The new mixer used in Rütgers Organics' solvent recovery application is monitored from a central control area using Ethernet, Profibus-PA and -DP and AS-i to check items, such as calibration drift, feedback linkage, and control valve wear, travel, sticking and open/close status.

Integrated fieldbus alleviates solvent recovery bottleneck

To help monitor and control a new solvent recovery mixer, Janan Van Fossan, electrical and instrumentation specialist, Rütgers Organics Corp. (Augusta, Ga.), spent months researching available fieldbuses to help reduce wiring to transmitters and valves on the mixer's hot oil system.

He polled other manufacturers, conducted online and literature searches, and then invited several suppliers onsite, borrowed some equipment for a month, and ran them on a desktop-based test bench he built using applicable interface cards. "I explained to the reps that I wanted to see if their solutions could function with my process without actually connecting to it, and every one was glad to help," says Mr. Van Fossan.

Rütgers Organics is a 20-year-old contract chemical manufacturer that annually produces 750,000 pounds of specialty bulk solids for agricultural, pharmaceutical and other customers. .

Mr. Van Fossan's small team eventually settled on a network topology that included an Ethernet backbone, Profibus-PA and -DP for its field devices, and AS-i for binary devices. They also opted for Siemens Energy & Automation's (Alpharetta, Ga.) Simatic PCS 7 control system.

"Siemens had the best control system flexibility for us. For example, they had the high-speed communications we needed between our PLCs and remote controllers," says Mr. Van Fossan. "We were also able to minimize distance over AS-i by installing Profibus DP with an AS-i gateway closer to the field. We had dramatic savings in wire, terminations and labeling, as well as in all the hours formerly needed to install them."

The new fieldbus also fulfilled Rütgers' requirement for quick changes to its equipment to complete orders. Its quick reconfiguration capabilities are also helping the recovery system solve its previous bottleneck by reducing processing time by 12-14 hours.

Material, installation and configuration savings totaled $25,000, which represented combined savings of 60% in labor and 50% in materials over traditional hardwiring, says Mr. Van Fossan. "We found that we were able install a new control system for less than it would have cost to upgrade our existing system."