Independence Through Better Warehousing

Ethernet-APL in an agricultural cooperative

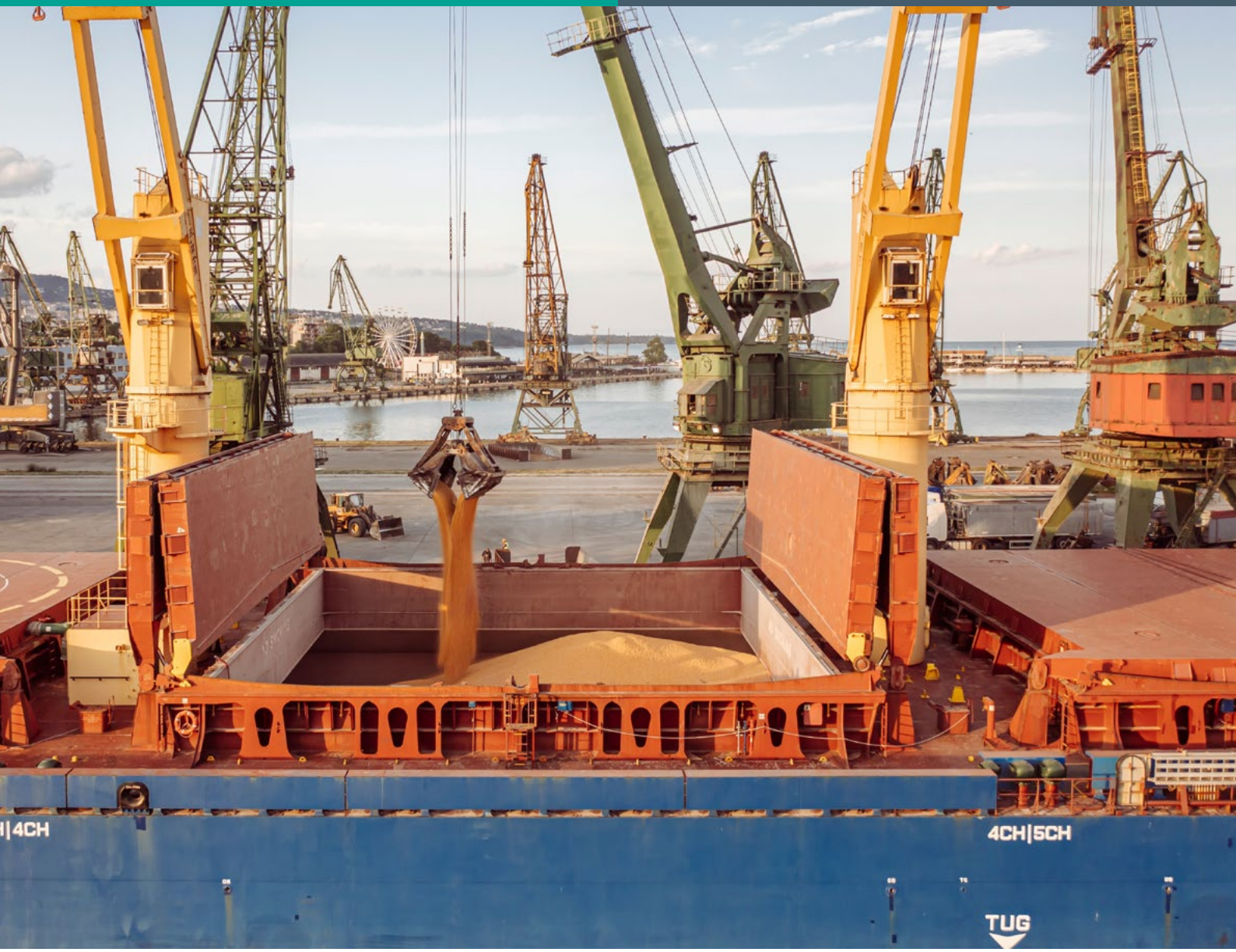
At a Glance

Robust function

- Clear topology of direct routes
- Electrical isolation between individual field devices
- Easy installation and configuration

Compatibility and reliability

- Proven seamless interaction with components from different manufacturers
- Integrated physical-layer diagnostics
- Remote access to every field device
- Time savings over the entire life cycle of the system



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A large agricultural cooperative in South America manages the industrial marketing of produce from 30,000 farmers. The service concept includes the temporary storage of raw, intermediate and end products in order to sell them when market prices are higher.

