to transform incoming measurement signals into outputs adapted to downstream equipment. It can select either meter or combine both sources, configure the volume represented by each generated pulse and adjust output timing. Meter and output calibration against reference readings, controlled simulation tools and device-specific digital licensing extend its capabilities, bringing analysis, conversion and configuration into one compact module.

Results

AMIR Micro V7 expanded the AMIR technology family with an architecture capable of processing two meter signals and generating Pulse Out or UI1203 responses according to integration requirements. Configurable calibration, simulation tools and Wi-Fi access provide additional flexibility for adapting measurements and verifying signal behavior. This evolution creates new possibilities for connecting equipment with different scaling, communication interfaces and pulse-output requirements.

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Smart Water Systems

EPM – Field Datalogger

Introduction

EPM required a portable solution to record process variables in hard-to-reach areas without relying on fixed infrastructure or permanent communications. AMNETPRO developed a Field Datalogger, conceived as “your SCADA in a suitcase,” capable of acquiring, displaying and storing field information over extended periods. The solution was designed to support technical monitoring campaigns and simplify subsequent data collection for internal operational analysis.

Challenge

Field monitoring campaigns cannot always be solved through permanent installations or isolated spot measurements. EPM needed to record pressure and other variables over extended periods at remote locations while preserving data continuity and availability. The challenge was to provide a transportable, robust and autonomous unit that could connect to multiple sensors, store information locally and allow practical retrieval of the recorded history after each monitoring campaign.

Solution

AMNETPRO developed a portable remote data acquisition and storage system integrated into a field suitcase. The unit connects to process sensors, displays recorded information, shows trend graphs and allows direct verification of measured variables on site. Its architecture combines battery-powered operation, high-capacity local storage and later data retrieval, turning the device into a flexible platform for temporary monitoring and control campaigns in remote or hard-to-access locations.





Key Element

The key differentiator was bringing SCADA-style acquisition capabilities into a mobile field unit. The Field Datalogger offers up to 6 months of battery-powered autonomy, storage capacity of up to 128 GB, and compatibility with multiple integration protocols and technologies, including IoT, LoRa, Sigfox and XBee. This combination allows the solution to adapt to different field conditions while preserving mobility, autonomy and practical deployment.

Results

EPM gained a portable solution for temporary monitoring deployments in hard-to-access locations, enabling long-duration variable recording and later data recovery for internal controls and operational analysis. The ability to transport the unit, connect it to different sensors, visualize trends on site and download recorded histories afterward strengthened diagnostic and follow-up activities without requiring permanent infrastructure at every monitoring point.

