SUCCESS STORY

From Outdated Hardware to Scalable Software: vNode Modernizes Connectivity in the Energy Sector

Implementation of vNode and SDG as preferred software solutions to guarantee connectivity in a power generation plant in the Iberian region.

PARTNER: HEXA INGENIEROS

CLIENT: SIEMENS energy

vNode

Project

Modernization of connectivity between a Siemens PLC and a Schneider SCADA in a power generation plant, replacing discontinued Siemens hardware with vNode as a flexible, secure, and scalable software solution.

Solution

Successful implementation of vNode IoT Gateway and SDG to capture power, current, and voltage data from a Siemens S7-400 PLC and deliver it to the existing SCADA using the IEC61850 protocol ensuring continuity of communications in a critical infrastructure.

Integrator Partner & End Customer

The end customer is an electricity generation plant located in the Iberian region, which operates with diesel and gas engines. Hexa Ingenieros, with more than 20 years of experience in automation, led the project with the technical support of Vester Business.

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Challenge

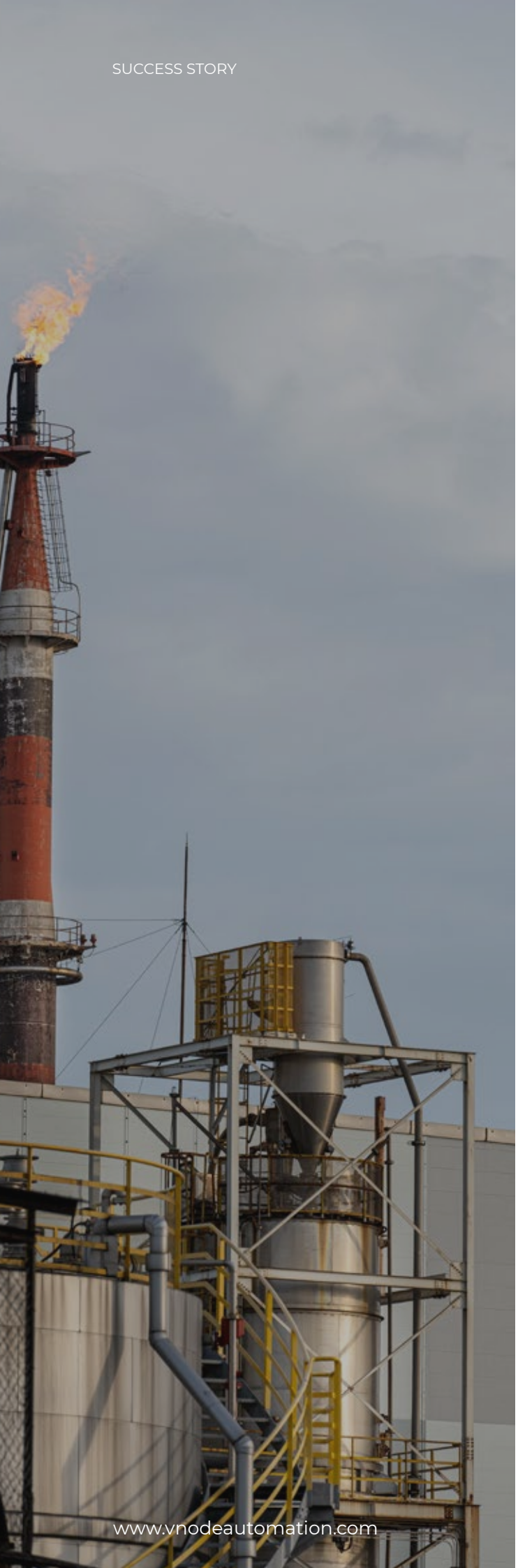
The power plant faced a critical challenge: Siemens' hardware for converting from S7 to IEC61850 protocol was discontinued and frequently failed, requiring constant restarts, which put operational continuity at risk. In addition, the client needed a scalable and secure solution for future needs.

Solution

After technically validating the solution and together with the technical support of Vester Business, Hexa Ingenieros implemented vNode Automation and SDG from Triangle Microworks. This combination allowed the capture of data from a Siemens S7-400 PLC and its delivery to the Schneider SCADA via IEC61850.

> *Not only did vNode solve our customer's outdated hardware problem, but it also provided us with a scalable and easy-to-deploy solution. Vester Business' technical support was key to the success of the project.*

-Angel Jiménez,
Hexa Ingenieros



The architecture of the project included:

vNode IoT Gateway

Capture data from the Siemens S7-400 PLC via the S7 Client module and deliver data to SDG via OPC UA.

Triangle Microworks SDG

Acted as an OPC UA client to read data from vNode and as a slave IEC61850 to serve the data to the Schneider SCADA.

Virtual Machine

Both software packages were installed in a virtual machine with Windows 10, 4GB of RAM, 2 virtual cores and 60GB of hard disk.

Implementation Process

The setup process included importing a SCD file to register the signals in SDG and link them with vNode. The process in vNode was done by importing variables into their web configuration environment, which is easy and intuitive.

vNode is a Plug&Play software that does not require advanced programming knowledge. Installation and commissioning were completed in minutes and a unified namespace was created to facilitate data interpretation by system managers.

Future Benefits

Future-Proof: Scalability and Flexibility with vNode

Scalability
vNode allows you to add more signals and connections without limitations, adapting to future plant needs.

