



SECTOR AGUA

How Olmeca improves the control and monitoring of Villahermosa's water system with atvise®

The Villahermosa Water Department evolves from manual operations to real-time monitoring, motor control, and automated reporting with an atvise® SCADA platform developed by Olmeca.

CLIENT:



Excmo. Ayuntamiento
de Villahermosa

PARTNER:



OLMECA
TECHNOLOGY



Vester Business

Project

The Water System Department of the Ayuntamiento de Villahermosa is responsible for both a water treatment plant (planta potabilizadora) and a water intake station (captación) supplying potable water to the entire city of Villahermosa, Tabasco, Mexico. Before this project, the department had no automation, instrumentation, or monitoring infrastructure in place: every process was handled manually, with no mechanism for capturing or analyzing operational data. Operating personnel lacked the tools to keep equipment within optimal parameters, leaving pumps and motors vulnerable to premature failure, and although variable frequency drives and soft starters had already been installed for energy efficiency, their data remained inaccessible and unused without a monitoring layer.

Solution

Olmecca is automating the department's operations in two phases, with atvise® serving as the visualization and supervisory platform throughout. Phase 1, covering the intake station, is already operational, delivering real-time monitoring of PLCs, VFDs, and medium-voltage soft starters. Phase 2 expands the scope to the water treatment plant, adding field instrumentation, motor control for six pumps, database integration, and automated reporting.



Client & Partner

The client is the Water System Department of the Ayuntamiento de Villahermosa, responsible for the water treatment plant and intake station that supply potable water to the city of Villahermosa, Tabasco, Mexico. Olmeca, the Villahermosa-based system integrator responsible for the automation and telemetry layer, is a Mexican technology integration firm focused on developing and implementing new technology solutions through continuous process improvement. The department selected Olmeca based on an established relationship and a demonstrated ability to deliver end-to-end solutions: Olmeca's partner company had already handled the electromechanical installation of panels, control centers, and VFDs on site, and Olmeca layered the automation and telemetry on top of that infrastructure, giving the client a single point of accountability for both disciplines. Olmeca had also previously implemented an atvise®-based monitoring system at the intake station, so the team already understood the existing environment, the hardware involved, and the client's expectations; that combination of prior project knowledge, vertical integration with a hardware partner, and a commitment to post-sale support is what distinguished Olmeca from competitors who, in the words of the project team, tend to deliver a system and disappear.



Objectives



Replace fully manual operation of the water treatment plant and intake station with automated, instrumented processes.



Give operators and management real-time visibility into equipment status and operational data.



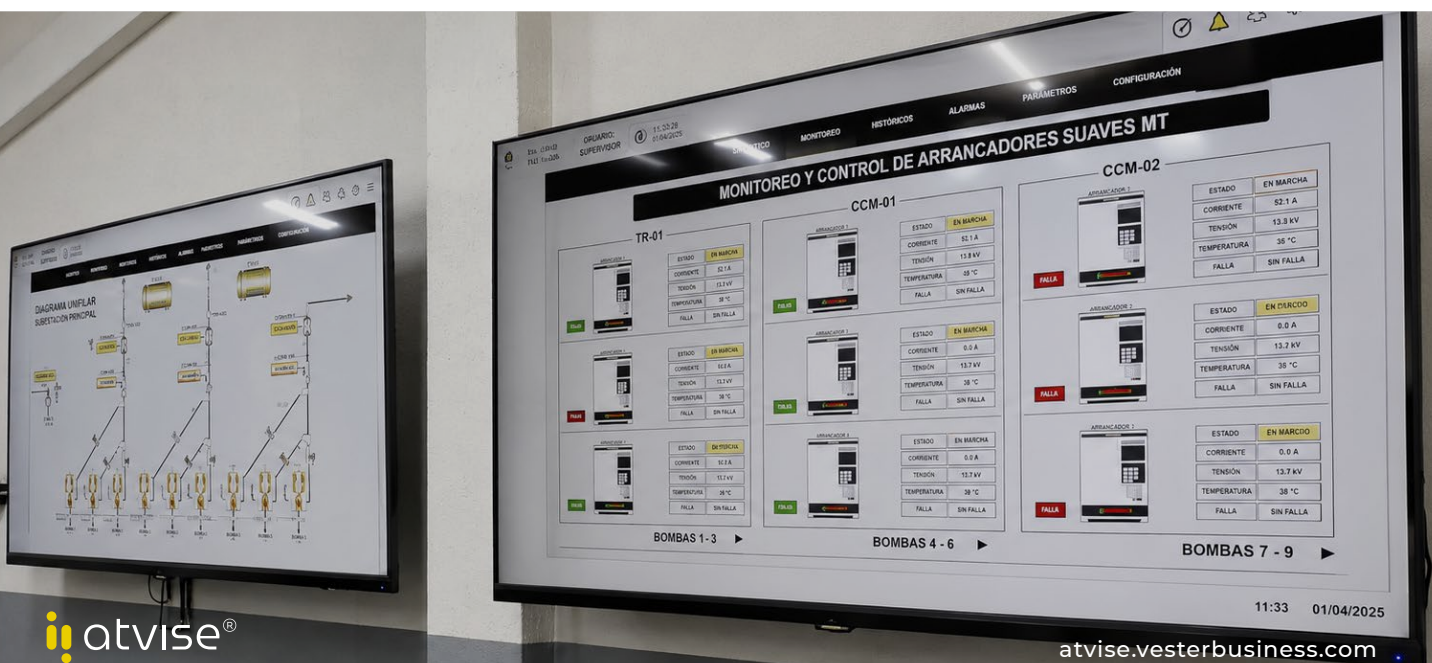
Protect pumps and motors from premature failure by keeping them within optimal operating parameters.