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Smart Water Systems

Monitoring of 23 Water Meters

Introduction

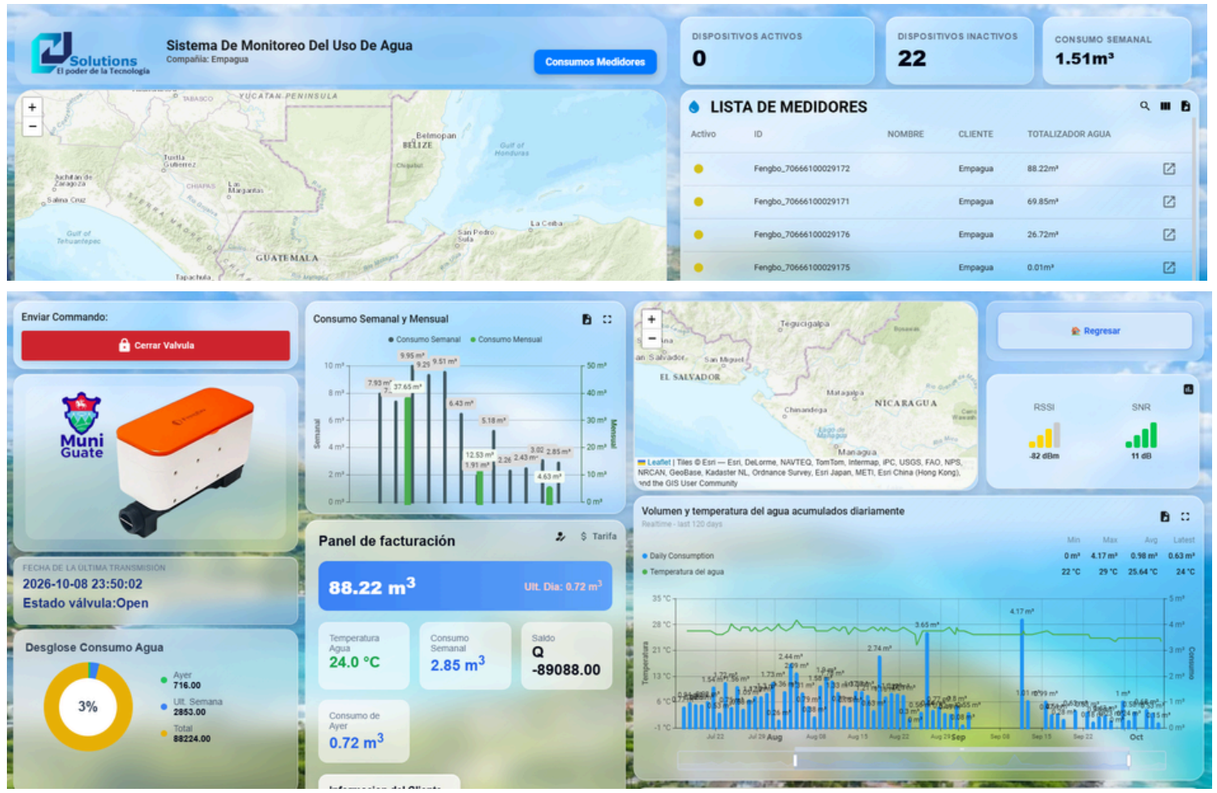
EMPAGUA required a solution to supervise and manage 23 water meters from a single platform, with visibility into both consumption data and the operating status of each device. AMNETPRO implemented the project on muestrame.amnetpro.com, using Muéstrame as the central control platform to consolidate meter information, gateway communication status, associated valves and the variables needed for both operational and commercial management of the system.

Challenge

Operating distributed water meters requires more than simply viewing accumulated readings. EMPAGUA needed to know the status of each meter, validate communication quality, identify events and alarms, generate reports between selected dates and remotely act on field devices when required. Without a centralized platform, the monitoring of consumption, valves, connectivity, customers and billing parameters became fragmented and less efficient.

Solution

AMNETPRO implemented a centralized monitoring platform in Muestrame to supervise 23 water meters in Guatemala. The system consolidated the meter list, activity status, accumulated consumption, weekly and monthly reporting, daily water volume and temperature variables, and the communication information of each device. In addition, it enabled remote valve opening and closing, displayed the date of the latest operation, and allowed billing parameters and customer assignments to be managed from the same platform.



Key Element

The key element of the project was muestrame.amnetpro.com as the integrated control center. The platform displayed not only meter behavior but also the status of the communication system, especially the gateways, generating alarms for communication failures or lack of reporting. It also showed signal-quality indicators such as RSSI and SNR, meter alarm modules, consumption histories, date-based reporting tools, and functions to configure billing tariffs and assign them to specific customers.

Results

EMPAGUA obtained a unified platform to supervise water consumption, communication status and remote operation of 23 meters from a single interface. The system enabled weekly and monthly historical review, date-range reporting, alarm visualization, communication-quality verification and remote valve control when required. By integrating operational and commercial variables in one environment, the project strengthened both technical monitoring and administrative control of the service.

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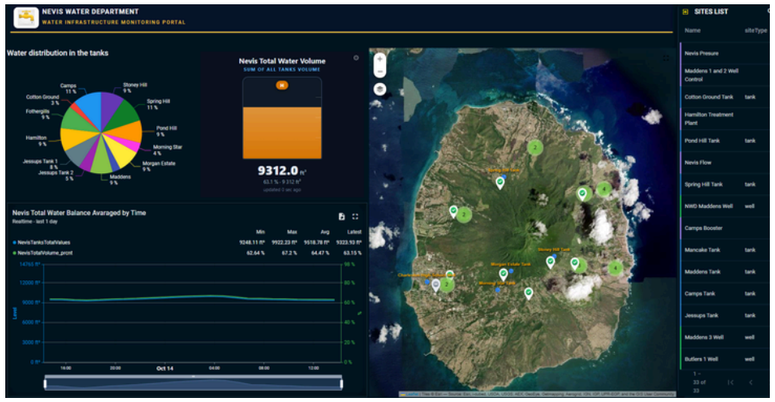