Continuous Updates
vNode will not be obsolete, as it is constantly updated, ensuring its long-term relevance.

Flexibility
As a software solution, vNode avoids dependence on specific hardware, reducing costs and recovery times in the event of failures.

New Device Integration
With more than 50 modules and 30 protocols, vNode makes it easy to add new devices and systems.

Software used:

- vNode IoT Gateway
  - S7 Client
  - OPC UA Server
- SDG from Triangle Microworks
  - OPC UA Client
  - 61850 Slave

Download vNode

Conclusion

The implementation of vNode and SDG not only solved a critical connectivity problem but also provided a scalable and secure solution for the future. This collaboration between Hexa Ingenieros, Siemens Energy and vNode Automation demonstrates how software innovation can transform critical infrastructures, ensuring efficiency and reliability.

"Thanks to vNode and SDG, we can ensure the operational continuity of the plant with reliable and real-time data. The scalability of the solution allows the end customer to adapt to future needs without worrying about obsolescence."

-Angel Jiménez, Hexa Ingenieros

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Meet vNode in 1 minute

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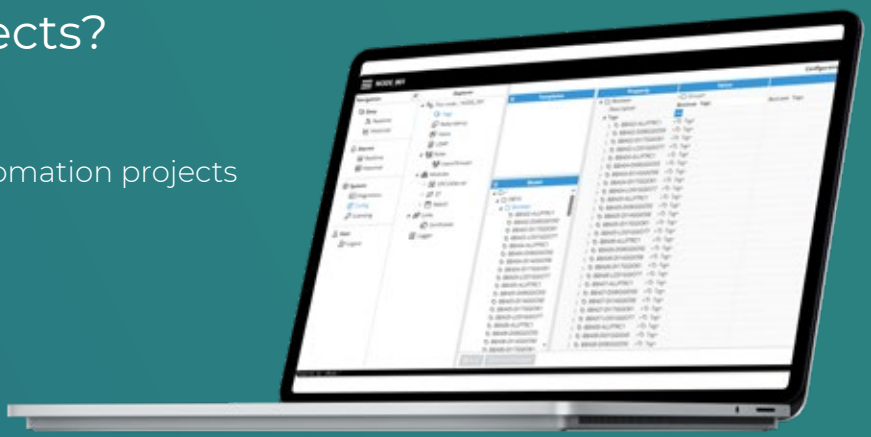

Partner

Hexa Ingenieros is a company specialized in process automation and the development of information systems to improve industrial supervision and control through advanced technology. With more than 23 years of experience, it offers innovative solutions, 24/7 support, and customized consulting services to optimize its clients' operations.

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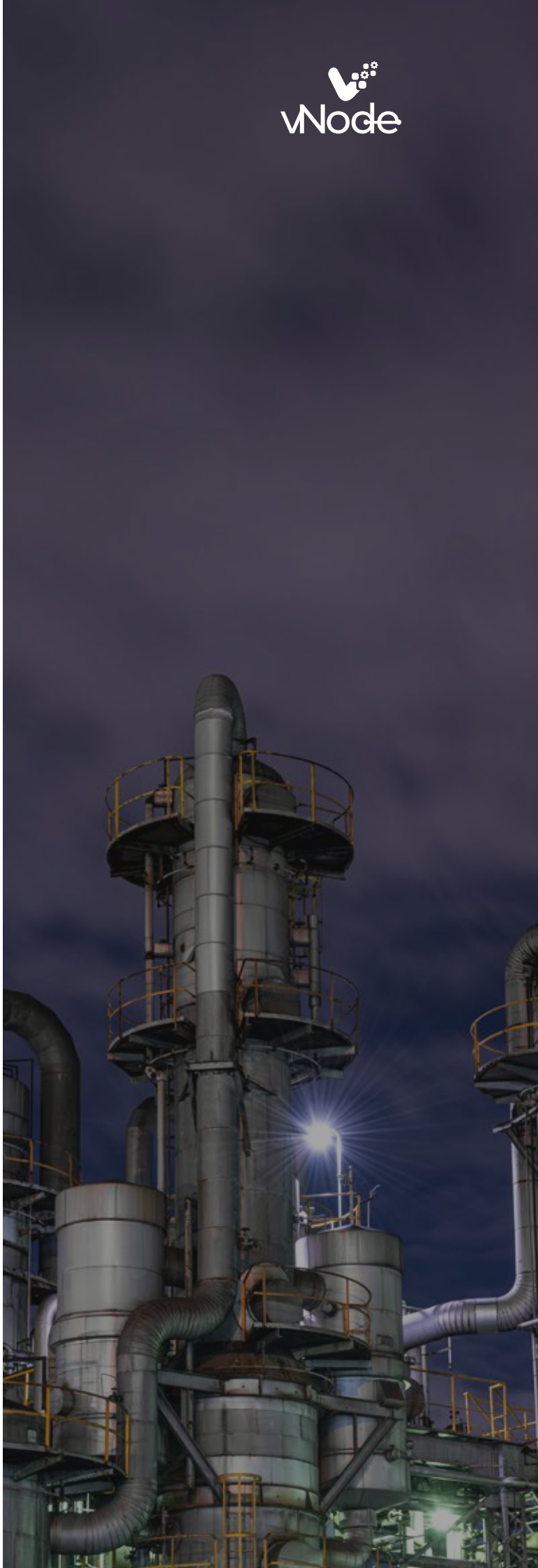

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