Make the data already generated by existing VFDs and soft starters accessible and usable for the first time.

Challenges

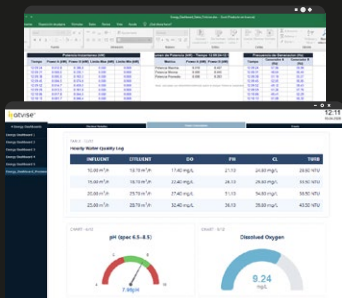
- ❗ No automation, instrumentation, or monitoring infrastructure in place at either the treatment plant or the intake station.
- ❗ No mechanism for capturing or analyzing operational data; every process handled manually.
- ❗ Operating personnel lacked the tools to keep pumps and motors within optimal parameters, leaving equipment vulnerable to premature failure.
- ❗ Variable frequency drives and soft starters had already been installed for energy efficiency, but their data remained inaccessible without a monitoring layer.



Results & Benefits

At the intake station, results are already visible: the site has transitioned from a fully manual operation to a real-time monitored environment, with atvise® providing live data on equipment status and the system communicating with medium-voltage soft starters.

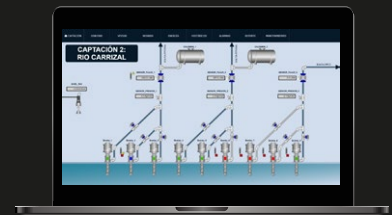
For the full project, expected benefits include:



Transition from 100% manual operations to a monitored and automated system.



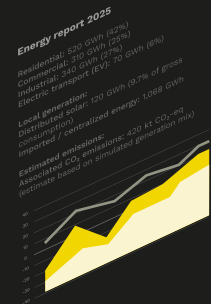
Real-time operational visibility for both field operators and management.



Remote and centralized access for the water system director.



Motor control for six pumps at the captación.



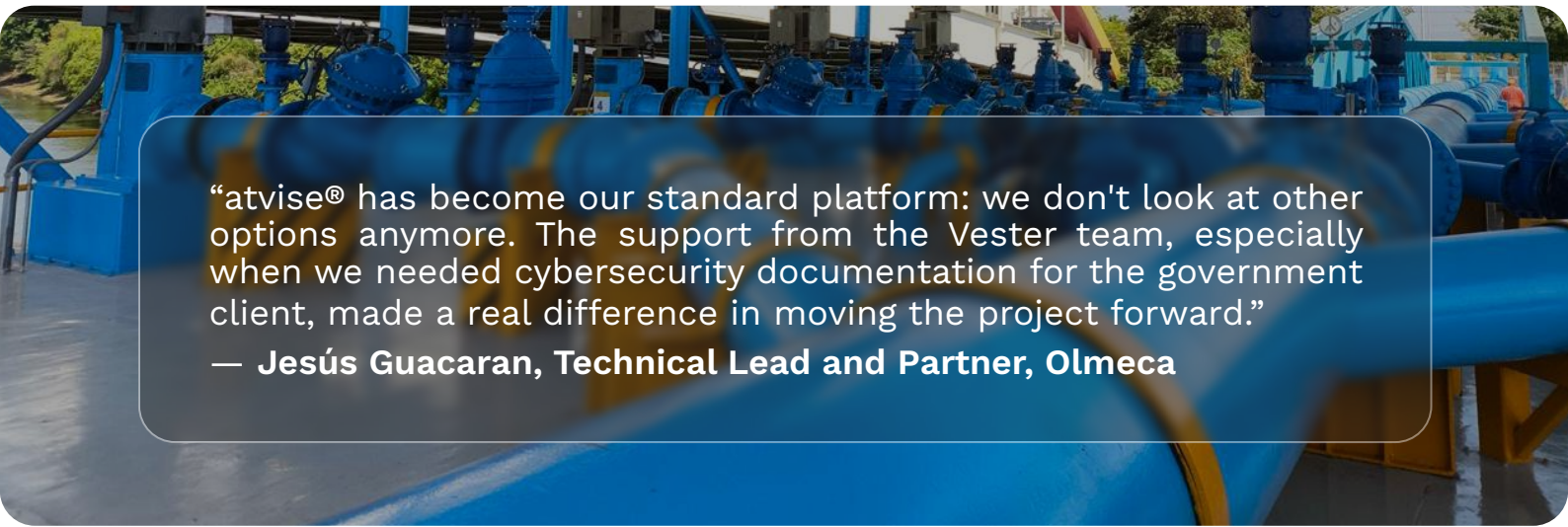
Data-driven decision-making to optimize pump and motor performance.