Smart Water Systems

New River Booster Station – Eden Browns

Solution

AMNETPRO engineered a bidirectional hydraulic system with a 30,000-imperial-gallon buffer tank, three-pump configuration, motorized valves, and PLC-based SCADA control using Modbus TCP/IP. The design prioritizes gravity-fed operation when elevations permit, while activating variable-speed pumps for reverse transfer. Automated sequences coordinate tank levels, pressure, flow, and pump operation, with protective shutdown logic for abnormal conditions.









Introduction

The Nevis Water Department required a new booster station to strengthen water distribution between reservoirs located at different elevations. AMNETPRO developed the hydraulic engineering and control design for a new pumping facility, integrating a buffer tank, pumping equipment, motorized valves, instrumentation, and SCADA automation. The project establishes a technical foundation for managing water transfers across challenging terrain with operational flexibility.

Challenge

Building a booster station from the ground up required more than selecting pumps. The system had to manage a 4.5 km pipeline with significant elevation differences, high pressures, and the ability to move water in both directions. Engineering challenges included sizing the pumping system, preventing water hammer, protecting equipment from excessive pressure, and establishing reliable operating sequences for a completely new hydraulic and automation infrastructure.

Key Element

The key element is muestrame.amnetpro.com, AMNETPRO's centralized monitoring and control platform, designed to bring the booster station's hydraulic and electromechanical systems into one operational environment. Through SCADA integration, it can provide visibility into tank levels, pressures, flow rates, pump status, motorized valves and alarms, enabling operators to supervise water transfers, identify abnormal conditions and coordinate the station's operating modes.

Results

The engineering design established a bidirectional water transfer strategy for a 4.5 km pipeline, prioritizing gravity-driven operation when conditions allow and controlled pumping for reverse flow. Hydraulic simulations evaluated transfer capacities of 350 iGPM with two pumps and 525 iGPM with three pumps. The proposed automation architecture provides a foundation for coordinated operation, equipment protection and centralized supervision through Muéstrame.

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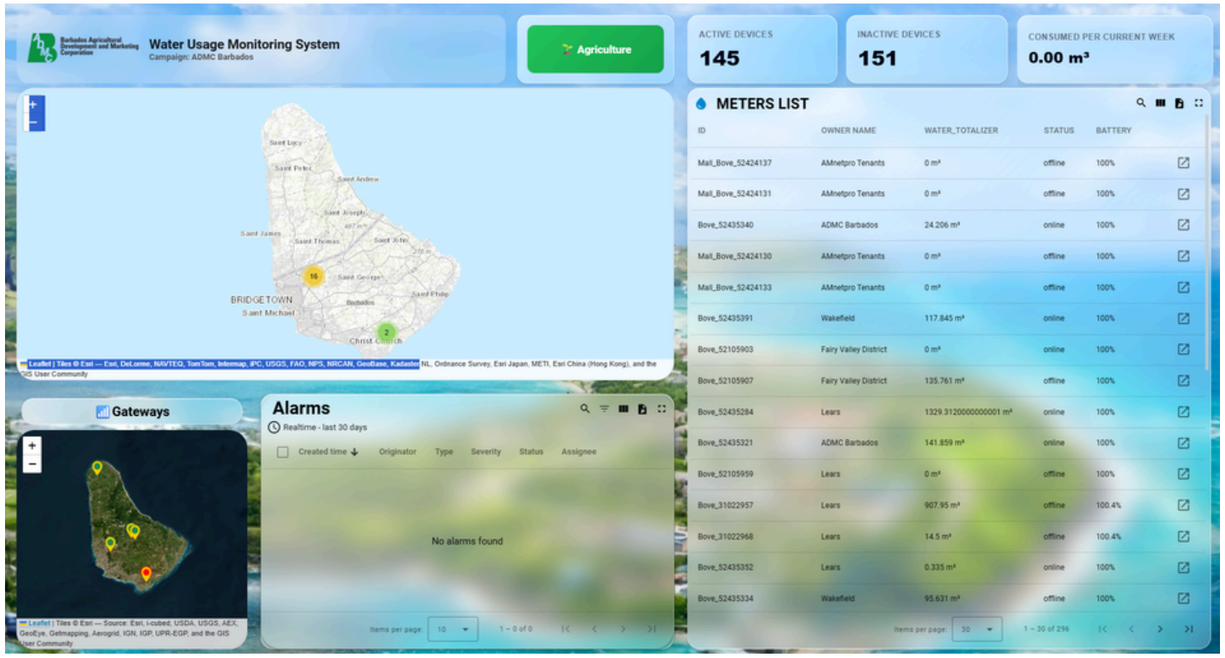


