



## Case Study

Nordgetreide GmbH & Co. KG

Ethernet instead of PROFIBUS:  
More quality and convenience  
in food processing



noax industrial PC's with Ethernet replace PROFIBUS terminals

## Quality, flexibility and efficiency in cereals processing

Cereal in the bowl, add milk, done. While it only takes seconds to prepare yourself a healthy snack, most people have no idea of the complex, highly sensitive processing that is necessary to transform the natural materials they contain – maize, wheat, barley, or rice – into tasty cereal products. Lübeck, Germany-based Nordgetreide GmbH & Co. KG is one of the few manufacturers

"Thanks to their 24 V option, the noax IPCs work in perfect harmony with the machine environments."

that understands the importance of producing cereal products of consistently high quality. To meet growing

demand, the company built one of Europe's most modern multigrain processing lines in Falkenhagen, Germany – and the machines in the plant are precision-controlled using noax industrial PC's.

### More transparent, more intelligent: noax IPCs instead of PROBUS terminals

„We have eliminated the diversity of the manufacturer-specific PROFIBUS terminals and now intentionally use IT standards for process visualisation. The robust and reliable noax industrial PC's are networked via standard Ethernet. And with their 24 V option, the IPCs work in perfect harmony with the machine environments", says Jörn Schlifke, project manager at brüggesch, the engineering firm contracted to plan the project. For Jörn Schlifke, the use of standard PC technology for plant control is nothing short of a paradigm change – all made possible by the high quality and reliability of the noax solutions. "From silo to packaging, the cereal production process takes 16 hours. 24 hours a day, 7 days a week, Nordgetreide manufactures

2 tons of various raw cereal grains into processed cereal products an hour. That means that around 4,000 boxes of cereal leave the plant in Falkenhagen every hour. Production is stopped only for two days every four weeks for cleaning and maintenance", says Jörn Schlifke of brüggesch, describing the completed state of the "Falko" project.

### Reliable: noax industrial PC's in operation 24/7

Running the new plant 24/7 demands that all IT components are particularly robust and reliable. Any downtime places the ability to control the plant, its productivity, and the quality of the products at risk. noax industrial PC's have shown that they meet these requirements in detail, with high-quality components and particularly solid construction. noax industrial PC's make it possible to use a variety of IT standards, which bring

additional advantages for both operation and maintenance. These include the ability for Nordgetreide's IT experts at the company's Lübeck headquarters to access the noax IPCs remotely, quick and cost-efficient replacement of components, and implementation of access control and user rights. With "Falko" and the EUR 20 million that has been invested, Nordgetreide hopes to achieve more than just additional production capacity for further growth: The retail sector demands a wide variety of products and continuous innovation to cater to differing target groups. The product range includes products for children and young people, stressed managers, athletes, the wellness-oriented and calorie conscious, and industrial customers of cereal-based breadcrumb coatings. To handle this product range, combination plant control is used to alternate between multigrain and rice products on the same production line. Engineering firm brüggesch created an innovative



Bright touchscreens: all process parameters can be controlled and optimised directly at the workstation

*With Project „Falko“, which stands for Falkenhagen Combination Line, Nordgetreide GmbH & Co. KG commissioned one of the highest-capacity production lines for high-quality multigrain foods in Europe. Engineering firm Brüggensch, which was contracted to plan and coordinate the project, realised a plant that sets new standards for transport systems, machine arrangement and IT concepts. The new plant features noax industrial PC's and uses the Ethernet standard to replace the Babylonian diversity of PROFIBUS terminals for the machines.*

*At the heart of an innovative plant: noax IPCs with Ethernet and 24 V option*



plant and IT design with which to realise this: the switching cabinets for the various mixers, cookers and dryers are located on a catwalk that is raised as an intermediate level between the floor and the ceiling and used as a pathway. The machine level beneath it appears spacious, tidy, and somehow transparent – and this transparency snakes through the plant and its IT concept like a leitmotif.

