FOOD INDUSTRY

Azucarera connects its industrial plants with SAP in a standardized and secure way

Thanks to vNode®, Azucarera has deployed a robust architecture to integrate OT data via OPC UA with IT systems via REST, improving its operational efficiency, security and scalability in record time.

CLIENT: Azucarera – La vida sabe mejor

vNode

Introduction

The project consisted of integrating real-time data between Azucarera's four production plants and its SAP system, replacing a system based on plain text files and scheduled tasks.

Solution

vNode made it possible to standardize connectivity through OPC UA and REST API, facilitating interoperability with Siemens PCS7 and SAP systems without specific developments. The architecture includes vNode's Reverse Connection and Store & Forward functionalities to maintain OT security and centralized management, achieving operational agility, scalability, and reduced technical effort with each new integration.

Client

Azucarera is a leading company in the production and marketing of sugar, committed to innovation and sustainability in the agro-industrial sector. It has several industrial plants located mainly in Spain and Latin America, where it processes raw materials to supply national and international markets, optimizing efficiency and quality throughout its production chain.

Objectives

Improve security
Secure and standardized integration of industrial plant data with the corporate SAP system, using OPC UA protocols for OT and REST for IT.

Improve system scalability and agility
Allow the future incorporation of new plants or systems, without affecting the stability or security of the infrastructure.

Connect IT with OT
Centralize and unify the management of operational and business information, facilitating decision-making based on accurate and real-time data.

> *"With vNode we have managed to unify and automate critical flows between the plant and SAP, improving response times and operational efficiency.*
>
> - Carlos Camarero, Director of Systems and Security

Main challenges

Disconnection between plants and corporate systems
Azucarera faced difficulties in unifying the operational information of its different plants with SAP, which generated delays in decision-making and lack of visibility in real time.

Security risks and maintenance of custom developments
Previous solutions required custom developments that were difficult to maintain, with risks associated with cybersecurity and reliance on asynchronous ad-hoc solutions.

Complexity in the integration of heterogeneous technologies
Each plant had different systems and protocols, which made it difficult to establish a common and scalable architecture for OT/IT connectivity.

> *The support of Vester Business was key. We had support from the testing phase to deployment in production, with fast response times and effective solutions.*
>
> - Víctor Florín, , IT/OT IT Department, Azucarera

Results

Standardized integration with SAP through OPC UA and REST

The solution made it possible to centralize industrial information from different plants in a single secure and structured access point, improving interoperability and reducing the integration effort.

Increased operational efficiency and real-time visibility

Thanks to the use of vNode, critical production data is available for analysis and decision-making with real-time reporting, eliminating dependencies on manual reporting.

Scalability and simplified maintenance

vNode's modular and standards-based architecture makes it easy to add new plants or systems without the need for custom developments, reducing future maintenance costs.

Reinforcement in industrial cybersecurity

The solution allows precise control of the data exposed to IT, applying isolation and filtering mechanisms that mitigate risks without compromising the availability of information.

Reduced costs by removing additional SAP modules

By using vNode as an intermediate layer of integration, the need to purchase or develop specific SAP modules to connect to industrial systems was avoided, resulting in significant savings in licenses and services.

Background

Azucarera, with multiple geographically distributed industrial plants, faced the challenge of integrating and centralizing operational data in a secure and standardized way.

Their OT systems were isolated and there was no smooth connection to SAP, which made traceability difficult, led to inefficiencies and increased operational costs.

The need to make agile decisions, based on real-time information, drove the search for a robust, scalable solution that is compatible with complex industrial environments. The main challenge was to establish an architecture capable of interoperating between heterogeneous technologies, guaranteeing security, reliability and ease of maintenance.

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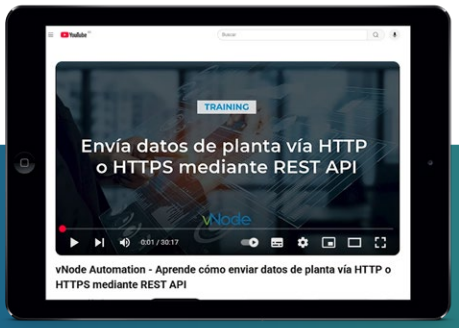
Solution

The solution implemented was based on the deployment of vNode as an industrial connectivity platform in four Azucarera plants. Thanks to its ability to communicate with a wide variety of OT devices and systems, vNode made it possible to standardize the capture of data from PLCs and SCADAs and convert them into SAP-compatible structures. This flexible and robust middle layer acts as a bridge between industrial environments and corporate systems.

One of the keys was the use of protocols such as OPC UA and REST API. OPC UA is an open industry standard that enables secure, structured communication between devices and software, regardless of manufacturer. REST API, on the other hand, made it easy to send processed data to SAP through lightweight and scalable HTTP calls. The combination of the two ensured interoperability, flexibility and efficiency.