Smart Water Systems

BADMC – Agricultural Water Monitoring & Valve Control

Solution

AMNETPRO integrated BADMC's water meters into a centralized portal with a map of locations and a detailed device register. The system displays accumulated consumption, weekly and monthly trends, battery level, online or offline status and relevant alarms. From each meter's page, authorized personnel can consult its measurements, review customer and billing information, check valve position and manage remote opening or closing, linking water telemetry with operational control.



Introduction

In Barbados, the Barbados Agricultural Development and Marketing Corporation (BADMC) manages agricultural water use across geographically distributed locations. AMNETPRO developed a digital monitoring environment that brings smart water-meter readings, equipment connectivity and site locations into one view. The project connects water consumption information with remote valve management, giving the organization a clearer picture of how water is being used across its agricultural network.

Challenge

Distributed agricultural water meters are difficult to supervise when consumption, device availability and valve conditions must be checked separately. BADMC needed to identify the status of each meter, consult accumulated usage and understand which locations required attention. It also needed a way to manage water access without relying entirely on field visits. The challenge was to connect measurement, communications and valve operation within a single operational workflow.

Key Element

The key element is the muestrame.amnetpro.com platform, which links agricultural water-meter telemetry with remote valve control. Each meter has a geographic reference and an individual dashboard with consumption history, battery status and connectivity information. Authorized users can check whether the valve is open or closed and manage its operation remotely. This combination makes water usage visible while keeping a direct connection between measurement and decisions in the field.

Results

BADMC now has a centralized view of agricultural water meters across Barbados, including their mapped locations, communication status, water totals and consumption trends. Individual dashboards also show valve condition, battery level, customer information and usage breakdowns. Remote valve management adds an operational action to the monitoring system, enabling authorized teams to supervise water access and follow consumption without treating each meter as an isolated device.

