TATSOFT

Cargill Feed Safety Research Center (FSRC)

Part of the O.H. Kruse Feed Technology Innovation Center

The FSRC is the only hazard level II feed research center in the world.

FactoryStudio helps improve the quality of animal feed.

CHALLENGE

- The goal is to monitor the equipment throughout the facility and within potentially contaminated

SOLUTION: FactoryStudio

- FactoryStudio from Tatsoft was chosen due to its ability to run from mobile devices such as iPads and iPhone.

- FactoryStudio has a native ControlLogix communication protocol driver so there is no need for a third party interface.

RESULTS

- *"I can't tell you how many people have come through this building. International groups are very interested. We like showing it off. The system is a big change from what we had; everybody appreciates it quite a bit."* Said Joel McAtee, the Feed Mill Manager of the O.H. Kruse Feed Technology Innovation Center.

- By equipping personnel with the iPad, not only are they able to modify feed production variables, but they are able to do so while on the move or even from the cleanliness of a quiet classroom.

At the Kansas State University Cargill Feed Safety Research Center (FSRC), part of the O.H. Kruse Feed Technology Innovation Center, several thousand domestic and international feed industry professionals have participated in educational short courses and seminars provided by the Feed Science and Management (FSM) program. The faculty has been a source of problem solving and new technological information throughout the program's history. The program has been fortunate to have a dedicated teaching and research feed mill available on campus for student and faculty use.

The FSRC is the only hazard level II feed research center in the world. This provides unique feed research opportunities that cannot be duplicated elsewhere. It looks at different blends of animal feed with the purpose of identifying opportunities for improving feeds in the process. While developing the feed, pathogens such as salmonella are introduced. Then, experiments are conducted to develop methodologies for extracting or eliminating the pathogen from the feed. All of this is done with best practices for food safety in mind.

Due to the presence of salmonella and other bacteria in the feed production area, it was important to be able to control the system remotely if need be. The prevailing method allows for the use of an iPad, which is protected in a disposable plastic bag that seals shut. That way, users can carry it around through the environment, and when the user is done, the plastic shield is disposed of in the decontamination area.

Steam is infused with ground up corn and then pressed into pellets which are later used to feed animals like cows, pigs, goats and sheep on the KSU campus' farm.

The system is used to find out if the food has been infected with salmonella and if the process used adequately eliminates that salmonella. System parameters are modified to examine the effects that it has on the quality of the feed. There are two VFDs that control the speed of the feed conditioner and operators have the ability to start and stop any piece of equipment.

KSU partnered with The Lakeland Companies to provide the automation system integration for the project. Three software solutions were reviewed for use on this project and FactoryStudio from Tatsoft was chosen due to its ability to run from mobile devices such as iPads and iPhones.

The goal is to monitor the equipment throughout the facility and within potentially contaminated environments. iPad tablets in plastic covering were to be used as the interface solution.

By equipping personnel with the iPad, not only are they able to modify feed production variables, but they are able to do so while on the move or even from the cleanliness of a quiet classroom.

FactoryStudio has a native ControlLogix communication protocol driver so there is no need for a third party interface. The ability to use all the tags and data structures as they are defined in ControlLogix greatly reduces the time by eliminating the need to manually configure them in FactoryStudio.

Because many students will be working in feed and grain related industries after graduation, the hands-on learning opportunities that they will receive while at the FSRC are invaluable to their future careers.

While the new research center benefits teachers and students at KSU, there are compelling reasons why the industry as a whole benefits as well. Large companies are starting to take advantage of the FSRC by hiring teachers and students to do feed safety research on their behalf. This will result in the long-term improvement of feed and food safety by not only improving the production of feed, but by also fostering those learning opportunities for future industry leaders currently attending KSU.

The Lakeland Companies volunteered over 1200 hours of engineering services for the overall project.

According to Mark Spindler of the Lakeland Companies, which donated their time and talent- *"The ability to develop the HMI screens for use on Windows computers and then easily deploy them to iPads and iPhones without additional engineering was fantastic!"*