

# Digital transformation in a prestigious cosmetic factory: **Traceability optimization with vNode Automation**

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How INGAUT and Vester Business revolutionized Data Management at the production plant for pallet traceability through the implementation of vNode Automation.

PARTNER: **INGAUT**

CLIENT: Cosmetic Industry (Burgos, Spain)

## Project

The implementation of vNode by INGAUT at the cosmetics production plant located in Burgos, Spain, revolutionised the traceability of production batches, modernising the system and providing a scalable and efficient solution.

## End Customer

A prestigious brand, a global leader in the beauty and cosmetics industry, was looking to optimize its traceability and control production more efficiently.

## Integrator Partner

INGAUT, specialists in industrial integration, bring their expertise and solutions to improve industrial processes and operational efficiency for Industry 4.0.

## Solution

vNode is an advanced Industrial IoT Gateway, a cutting-edge solution developed by Vester Business and implemented by INGAUT. This innovative software allowed the replacement of an outdated Visual Basic application, providing scalability, flexibility, and connectivity between IT and OT in the cosmetics factory.

Products used:



*"vNode has revolutionized our industrial data management, **ensuring secure and reliable transfer** between networks through advanced features such as Reverse Connection and Store & Forward. Now, serving as our common industrial data platform, vNode provides us with **organized and structured information** from any source. Its versatility allows us to easily adapt our data structure to the continuous improvements we implement in our production process. With vNode, we have **found the essential tool to enhance efficiency** in our factory."*

- End Customer, Engineering and Innovation Department.

## Goals

### Optimization of Traceability

Improve traceability and control of production by replacing an obsolete Visual Basic system with vNode to ensure efficient data management.

### Scalability and Flexibility

Implement vNode to achieve a scalable and flexible solution, allowing for future expansions and adaptations to changing needs in the production plant.

### IT and OT Integration

Facilitate data movement between IT and OT departments by replacing the closed Visual Basic application (black box), enabling centralized control and more efficient management.

### Increase Data Security and Reliability

Ensure data security and reliability by migrating from a custom solution to vNode, providing a more secure, manageable, and adaptable environment in the long term.



## Main Challenges

### Integration with Existing Infrastructure

Overcome the complexity of integrating vNode with the IT infrastructure (atvise® SCADA, Apriso MES system) and various OT data sources (OPC UA servers, Siemens PLCs, Modbus devices, BACnet devices, getting Sigfox sensors data from the Sigfox Cloud using REST API) existing at the factory, ensuring a smooth and efficient transition



### Adaptation to Specific Requirements

Address the challenge of adapting vNode to meet the specific requirements of the production plant, especially in terms of traceability and data control, ensuring a customized and effective solution.

### Training and Adaptation to the New Environment

Face the learning curve and adaptation to the new vNode environment, especially for users and technicians accustomed to working with the previous Visual Basic application.

### Management of Continuous Changes and Updates

Effectively managing the ongoing changes and updates in the project, ensuring compatibility and stability of the system as the needs of the production plant evolve.

## Results



### Smooth Collaboration between IT and OT:

Facilitate smoother communication between IT and OT departments by adopting vNode, overcoming the barrier between these two worlds and providing a unified working environment for data management.



### Optimization of Traceability and Control:

Achieve significant optimization in traceability and production control by replacing the obsolete Visual Basic application with vNode, allowing more precise tracking of boxes associated with pallets.



### Greater Efficiency and Scalability:

Attain greater operational efficiency and scalability by implementing vNode, facilitating the addition of new data without the limitations of the previous application, contributing to a more flexible and adaptive environment.



### Modernising Technological Infrastructure:

Replace old software applications consolidating and modernizing the technological infrastructure of the cosmetics factory with the successful implementation of vNode.



## Background

Before the implementation of vNode, our end client faced significant challenges with an application in Visual Basic. The lack of mastery over the application and its closed nature limited efficiency and scalability.

According to the interviewee from INGAUT: "with the system they were using, it was challenging to fully exploit the data." This custom system, although it fulfilled the basic function of transferring data from the PLC to an SQL database, presented significant obstacles.

Adaptability was low, making collaboration between IT and OT departments difficult, and the lack of technical support raised concerns about reliability and security.

