A Tale of Two SCADA Conversions

Profile: J.D. Irving, Limited Doaktown Sawmill in New Brunswick

Over the past five years, J.D. Irving, Limited Sawmill Division has invested $70 million in the latest operational equipment as part of their continuous investment in sustainable forest management strategies. In 2015, the company chose VTScada monitoring and control software to replace the aging SCADA systems used in their biomass boiler and trim line processes. Jody Gallant, an Electrical Engineering Technologist for JD Irving describes the some challenges and benefits of implementing a modern industrial SCADA system.

J.D. Irving, Limited's Doaktown Sawmill located in Doaktown, New Brunswick, produces 25 million fbm/year of Eastern White Pine lumber for retail building supply, home renovation, and industrial applications. Jody Gallant, Electrical Technologist at the sawmill describes his position this way, "I work for the maintenance department at the mill. Under the maintenance team I provide ongoing support for the existing electrical and automation systems at the plant. I also look after upgrades and additions to the system."

Two SCADA Upgrade Projects - In 2015, Gallant and the maintenance department team began converting two existing SCADA (supervisory control and data acquisition) applications to VTScada software. "I liked its ease of use, data logging, reporting, and support, says Gallant. "Not enough good things can be said about Doug and Jennifer [on the VTScada support team]. They are both very helpful, and super-fast to respond. Also, my past experience with VTScada made it an easy choice." Gallant was introduced to the software when he worked as an integrator with ShadComm Industrial Control and Automation.

Project 1 - The Biomass Boiler - The biomass boiler uses wood material leftover from the milling process to heat the site as well as the kilns that cure their lumber. VTScada replaced two different SCADA systems that were logging data over the network from Allen Bradley® PLC5 units connected to the boiler. "The primary system, was ADI's proprietary SCADA system which was installed when the boiler was built. The secondary system was installed by my predecessor and is Allen Bradley FactoryTalk® View."

"The main issue was support," says Gallant. "The biomass boiler is a critical piece of equipment in our plant, and it required a reliable and supportable control system. The ADI system was obsolete and could no longer be supported." VTScada maintains backward compatibility which means that even applications built with older versions can still be brought up to date with little effort. "The FactoryTalk system was the machine edition and had limited reporting and logging capabilities." Out-of-the-box, VTScada includes all core SCADA components needed for a fully functional SCADA system.

Installation began in December of 2014, and finished just after Christmas. The new system consists of a single PC running a VTScada Development Runtime license which supports both application development and operation.

"The design of the boiler controller was based strictly on the existing system," says Gallant. Using 'The Idea Studio', VTScada's built-in drag-and-drop graphic toolset, Gallant created a familiar operator interface.

Project 1 – The Trim Line - "Our Trim Line monitors the lumber as it goes past our Graders, and into our Trim Box. It helps control the associated saws, gates, and bins to keep the lumber going in the right direction," says Gallant. "The new system is an operator friendly 'recipe' style control system, which allows operators to setup for production runs much more efficiently."

The design process for this project was more intensive. "We met with the supervisors multiple times to detail the existing system strengths and weaknesses. We developed the PLC and HMI software in parallel, meeting with the operators and supervisors regularly to receive direction."

The application consists of a single runtime license running on a different PC than the boiler. It also includes an Internet client that allows a networked user to access the application from a PC that does not have VTScada installed. The main Runtime interface will be used by operators for run monitoring and setup, and the thin client will be used by managers to run reports required to track efficiency.

The second SCADA conversion will be completed in April of 2015.

Benefits

"With the new systems we will be able to make changes in house to the trim line system," says Gallant. "Prior to this, the proprietary control system required the manufacturer to make even minor changes. This will allow much more versatility in our production. If we want to change our cut solutions, or track more data, we can now do it. We are looking forward to taking advantage of this in our ongoing cost savings initiatives."

"We expect the additional data will allow us to fine tune our process. The boiler, on the other hand, has allowed us to more closely monitor our trending," says Gallant. "We added totalizers on steam flow, and are now able to correlate steam flow and demand. The operators are able to make better decisions on how to operate the boilers."

Future Plans

"Our plans are to continue the upgrades throughout the plant. We are currently using PI ProcessBook screens in various locations to provide operator feedback. The refresh rate is slow, so we are looking at implementing VTScada to allow more real time data."

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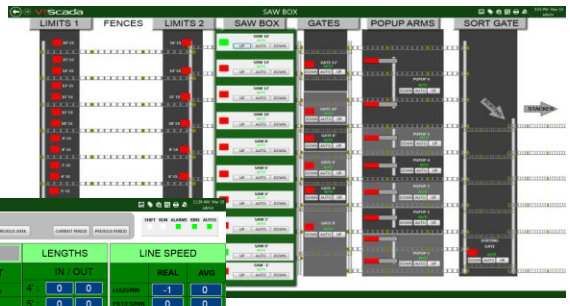

Screenshot of the Saw Box

Screenshot of Trim Line Overview

Screenshot of Bins

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