The Application

Everyone in the agricultural sector of that country knows the cooperative, which was founded 1970 as an initiative of several dozen local farmers. Since then, the cooperative has become the largest player in the country's agricultural produce market. Today, it consists of tens of thousand associated farmers from multiple producing regions.

The product portfolio ranges from seeds, coffee beans, wheat, soy and maize to animal feed, cotton and finished products such as domestic coffee. These products are temporarily stored in a nationwide network of silos and then marketed at the best possible sales price depending on market requirements.

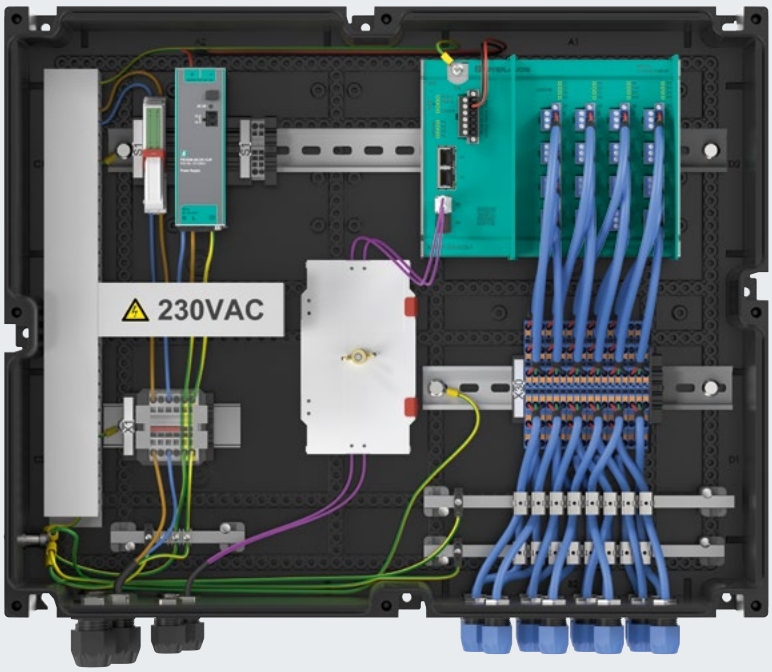
In a pilot project located in a strategically located port of the country, the aim is to test Ethernet-APL in conjunction with a storage silo for raw products, including the associated loading and unloading equipment.

The Goal

The system operator wanted to gain initial practical experience with Ethernet-APL. The experience gained will therefore be crucial for other similar projects. The main focus will be on a planned large-scale plant for the production of bio diesel. Only if the results of using Ethernet-APL are positive will the planned investments be released.

In order to gain first-hand experience, the project was carried out entirely internally by the company's own employees. The three main objectives are as follows:

- Robust installation through separation between individual field devices
- Easy configuration of the entire instrumentation
- Reliable installation with clear diagnosis of the physical layer



The Solution

The user was particularly interested in perfect electrical isolation between instruments. Ethernet-APL requires a topology with point-to-wiring between field devices and switches, which offers extremely good protection against crosstalk and other interference between individual instruments. This was one major aspect that fully convinced the client.

This topology is not only easy to understand in every respect. It also allows extremely simple and error-free handling during installation and maintenance. It also eliminates the risk of unintentional system downtime during maintenance work.

Pepperl+Fuchs delivered FieldConnex Ethernet-APL switches for installation in the control room cabinets. The Ethernet interface provides unrestricted remote access to each individual field instrument. The switch monitors the physical layer and thus ensures a flawless installation.

Pepperl+Fuchs demonstrated to the customer how Ethernet-APL works perfectly with a third-party field instrument. The device was recognized without any problems and identity information was read out. This was followed by compatibility tests with devices from Endress+Hauser, Pepperl+Fuchs, Smar and Siemens, which also demonstrated completely problem-free plug-and-play behavior.

The Advantages

Ethernet-APL allows smooth interaction with established Ethernet-based industrial protocols and technologies such as Profinet that is utilized in this installation. The team experienced a steep learning curve and developed a good understanding of the problem-free integration and the new application possibilities of Ethernet-APL.

The user became aware of the time savings that Ethernet-APL opens up over the entire life cycle of a process plant. He was also convinced by the significantly simplified planning, installation and commissioning. The opportunities for using Ethernet-APL in the construction of a far more complex large-scale plant for the production of bio diesel have thus come within reach.