The need for modernization and flexibility led to the search for a more robust and adaptable solution, resulting in the successful adoption of vNode. As highlighted by David Velasco from INGAUT, *"the implementation of vNode has not only provided the power of the tool itself but has also enhanced our capabilities, allowing us to develop and execute projects more efficiently and with greater adaptability."*

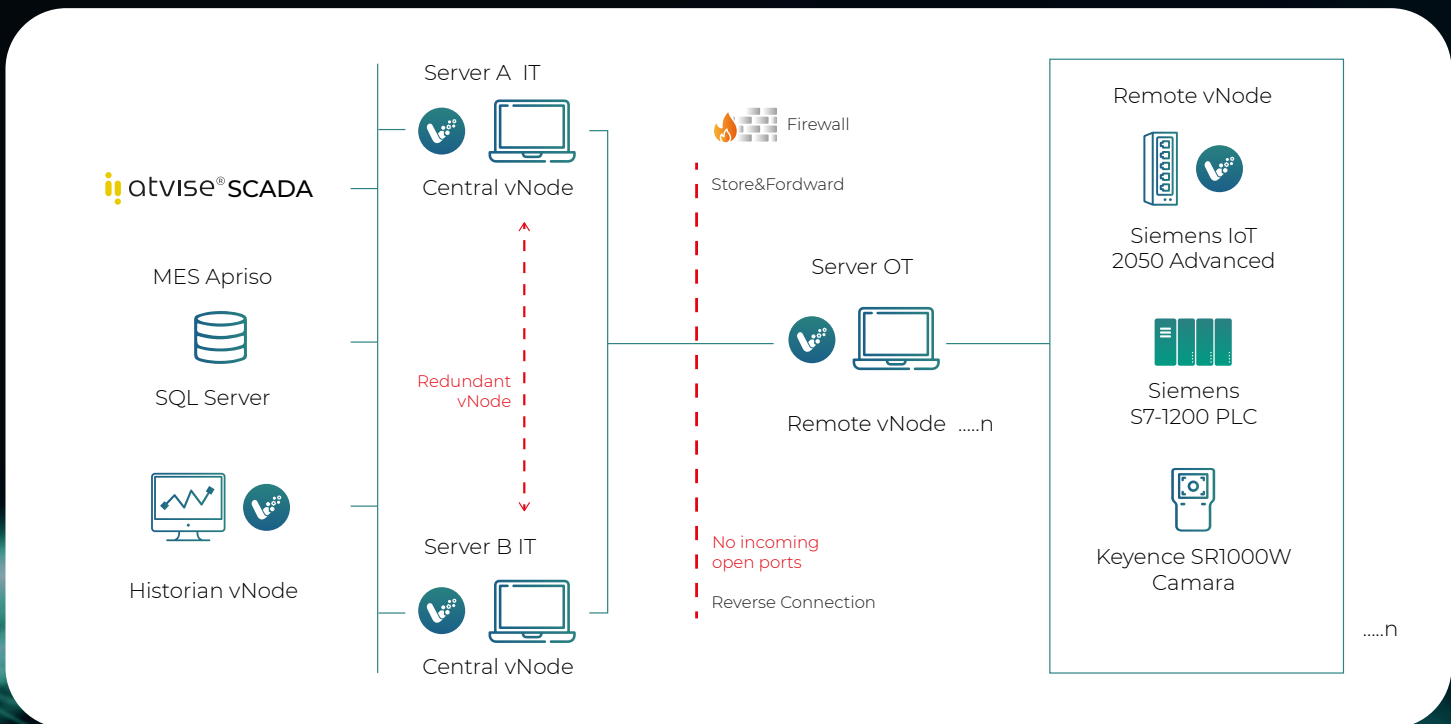
## Solution

The solution architecture includes 4 levels of vNode. At the base, INGAUT's level with a Siemens PLC 1200, a vNode installed on a Siemens IoT 2050 Advanced with a 4-core processor and 2 GB of RAM running on Linux (Debian), followed by the vNode on the line, another vNode at the factory, and finally, the Central vNode and Historian at higher levels where the Apriso MES system is located.

This stratification allowed for efficient and centralized hierarchical data management. All data concentrated in vNode is monitored by the end customer with atvise® SCADA, which replaced an old application.