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Smart Water Systems

Secret Bay – Dual-Pump Water System Monitoring

Introduction

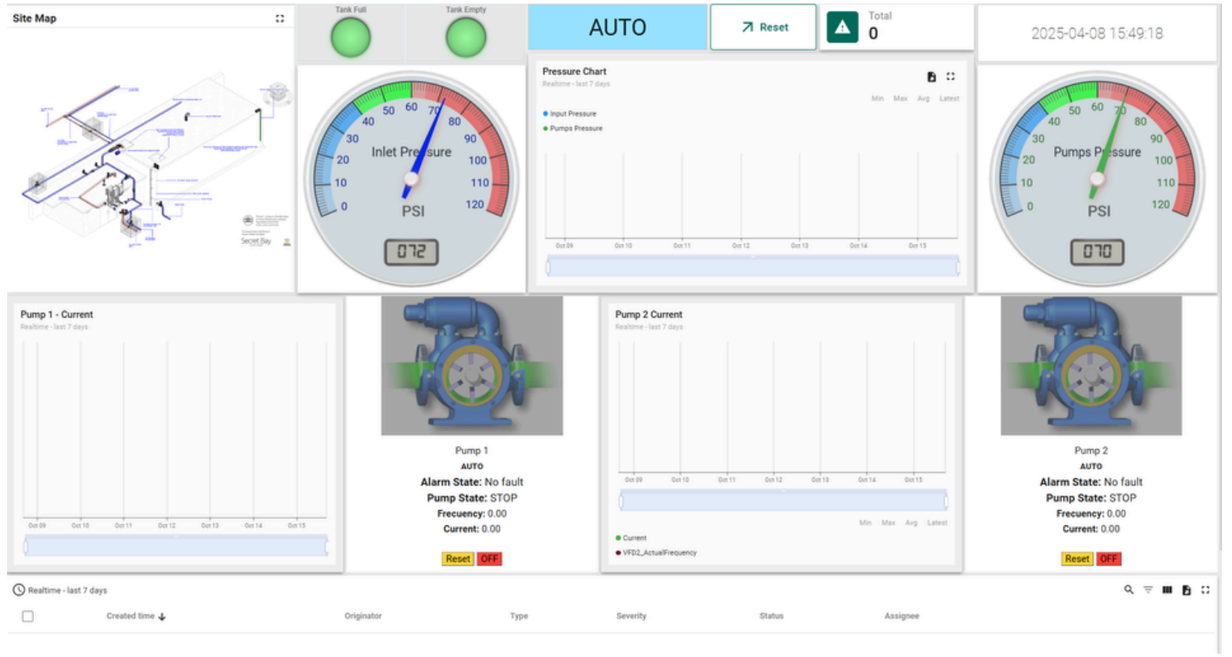
At Secret Bay in Dominica, dependable water supply depends on pumping equipment, storage tanks and a network serving the resort. AMNETPRO implemented monitoring for two water pumps, bringing their operating condition, inlet and discharge pressures, and tank indications into a single digital view. The system connects what happens at the pumps with the site's hydraulic layout, allowing personnel to follow essential water infrastructure without relying solely on checks at the equipment.

Challenge

A resort's water system must be understood as more than two motors switching on and off. Pressure at the inlet and the pump outlet, tank level indications, running status and equipment alarms all affect the operator's view of the installation. At Secret Bay, these signals needed to be seen together rather than separately at each pump. The challenge was to give the team a practical way to recognize operating conditions and identify which component needed attention.

Solution

AMNETPRO configured a monitoring dashboard for Secret Bay's two pumps, with individual operating panels and a reference drawing of the water installation. The interface displays inlet pressure, pump pressure, automatic mode, run or stop status, fault condition, motor current and drive frequency. Tank-full and tank-empty indicators add storage context, while pressure and electrical trend panels provide a common place to review readings and equipment behavior.



Key Element

The key element is the muestrame.amnetpro.com platform, which places both water pumps and their critical signals in one operational dashboard. Pressure gauges, tank-level indicators, motor current, drive frequency, operating mode and alarm status appear alongside the site's hydraulic diagram. Instead of viewing each measurement in isolation, Secret Bay's personnel can understand the relationship between water availability, pumping conditions and equipment status from a single interface.

Results

Secret Bay gained a centralized view of its two monitored pumps and the main signals needed for water-system supervision. Personnel can consult inlet and pump pressure, tank-level indications, automatic mode, motor frequency, current and individual fault or run states without switching between equipment panels. The dashboard also provides a place for pressure and motor trends, strengthening day-to-day visibility into the resort's water infrastructure and supporting more focused technical checks.

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About MUESTRAME

Muestrame is an advanced Industrial Internet of Things (IIoT) platform developed to monitor, manage, and control connected devices in real time.

The platform enables the integration of sensors, industrial equipment, controllers, and edge devices within a centralized environment, facilitating data collection, operational supervision, and remote control of distributed infrastructure.

Muestrame operates on on-premises infrastructure within the AMNETPRO datacenter, ensuring full control over the platform, information security, and high availability for critical operating environments.

By providing a ready-to-deploy IIoT infrastructure, Muestrame enables organizations to develop monitoring, automation, and control solutions without the need to build complex technology platforms from scratch.

Key Features of Muestrame

Feature 1. Connectivity and Device Management

Muestrame connects and manages sensors, gateways, and industrial equipment using standard protocols such as MQTT, CoAP, HTTP, and LwM2M, organizing devices by assets, locations, or operations.

Feature 2. Data Collection and Processing

The platform collects telemetry in real time and processes large volumes of data through an event engine that detects conditions, generates alarms, and executes automated actions.

