

Zenchenko IK

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Yogurt, Milk, Kefir,
Sour Cream and
other dairy products.

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Cost-effective Modernization of SCADA system

CHALLENGE

- To create an automated system to collect data from across the entire dairy, including the milk supply, flash pasteurizer, tank farm, and CIP- station (cleaning) sections from four independent PLCs.

SOLUTION: FactoryStudio

- With the localization and language switching capabilities of FactoryStudio, operators are able to learn how to use the system in their native language more quickly.
- The FactoryStudio engineering environment provided state-of-the art tools which reduced the time needed to develop the SCADA system to just three weeks.

RESULTS

- *“All my questions to the Tatsoft support were answered within 24 hours. Without attending a single FactoryStudio training class, I was able to finish the project successfully!”* - Alexander
- KSA was able to save additional money on the project by using the embedded-encrypted SQL database file that comes with FactoryStudio for all data-logging.

Zenchenko IK is a producer of Yogurt, Milk, Kefir, Sour Cream and other dairy products. The Milk-plant is located in Petropavlovsk, Kazakhstan. They recently expanded their operations and built a new factory to increase their capacity.

To provide the plant-wide SCADA system, Zenchenko contacted KSA (<http://www.ksa-artern.de>), located in Germany, to be the prime contractor for this project. KSA has a long record of successful small to mid-sized projects in the food industry (fruit and milk processing). KSA brought in Alexander Berthel of Berthel Automatisierungstechnik (www.atberthel.de) for his PLC and HMI expertise.

According to Alexander *“I selected FactoryStudio from Tatsoft for the project, because of the modern technologies at its core, and my desire to get away from using old legacy products like InTouch or WinCC. I wanted to work with a really new product. KSA trusted in me to choose the right software to serve the purpose, and FactoryStudio greatly satisfied our needs.”*

About the processes: There are four main processes in the plant. In the milk supply process, milk is delivered to two tanks. Key information from those tanks include temperature, level, and a total of the milk processed. Each process has its' own Siemens S7 PLC with a local HMI for operators to run the systems (Start/Stop Processes, set some Parameters, etc.)

In the flash pasteurizer process, all the milk from the milk supply is heated to reduce the germ count. All the milk has to pass the pasteurizer prior any other production step. If the milk doesn't have the right (high) temperature it will go to circulation to pass the heating section again.

This process has the highest impact on the product quality and safety. Additional heating and mixing operations take place in the tank farm where the milk, cream, and other products are stored. Finally, the CIP (clean-in-place) operations clean all pipes, tanks and heaters.

About the project requirements: The challenge for KSA was to create an automated system to collect data

from across the entire dairy, including the milk supply, flash pasteurizer, tank farm, and CIP- station (cleaning) sections from four independent PLCs.

The goals of this project were; 1) to provide an overview of the operations for the Production Manager, Foreman and office personnel, away from the production areas where it is wet and not a good environment for PC-Stations; 2) Generate production and efficiency reports for the pasteurization of milk and cream, the heating process in the yogurt process tanks, and a record of the CIP settings for acid or caustic or both.

The reports also demonstrate the proper heating and thermal processing and procedures were followed. The CIP data is helpful for the operators to know what they have already cleaned each day and to provide proper historical documentation.

Why FactoryStudio? With the localization and language switching capabilities of FactoryStudio, operators are able to learn how to use the system in their native Russian, German, or English language more quickly.

The FactoryStudio engineering environment provided state-of-the art tools which reduced the time needed to develop the SCADA system to just three weeks.

Features like the ability to copy and paste configuration tables to and from EXCEL helped to create tag, alarm, and data collection parameters more efficiently than adding them one-by-one.

The FactoryStudio Symbol Library provided graphical objects ready to use in displays and reports. Because the symbols are linked to the library, global changes to the symbols are quickly implemented across the entire project.

The FactoryStudio alarming technologies are used to show all alarms and status messages of each device (measurements, pumps, valves,..) and to archive them in a central location. Because FactoryStudio is an integrated suite of tools including all graphical display, data collection, .NET scripting, system diagnostics, report generation and native PLC communication drivers, no additional software was needed to complete the project.