The project was implemented on two production lines, evolving from conception to its current state on other lines. The successful implementation of vNode was crucial, as highlighted by the interviewee, *"without an application like vNode, it couldn't be. Implementation times were notably efficient: the physical installation of the last two lines was completed in approximately a day and a half, with operational startup in a week. vNode's agility was evident in the process, where software configuration took only five minutes."*

## Download the solutions for free



*"Being able to integrate vNode into an OT device, such as a Siemens IoT, is a very good thing. I don't have to set up an industrial computer, or anything outside of what should go in an electrical panel. Our end customer has its servers on Windows, we have our vNode on Linux, and communication is perfect between them."*

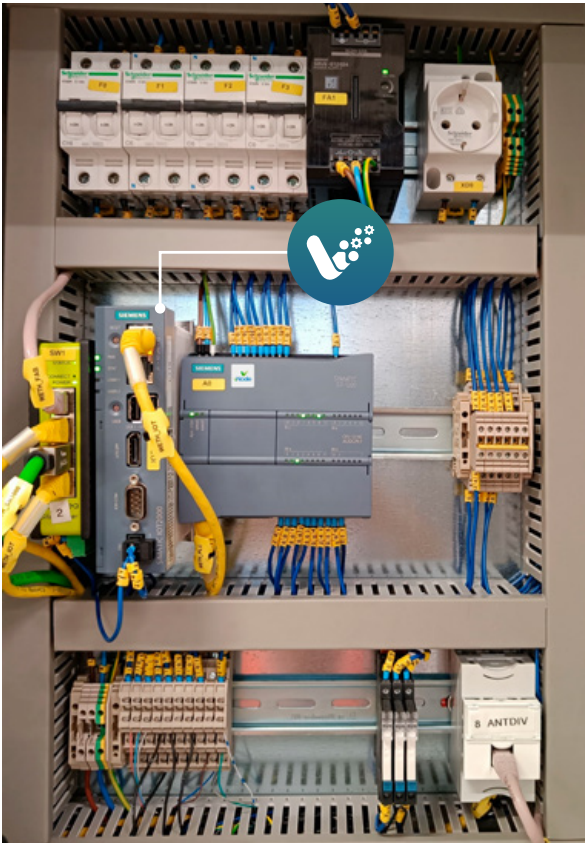
- David Velasco, Project Manager, INGAUT.



## Solution

The learning curve was managed effortlessly thanks to vNode's user-friendly interface and the team's familiarity with JavaScript programming. Although technical training was received later, adaptation was straightforward due to the resources available, the clarity of vNode manuals on the website, and constant support from Vester Business.

According to David Velasco from INGAUT, *"the vNode learning curve is short, and the training received will expand the potential of vNode for future projects. What I find most outstanding in vNode is its ability to simplify data from OT, which is often complicated for people in the IT area who are not familiar with such software and find it difficult to understand. In the end, PLC programming is nothing like what you can program in JavaScript, Python or similar. So, with vNode you can unify them or bring them as close as possible."*



### vNode IoT Gateway

- OPC UA Server
- SQL Client
- Historian
- Scripting Module
- Siemens Client
- OPC UA Client
- Custom Client
- Rest API Server
- MQTT Client
- BACnet Client
- Modbus Client
- Derived Tags
- Redundancy Agent

 [Download vNode](#)

### atvise® SCADA

- atvise® SCADA standard
- 1 fixed client
- 1500 CCDs

 [Download atvise® SCADA](#)

*"When your customer has a requirement that involves the IT department, vNode presents itself as an ideal solution to communicate both worlds. What I like most about vNode is that it communicates the IT world with the OT world, which is always a struggle we have internally with all clients, and vNode solves it for you."*

- David Velasco, Project Manager, INGAUT.

## Solution

Positive quotes from our interviewee reflect the effectiveness of the solution. The ease of programming, scalability, and smooth data communication between IT and OT departments are notable aspects of this project. Data security and reliability were highlighted as fundamental elements, especially with vNode's Store & Forward functionality, eliminating concerns about data loss in case of communication outages.

David Velasco, Project Manager at INGAUT, emphasizes, *"the Store & Forward functionality of vNode is very useful for us because we don't worry about data loss, and in terms of security, the Reverse Connection functionality because we don't have to open ports in firewalls or anything like that."*

*"We link the two vNodes, and we know that the data will arrive securely. We can completely disregard it."*

Finally, INGAUT emerged as a key partner in the project. The ability to adapt to the vNode interface, efficiency in problem-solving, and continuous support were essential to the project's success. The effective collaboration between INGAUT and Vester Business overcame technical challenges and delivered a robust solution tailored to the needs of the factory in Burgos. The importance of INGAUT as a strategic partner in this project highlights the synergy between technical knowledge and technological solutions.

## Partner

# INGAUT

INGAUT is a company specializing in integration engineering and industrial control, turning ideas into realities since 2005. With a highly qualified team, it offers services ranging from process design to certification and training, standing out for its dedication to innovation and adaptation to Industry 4.0.

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