



## Case study

Silesia Gerhard Hanke GmbH & Co. KG

Stainless steel industrial PCs control  
and display processes in the  
production of flavors



noax industrial PCs offer the crucial advantage in safety and stability for the production of liquid and powdered flavors

## Reliability for complex production processes in damp and dusty environments

Although almost all of us are touched by Silesia's products on a daily basis, they are not in the spotlight. Silesia Gerhard Hanke GmbH & Co. KG produces flavors that are found in almost all industrially produced foods including, in lemon cake mixes, in fruit yogurt, in gummy bears, in ice cream, in bullion cubes, and in the spice mix for gyros. Everyone

is touched by Silesia. The pharmacist Otto Strauhns soon realized that there would be a great future for sweets and candies. At company headquarters in Düsseldorf and then in Neuss where

Silesia moved later, he first produced toffees, caramels, lozenges, chocolates, or fruit fillings for pralines. Flavors were always necessary, and he had to produce them too. This was the foundation for the company's present day direction. In 1999, the entrepreneurial family established the second plant in Germany in Kalkar in the Lower Rhine region. There they built a state-of-the-art production facility that boasted the latest technology. This includes noax industrial PCs (IPCs). The employees rely on noax computers to control the processes and to retrieve important product information.

### Process control via touchscreen

One of the employees, Dirk van Holt, is an electrical engineer responsible for process automation. He points to the hall that separates two production areas, "Look, the left side is sweet. That's where only sweet flavors are produced. For example, you find them in cakes, desserts, puddings, or similar. The right side is savory." The production processes do not differ on either

side. Different ingredients are weighed exactly, measured, mixed, boiled, distilled and packaged. At first the distillates obtained are in liquid form, but with the help of a special process, liquid flavors can also be converted into a powder carrier substance, which offers more processing possibilities. At Silesia, most of these processes are automated, as a result, noax industrial PCs play an important role. With their help, van Holt's colleagues operate the production equipment and stay informed of their current status. The touchscreen of the IPCs serves both as a user interface and as a display medium. "In addition to the operation, process visualization is the second main task of the noax industrial PCs," explains van Holt, "and our employees

can intervene as soon as something does not go according to plan." All the machines in the company are displayed on and can be operated from noax industrial computers. The advantage: The devices can be used independently of each other. For its software, Silesia uses SAP R/3 with an add-on that was developed specially for the flavor producer as well as for the process control software. The latter manages more than 20 system components, including a multi-component measuring system, mixers, flavor boiling units, and several weighing areas. The process images, order lists, selective component lists, active measuring processes, and the current status of the production and filling of the containers are displayed on noax IPCs in



*Employees clean the production equipment daily with water, detergents, and disinfectants. Thanks to their completely sealed design, noax IPCs can withstand the washdowns and continue to work reliably*

Good should taste even better. This is the motto of Silesia Gerhard Hanke GmbH & Co. KG. For over 100 years, this family business has been producing flavors for the food industry. At the turn of the millennium, Silesia built a plant at their Kalkar location with the most advanced production equipment. noax industrial PCs are an integral part of this equipment. They help the employees control the systems and retrieve important information concerning the real-time status of production. The ruggedness, longevity, and completely sealed construction of the noax industrial PCs with no gaps or joints perfectly satisfy the high demands of the food processing company.

Complex chemical processes demand reliability and stability. The rugged noax PCs work safely and offer the desired process reliability



real-time. For its hardware, Silesia uses 15-inch and 19-inch industrial PCs from the noax Steel Series line of rugged computers. They feature a completely smooth, stainless steel surface without gaps or joints. As a result, bacteria, fungi, and other microorganisms that could, if exposed, do not spoil or damage the valuable flavors. Van Holt states explicitly that he and his colleagues attach great importance not only on a construction that is free of gaps, but also on hardware that is dustproof and waterproof. There are numerous dust particles in the air throughout the facility as a result of the some of the flavors being converted into power carrier substances. According to van Holt, "That is why we choose noax PCs. They offer up to IP69K protection rating which prevent dust particles from entering and damaging the PCs."

