Cogent Real-Time Systems Inc.

Motiontronix - South Africa
OPC DataHub Helps Eliminate Downtime and
Save $21,000,000

Motiontronix, a Wonderware Certified Systems Integrator in Johannesburg, South Africa eliminated at least 30 days of downtime, saving their customer over $21,000,000 in lost production value by using the OPC DataHub together with Software Toolbox's TOP Server OPC Server. This software combination allows an old and new control system to operate in parallel and share information so operators always know what is happening during a changeover. Motiontronix expects similar projects at larger sites to yield savings of over $57,000,000.
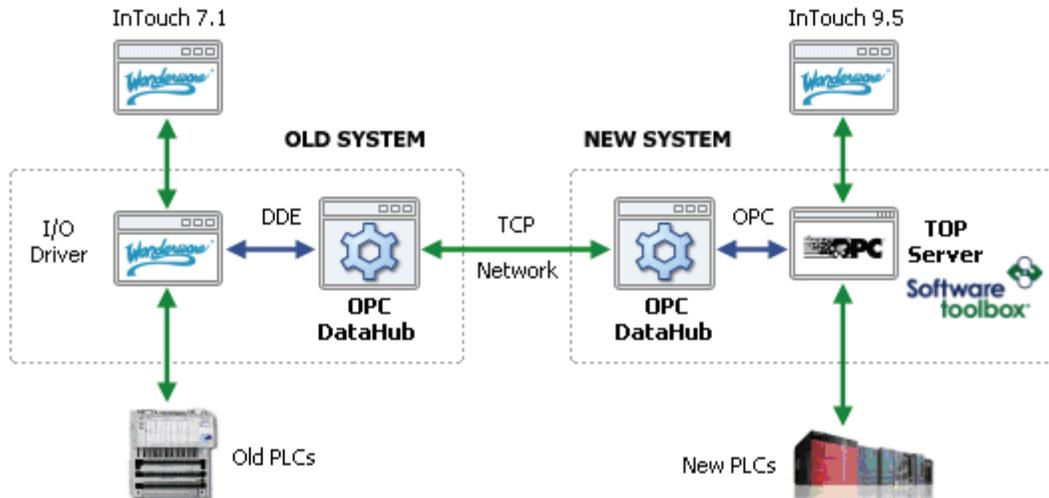
The Problem
Motiontronix's customer, a large food-processing mill, operates day and night. Recently they needed to upgrade their control system from old Modbus serial devices to new Mitsubishi Q series PLCs. Previously, this kind of upgrade took round-the-clock shifts working for four days because the old and new systems could not communicate in parallel, and lost production had to be minimized. This meant extra costs, and errors due to sleepless nights. Worse still, when an operator selected an operation from the old system during the changeover, operators and engineers testing the new system could not see the changes.

"The overall system normally consists of about 7 to 8 PLCs with approximately 3500 I/O points," said Rudi Van Der Merwe of Motiontronix. "Assuming you take just one minute on each I/O point for checkout you need about 60 hours to change from the old to the new system if there aren't any problems. Reality is there are always problems so changeovers take even longer. Production time lost in the conventional method would have been a minimum of 1.5 to 2 months."

What Motiontronix needed was a way to check the new system before taking the old system offline. An ideal solution would maintain all tags, and allow each PLC to be replaced in turn, running in parallel with the old system until the changeover was complete. In effect, what they needed was a temporarily redundant system that would allow switch back and forth from the old to the new, if necessary.

The Solution
Working with Cogent's Sales and Technical Partner, Software Toolbox, Rudi was able to use their TOP Server with the OPC DataHub to achieve all of these goals. He configured Software Toolbox's TOP Server Mitsubishi Suite driver with its SuiteLink and OPC interfaces to provide data to the new InTouch application. And he used two OPC DataHubs to aggregate and distribute data from both the old and new PLCs, which allowed the two SCADA systems to share data sets. All of this was done without using DCOM, a key consideration for reliability and ease of configuration.

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InTouch 7.1

InTouch 9.5

OLD SYSTEM

NEW SYSTEM

I/O Driver

DDE

TCP Network

OPC

OPC DataHub

OPC DataHub

TOP Server

Software toolbox

Old PLCs

New PLCs

Rudi connected one OPC DataHub by DDE to the existing system's Wonderware Modbus I/O server. He connected the other OPC DataHub to the TOP Server on the new system. Then he established a tunnelling connection between the two DataHubs. This provided a real-time data link over TCP, completely eliminating the hassles and reliability issues of DCOM. With tunnelling in place, the OPC Data Hubs were able to map data between the old and new systems as changes occurred.. Thus the new SCADA system could run concurrently with the old one, using an identical data set.

"With the OPC DataHub and Software Toolbox's TOP Server the changeover is quick, and does not slow the overall system down," said Rudi. "We do not have to rewrite tags, which makes it possible to change each PLC as we like and keep the systems running in parallel. The other big advantage is that if you encounter any problems with the new system you can switch back to the old system within 15 minutes, almost like a totally redundant system. Compare no production loss to 30 days production loss-it means $21,000,000 in savings for our client on a small mill."

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The OPC DataHub is a highly optimized integration tool for real-time data. It provides quick, reliable and secure access to valuable process and production data and makes it available to management systems, database archives, and remote clients. Combining a number of innovative technologies, the OPC DataHub makes it easy for you to access the real-time data you need to make informed and timely decisions that save time, reduce waste, and increase profitability.

Founded in 1995, Cogent Real-Time Systems is the leader in real-time data integration between Windows, Linux and QNX systems. Customers include the Bank of Canada, Cadbury Chocolate and the European Space Agency. Cogent leverages its experience in real-time data communications to provide the next generation of OPC products. For

more information, please contact Cogent at info@cogent.ca or visit our web site at www.opcdatahub.com. You can also call us at +1 (905) 702 7851.