Feature 3. Interactive Visualization

Dynamic dashboards allow real-time data visualization through charts, maps, indicators, tables, and SCADA-style panels, enabling operational monitoring and informed decision-making.

Feature 4. Automation and Rules Engine

A visual rules engine enables process automation through logical workflows that generate alerts, execute commands, and connect device events with operational actions.

Feature 5. Remote Device Control

Through Remote Procedure Calls (RPC), Muéstrame allows commands to be sent to field devices to change configurations, activate equipment, or request real-time readings.

Feature 6. Integration via APIs

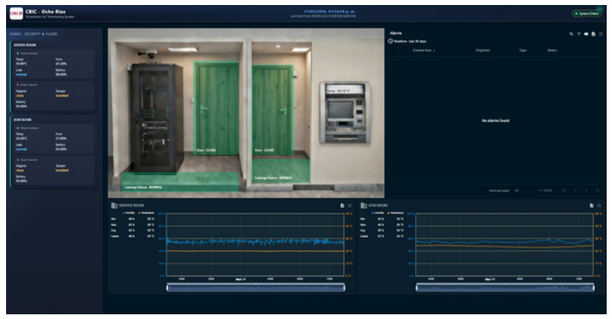
Muestrame provides REST APIs and MQTT messaging to integrate with enterprise systems, IIoT networks, industrial platforms, and external applications within a unified ecosystem.

This is what the Muestrame platform looks like









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About MuestrameAI

Turning Operational Intelligence into Measurable ROI.

MuestrameAI is AMNETPRO's private Operational AI platform, transforming operational data, scientific knowledge, and human expertise into smarter decisions, greater efficiency, and measurable financial results.

Beyond traditional monitoring, MuestrameAI understands how processes should perform, identifies inefficiencies and their potential causes, and recommends actions to reduce losses, optimize resources, and improve productivity.

By connecting real-time operational intelligence with expert-defined protocols and financial impact, MuestrameAI helps organizations continuously improve performance while maintaining full control of their data through private, locally deployed AI.

We don't just show you your operation. We help you make it better.

Key Features of MuestrameAI

Feature 1. Operational Intelligence

From Raw Data to Smarter Decisions. Transforms operational data into actionable insights by analyzing process behavior, identifying inefficiencies, and revealing opportunities to improve performance.

Feature 2. Expert Knowledge Intelligence

Your Best Expertise, Always Available. Integrates scientific principles, technical protocols, and expert knowledge to support operational decisions and preserve valuable institutional experience.

Feature 3. Root Cause Analysis

Understand Why, Not Just What. Correlates operational variables and process conditions to identify potential causes of failures, inefficiencies, and unexpected performance deviations.

Feature 4. Predictive & Preventive Intelligence

Anticipate Problems Before They Become Losses. Analyzes operational trends and early warning indicators to identify potential risks and support timely preventive decisions.

Feature 5. Intelligent Recommendations

Turn Insights into Action. Generates practical improvement recommendations based on operational conditions, technical knowledge, and potential business impact.

Feature 6. Financial Impact & ROI

Every Improvement Has a Value. Connects operational performance with costs, energy consumption, resource efficiency, and productivity to estimate savings and measure improvement outcomes.

Feature 7. End-to-End Process Intelligence

Understand the Entire Operation. Analyzes relationships across process stages to identify how operational conditions and decisions influence quality, productivity, efficiency, and overall results.

Feature 8. Private & Edge AI

Your Data. Your Intelligence. Your Control. Runs within private infrastructure, enabling local AI processing, data protection, operational independence, and essential functionality without continuous Internet access.

Feature 9. Institutional Knowledge

Preserve Experience. Build Intelligence. Structures expert knowledge, operational protocols, historical decisions, and results to support knowledge continuity and organizational learning.

Feature 10. Industry-Specific Intelligence

Specialized Intelligence for Every Industry. Adapts a common operational intelligence architecture to the scientific principles, critical variables, expert protocols, and economic challenges of different industries.

Our Difference

Others show you data. We show you opportunities.

MuestrameAI connects operational intelligence, expert knowledge, and financial impact to turn everyday decisions into measurable improvements.

MuestrameAI — Turning Data into Measurable ROI.

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