Application Highlight

2500 Series®
Programmable Automation Control System

To update an obsolete plant control and supervisory system composed of SIMATIC® 505 PLC and CVU10000, Air Liquide has selected the CTI 2500 Series® PLC and zenon HMI/SCADA software.

On the French island of La Réunion, Air Liquide has a medical oxygen and liquid nitrogen facility which used a Texas Instruments CVU10000 for process monitoring and control. The hardware (running under MS-DOS) was no longer maintainable and the software was no longer supported.

To ensure the long-term reliable operation of this plant, Air Liquide turned to CTI's international distribution partner NAPA International France to provide a turnkey migration to a modern control and supervisory system based on a CTI 2500 Series® PLC and zenon.

The zenon supervisory system operates from a standard PC running Windows® 7 and communicates with the CTI 2500-C200 PLC over an Ethernet network. Access to CTI's CPU diagnosis tools is just one mouse click away from the supervision system.

A second PC on the network uses a web browser to connect to the supervisory PC as a web client. This arrangement is an economical solution to supply multiple supervisory screens without increasing costs.

Optimized Engineering

With decades of experience in automation and supervision systems ranging from Texas Instruments and SIMATIC® 505 to CTI PLC's, NAPA International France engineers are now actively involved in the development of alternatives to these old systems using CTI 2500 Series® and zenon. For this migration, they reproduced in zenon a supervision system with a look and feel as close as possible to the one the operators were familiar with. In addition, they reproduced the standard CVU10000 system views such as loop summaries, alarm groups, and tuning.

Configuration of the zenon system is faster and less expensive for the customer. The old views of the CVU10000 HMI are used as a background to design new zenon® views, and the list of variables, along with their description and PLC memory address, is extracted directly from ASCII export of the CVU10000 system. This information is then converted to xml files and imported into the zenon project. This process minimizes the time spent making the migration, but more importantly minimizes the risk of human error during engineering.

Remote Maintenance and Support

The Message Control feature in zenon allows sending an SMS (or email) via a modem with a SIM card to alert maintenance crew agents when an alarm or an abnormal event occurs.

The Ethernet LAN is further connected via an Internet gateway to the corporate network allowing operators to connect remotely as Web Client via a secure VPN connection over the Internet. Similarly, this allows support engineers at NAPA International France to connect remotely to quickly diagnose configuration problems, and even take over control to make a change in the zenon supervisor or in the PLC program using FasTrak WorkShop Suite programming tool.

The CTI 2500 Series®/zenon system provides the most economical and lowest-risk solution for revamping CVU10000 and other discontinued supervisory systems such as TISTAR®, SIMATIC® PCS OSx or SIMATIC® PCS7/505 DBA.

Because this solution requires no replacement of the PLC system or rewriting of the existing PLC programs, it is very economical compared to alternate approaches. There is also much lower risk in the migration since the PLC process control program is untouched. And finally, there is no extended downtime required to recommission the system.

In this project, downtime was limited to only a few minutes required to replace the Simatic® 505 PLC with its CTI 2500 Series® equivalent. It is even possible to continue operating the original CVU10000 supervisory system in conjunction with zenon as long as the customer wishes.

All in all, the Air Liquide project was a relatively fast, simple, cost-effective HMI/SCADA migration that allowed the manufacturer to modernize and update its plant supervisory and control systems without completely replacing its existing process control system, requiring extensive downtime, reprogramming or significant conversion risk. That's what we at CTI call Smart Modernization™.

If you have Texas Instruments®, Simatic® 505 or CTI 2500 Series® PLCs in your plant and are thinking about modernizing your PLC or HMI/SCADA installations, do not hesitate to contact us to discuss your requirements and obtain a detailed demonstration of our solutions. CTI can deliver turnkey services, or we can work in collaboration with your local integrator or other partners.

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Control Technology Inc.
5734 Middlebrook Pike, Knoxville, TN 37921-5962
Phone: +1.865.584.0440 Fax: +1.865.584.5720
www.controltechnology.com

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