

## MANUFACTURING



### A Tin Plating System That's Worth It's Weight in Gold

*Avid Solutions takes an outdated, underperforming electroplating system and turns it into an efficient, state-of-the-art, well-oiled machine that will stand the test of time.*

#### Background

The client is a full-service fabrication, machining and electroplating operation that has been providing finished components to a wide range of manufacturers since 1986. They were long overdue for an upgrade for their existing tin plating system, which is an automated line with the capacity to plate up to a 12-foot busbar. Years ago, the system was designed and installed by an OEM of electroplating equipment. That company has since gone out of business. This custom-compiled Visual Studio 6 application had reached its end-of-life status in 2005; plus, it ran on a Windows 98 platform, which reached its end-of-life status in 2006. Since the client didn't have access to the source code for the system, it was impossible to upgrade the application and platform. For years, they managed to keep the system alive by virtualizing the original computer which ran the application, but this drastically limited their options for upgrading the increasingly aging controls and hardware that interfaced with the software. After many years of workarounds with this electroplating system, the client reached out to several different vendors and system integrators, and after careful consideration, chose Avid Solutions to take on the project. After all, they had worked with the company in the past to successfully upgrade a different metal plating line with a strong ROI.

#### Approach

The client's existing control panel consisted of an Allen-Bradley SLC processor, which communicated to Siemens Remote IO and VFDs over Profibus. Avid Solutions devised a unique

turnkey plan to replace the old control panel, VFDs and HMI system and would also retrofit the three remote IO panels in the field. Initially, the team estimated a production outage of approximately 9-13 days. Before any designing or programming took place, Avid Solutions conducted rigorous testing and process simulations in order to develop a plan of action, as well as to determine exactly where production bottlenecks were located and to ensure the quickest cutover time possible. Once completed, the team developed the new control system, which utilized EtherNet/IP technology for interfacing the Rockwell ControlLogix PLC system to the remote IO, VFDs and encoders, as well as a Wonderware System Platform for HMI, Historian and Recipe Management applications. Avid Solutions took a comprehensive approach from project management, electrical design/installation and network design to PLC/HMI programming, start-up support and operations/maintenance and IT personnel training.

#### Results

Avid Solutions exceeded all expectations by beginning production trials on day five and returning the system to production by day seven - a reduction of 22-46% for the anticipated commissioning period. Best of all, the new system has proven to increase the overall production rate to 115% of the client's initial goals. Since the software employed isn't proprietary, it allows open access for future modifications and adjustments to production forecasts. Plus, the hardware is based on industrial Ethernet protocols, providing the client with the flexibility to replace components when the harsh operating environment causes failures.

#### Applications:

Electroplating

Drive Control

Recipe Management

Historian

#### Technology:

Rockwell ControlLogix

Wonderware System Platform

Ethernet I/P

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