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Everything essential
in one video

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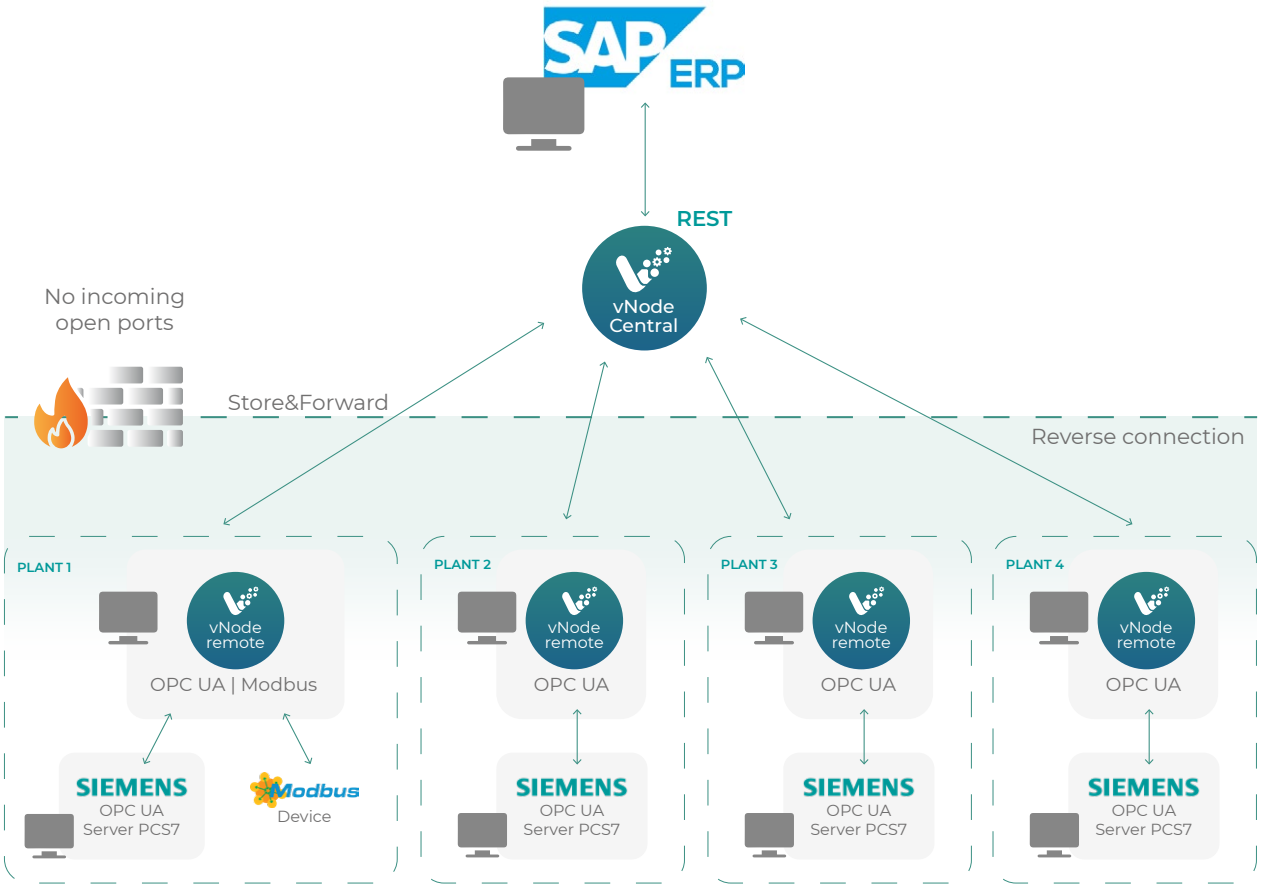
The designed architecture allows control to be centralized from the central ERP, maintaining secure and real-time synchronization with multiple plants. It highlights the elimination of custom developments, the reuse of configurations between sites and the ease of maintenance.

This solution reinforces the value of modern industry standards as the foundation for sustainable, modular, and outcome-driven digital transformation, all thanks to vNode and Vester Business support.

> *"The vNode architecture allowed us to keep our OT networks completely isolated from external access, complying with the most demanding industrial cybersecurity standards."*

-Víctor Florín,
IT/OT IT Department, Azucarera



vNode Modules Used

- OPC UA Client
- Modbus Client
- REST API Server
- REST API Client
- Historian
- Linked Tags

Featured vNode features

- Reverse Connection
- Store&Forward

Meet vNode

> *Thanks to vNode, we avoided the use of additional modules in SAP and reduced the internal development effort. This allowed us to save on licenses and implementation times.*

-Carlos Camarero,
Director of Systems and Security
Azucarera

Sales Contact:

info@vnodeautomation.com
sales@vnodeautomation.com
saleseurope@vnodeautomation.com

Vester Business USA
1549 NE 123 St, North Miami, FL, 33161,
United States
+1 (754) 755-0009

Vester Business Spain
Av Cerdanyola 92, 2da Planta Of 27, 08173,
Sant Cugat del Valles, 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 Costa Rica
Ofimall 3er Piso, Oficina #57,
San Pedro de Montes de Oca, San José,
Costa Rica
(+506) 2225 2344