### IP65 (NEMA 4) compliant enclosure – mountable anywhere

Jörn Schlifke underlines the benefit of this IT concept in terms of production process quality: "The plant design and Ethernet networking allow the noax IPCs to be separated from the switching cabinets and installed directly on the production floor. Due to their sealed, IP65 (NEMA 4) compliant enclosures, we were able to mount the noax devices in locations where the operating personnel can see or check the result of each process step." With the semi-processed cereal product still in hand, operating personnel can read temperature, length, mixing ratios and other quality-relevant process parameters from the large, bright noax displays and optimise these parameters directly and easily via the touchscreen. Process transparency has been permanently increased across all machines: Instead of saving only small amounts of selected data onto the small, very limited storage media supported by standard machine terminals, the new plant supports sending machine and process data to the noax IPCs immediately and saving it on large, traditional storage media or sending it directly to the SAP system. This allows the supervisors to create trend analyses for all relevant process parameters. The recorded data can be used internally or sent

to Nordgetreide's quality-conscious customers in the form of QA reports without considerable effort. "Customer reports and traceability are a must in the food industry. Nordgetreide is able to provide these, and additionally assign its costs for energy, water and compressed air to individual products and batches without additional work", says Jörn Schlifke, giving an example of the newly acquired transparency and data quality.

### Quality saves money

Even Project Falko's construction schedule was a challenge: There were only 6 months between the budget approval in June 2007 and the start of shell construction on January 1st. A further 6 months later, the plants were installed and the new plant started trial operation in July 2008. "The necessary add-ons were made while production continued in the old part of the plant. Larger installations, such as IT, transport systems, compressed air and ventilation, could only be carried out every four weeks during maintenance periods – then, everything had to go exactly to plan." The modern IT concept with noax IPCs proved itself even during the commissioning and trial operation phases: Machine data was successfully transferred over WLAN to the engineers' laptops, so that they could conveniently check to see whether the commands given triggered the desired machine action or not from their location, without walking long distances between the switching cabinet and the machine. "As a professional working in a 24/7 production environment, you rely on experts and high-quality, robust IT components. When you are working with such complex plants and projects, everything simply has to work. You

achieve the greatest savings by avoiding mistakes and delays. We, and our partners, consider our cooperation with noax to have been successful based on the smooth construction and implementation phase alone," says Jörn Schlifke. And the after-sales service? "I can't say anything about noax's service. We've simply never needed to use it. The noax industrial PC's have been working absolutely reliably since they were installed."

**"I can't say anything about noax's service. We've simply never needed to use it."**



*Reliable 24/7 operation: noax IP65 (NEMA 4)-compliant IPCs control production around the clock*



## Nordgetreide GmbH & Co. KG

### Company Profile:

Nordgetreide GmbH has been carefully processing maize, wheat, barley, and rice to make high-quality foods since its foundation in 1966. Its 400 employees currently generate turnover of EUR 120 million, and that figure is growing. Nordgetreide operates a plant at its headquarters in Lübeck, Germany and two additional plants in Saarbrücken and Falkenhagen, Germany. In 2007/2008, the company built one of Europe's most modern processing plants for multigrain products at its Falkenhagen site.

For more information, please visit: [www.nordgetreide.de](http://www.nordgetreide.de)

## Specifications and Application

### Objectives:

- ✓ Machine control for food processing
- ✓ Replacement of PROFIBUS terminals by standard IT systems
- ✓ Machine data acquisition (MDA) and transfer
- ✓ Flexible positioning of operating devices along the production line

### IPC Requirements:

- ✓ Suitability for use in food processing plants
- ✓ Completely sealed, IP65 (NEMA 4) compliant enclosure
- ✓ Suitability for use in machine environments with 24 V supply voltage
- ✓ Compact construction with bright displays
- ✓ High-quality components

## Overview of Components

### Hardware:

- Industrial PC Steel S15
- In-house developed noax all-in-one motherboard
- Input: particularly robust touch panels
- Bright, high-contrast TFT display
- Protection class IP65 (NEMA 4)
- Completely sealed, without external fan

### Software:

- Operating system: Windows XP
- Control software developed in-house

© noax Technologies  
Case Study arranged 2008

### Headquarters

noax Technologies AG  
Am Forst 6  
85560 Ebersberg (Germany)

Tel. +49 8092 8536-0  
Fax +49 8092 8536-55

noax Technologies Corporation  
5265 Parkway Plaza Blvd. Suite 110  
Charlotte, NC 28217 (USA)

Tel. +1 704 992-1606  
Fax +1 704 992-1712

**noax**<sup>®</sup>  
Technologies

**For worldwide locations, visit: [www.noax.com](http://www.noax.com) or email [info@noax.com](mailto:info@noax.com)**