### Ten years continuous operation

"For us, the completely sealed and guaranteed waterproof design was a real deal breaker. The noax industrial PCs satisfy this requirements," explained van Holt and he then continued, "After every production, we clean the rooms and equipment, including the industrial PCs thoroughly! They are sprayed with a cleaning foam, and then washed down again, sometimes under high-pressure water. This wet cleaning is a sign of quality. In addition, we disinfect our equipment every cleaning. This is why we have attached importance not only on the construction of the industrial computer, which cannot have gaps or joints, but also on the requirement that the PCs are dustproof and waterproof." Another benefit the noax PCs is that they can be easily operated even with gloves on - without issue! This is a crucial feature of the noax IPCs since most of the em-

ployees at Silesia are required to wear gloves daily while working. Van Holt is also impressed by the longevity of noax industrial PCs. "We ordered our first noax IPCs in 2007, and today, after more than eight years of operation,



The noax touchscreen industrial PCs help employees by providing a manageable display and easy operation

they continue to run soundly," explained van Holt. Before implementing the noax industrial PCs, Silesia used other hardware to control their machines and for process visualization. However, their previous hardware had consid-

erable shortcomings. The previous hardware had ventilation slots which were exposed to the outside environment, thus allowing the hardware to become filled with dust resulting in shorter life spans. With failing ventilation of the previous equipment comes constant servicing. As a result, Silesia was generating high costs due to the lack of full capacity production. This situation could not go on forever. As a result, the decision-makers at Silesia decided to replace this equipment with the rugged and reliable industrial PCs by noax.

### Improved safety

Unlike products made by other manufacturers, noax industrial PCs are completely sealed, and resistant to water, dust, detergents, and disinfectants. In addition, noax industrial PCs can also withstand the fluctuation of extreme temperatures. Furthermore, the computers from Ebersberg have a microcontroller unit that monitors important functions and informs operators immediately as soon as the values for safe operation are exceeded. Such functions include write cycles on

the memory device, the state of the CMOS battery, and much more. This unique noax tool also ensures the operating reliability of the industrial PCs and thus the process reliability of production. Because of their stability, noax IPCs will be used not only in Kalkar, but also at other locations. "The reason is quite simple," indicates van Holt, "we have had a good experience with noax industrial PCs. Why should we take our chances with an unfamiliar product with an uncertain outcome?"

"We ordered our first noax IPCs in 2007, and today, after more than eight years of operation, they continue to run soundly."



## Silesia Gerhard Hanke GmbH & Co. KG

### Company Profile:

Silesia Gerhard Hanke GmbH & Co. KG of Neuss (near Dusseldorf) was founded on July 1, 1910, and has now been in business for more than a hundred years. The pharmacist Otto Strauhs originally planned a factory for fine liqueurs, but during World War I specialized in the production of distillates and flavors. Today the family business is represented by its subsidiaries in 18 countries on three continents. Silesia produces its natural and nature-identical food flavors at four locations worldwide. Silesia has approximately 510 employees, 100 of which work at the Kalkar location.

For more information, please visit:  
[www.silesia-aroma.com](http://www.silesia-aroma.com)

## Requirements and Applications

### Objectives:

- ✓ Precise control over operations for product quality
- ✓ Visualization of the current processes in real-time
- ✓ Timely warning of malfunctions
- ✓ Documentation of orders for tracking purposes

### IPC Requirements:

- ✓ Use in the productions of liquid and powdered flavors
- ✓ Maximum reliability under extreme conditions
- ✓ Protection against cold, extreme temperature fluctuations, high humidity
- ✓ Protection of components against high-pressure water
- ✓ Easy-to-read touchscreen displays
- ✓ Easy, intuitive operation by employee

## Overview of Components

### Hardware:

- S15 and S19 Industrial PCs
- Self-developed noax all-in-one motherboard
- Input: particularly robust touchscreen
- Bright, high-contrast TFT-display
- Protection class IP65 (NEMA 4), IP69K (NEMA 6)
- Completely sealed, no external fan

### Software:

- Operating system: Windows 7 Professional
- SAP R/3 including customer-specific SAP module PP-PI (production planning for the processing industry)

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