A clear foundation for future automation and control phases.

Background

Support from Vester spanned several parts of the project, with different technical team members contributing at different stages. The database integration that added reporting and historical data capabilities to the platform came with direct, hands-on support during implementation. When the government client requested cybersecurity information as part of the procurement process, the necessary documentation was supplied directly, resolving an objection that could otherwise have delayed or derailed the contract. At the very start of the commercial relationship, a proof of concept helped Olmeca present atvise® as the right platform for this type of application, laying the foundation for what has since become a standardized choice: Olmeca no longer evaluates alternative visualization platforms, atvise® is their default for this category of project.



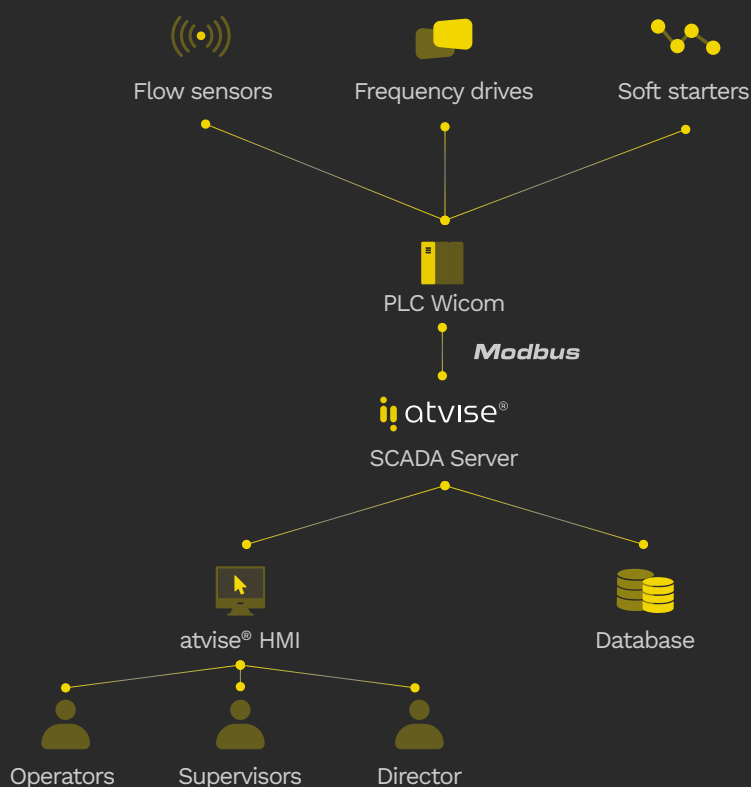
“atvise® has become our standard platform: we don't look at other options anymore. The support from the Vester team, especially when we needed cybersecurity documentation for the government client, made a real difference in moving the project forward.”

— **Jesús Guacaran, Technical Lead and Partner, Olmeca**

The Solution

The project is structured in two phases, with atvise® serving as the visualization and supervisory platform throughout. Phase 1 covers the intake station and is already operational: PLCs communicate via Modbus with VFDs, and atvise® provides the SCADA front-end for real-time monitoring, while also communicating with the medium-voltage soft starters at the site.

Phase 2 expands the scope to include the water treatment plant and upgrades the intake station implementation. Field instrumentation, including flow sensors, is being added from scratch, and the PLC will connect directly to atvise® to reduce communication latency. The upgraded system will deliver real-time data acquisition, supervisory monitoring, automated reporting, and motor control for six pumps at the captación. A database integration is also underway, enabling structured historical data access for operators and management. The project has a target completion of approximately two months from June 2026, with flow sensors expected on site in August.



At the intake station, PLCs communicate with VFDs via Modbus and connect directly to the atvise® server via Modbus, reducing latency. Field instruments, including flow sensors, feed data into the PLCs, and the system also communicates with medium-voltage soft starters. Operators, supervisors, and the water system director access the atvise® HMI for real-time monitoring, and a database is integrated for reporting.

Features Used

- Real-time data acquisition
- Supervisory monitoring
- Motor control (6 motors at the captación)
- Automated reporting
- Database integration
- Direct PLC to atvise® connection via Modbus
- Cloud-based data upload (Phase 1, via vNode)

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Contact

info@vestersl.com

www.atvise.vesterbusiness.com

Vester Business Spain

Av. Cerdanyola 92, 2ª Planta Of. 27, 08173, Sant Cugat del Vallès, Spain

☎ (+34) 93 572 10 07

Vester Business France

672 Rue du Mas de Verchant, 34967, Montpellier CEDEX 2, France

☎ +33 (0)4 13 68 01 06

Vester Business LATAM

Ofimall 3er Piso, Oficina #57, San Pedro de Montes de Oca, San José, Costa Rica

☎ (+506) 2225 2344

