

Rockwell Automation helps Yamato Scientific increase sales by over US\$1 million by providing a safer, more cost-effective solution for dangerous dioxin analysis

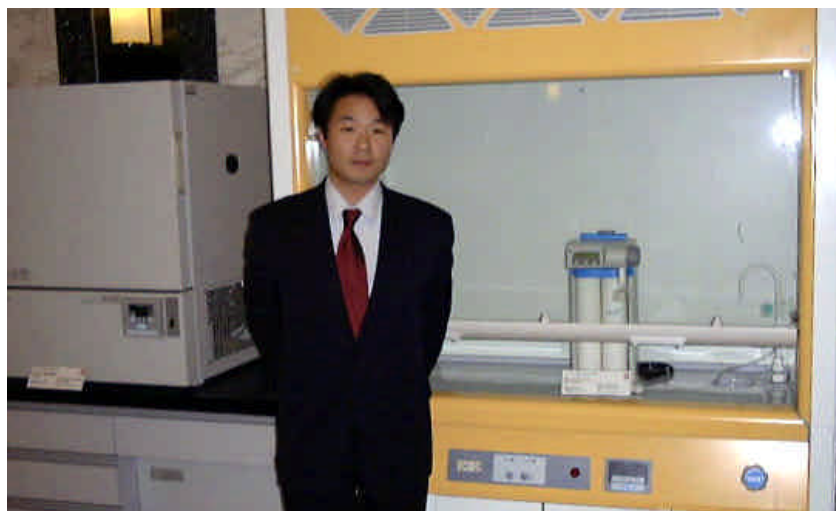
By employing RSView32 human machine interface for remote monitoring of dioxin analysis facilities, Yamato Scientific has ensured operator safety while providing a cost-effective, technically superior system for its customers.

Background

Yamato Scientific manufactures and distributes a wide range of laboratory equipment for virtually all types of critical laboratory endeavors, as well as for the electronic, pharmaceutical, biotechnology, and environmental industries. With an annual gross revenue of approximately US\$300 million, Yamato Scientific holds more than one-half share of Japan's dioxin analysis facilities market. It designs and constructs safe analysis laboratories for the Japanese government, local autonomous bodies, and private facilities who perform dioxin analysis.

In recent years, the Japanese public has become increasingly concerned about the dangerous environmental and health effects of dioxin. To ensure public safety and keep its citizens informed, the Japanese government along with other autonomous bodies have actively researched and analyzed dioxin.

Because it is a complex process, dioxin analysis cannot be handled by public organizations alone. In recent years, there has been a growing trend toward upgrading and increasing the number of private facilities capable of performing dioxin analysis.



Challenge

For Yamato Scientific's customers, safety is the number one priority. A thousand times more toxic than cyanide, dioxin is an extremely hazardous substance. It is produced in trace amounts and its grains are very fine and invisible.

Dioxin is analyzed in special facilities, which are equipped with a special exhaust system known as a draft chamber. The draft chamber is set up in a clean room to ensure a safe environment. Should the clean room environment degrade or the exhaust system in the draft chamber malfunction, dioxin could leak and be inhaled by an operator.

To protect the operator, the clean room environment and the operating condition of the exhaust system must be closely monitored. However, monitoring these conditions using only a room meter means that, to determine if an error has occurred, an operator may have to enter a room that may have already been contaminated.

In deciding to purchase a dioxin analysis facility, Yamato Scientific's customers must be certain the monitoring system is absolutely reliable. To address these needs, Yamato Scientific sought to develop a remote monitoring system that is safe, cost-effective, and technically superior to any other on the market.

Solution

To address these safety issues, Yamato Scientific partnered with Rockwell Automation to develop a remote monitoring system that would ensure a safe environment for dioxin analysis. Yamato Scientific required a solution that would constantly monitor conditions from outside the analysis room, collect data on the air-conditioning and temperature / humidity management in the clean room, monitor the exhaust conditions of the draft chamber, and display this information on a control panel near the entrance to the analysis room or on a back-office computer.

The system employs Yamato Scientific's Y-LIMS measurement monitoring system, which enables various analysis equipment, measuring instruments, and other equipment to share data over an OPC server. All system conditions — including temperature, humidity, atmospheric pressure, power consumption, exhaust fan operation, lock / unlock status, and room enter / exit data — are monitored for the last 24 hours and displayed using easy-to-understand graphics.

Data for the Y-LIMS system is provided by Rockwell Software's RSView32, which remotely monitors the dioxin analysis room and system conditions. Data from the draft chamber and clean room are sent via LAN to the RSView32 human machine interface (HMI), which processes the data and sends it to the RADS data display machine. Control

for the draft chamber is provided by a Yamato Scientific microcomputer, while control for the clean room is provided by a PLC with OPC server capability.

By providing remote, 24-hour monitoring in real time and using easy-to-understand graphics, the system ensures complete operator safety. Using the RSView32 HMI, operators can monitor dioxin levels and system conditions at any time in the laboratory or from a remote location. When a draft chamber failure, unauthorized entry, abnormal room temperature, or electric power surge occurs, the operator is notified by an alarm message.

Other features of RSView32 also make the system a popular choice for end users. With RSView32's VB capability, operation screens are fully customizable. User-friendly display screens can easily be developed to meet the customer's exact specifications. Because tags are completely separated, displays can be modified without altering the actual measurement program. Plus, RSView32's record function allows end users to track measurement and analysis so they can document problems when they occur.

The system is currently installed at analysis facilities in Sapporo and Kagoshima. It will also be installed at a new analysis room that opened in Miyazaki in 2002. Tours of the Miyazaki facility will be available for concerned citizens.

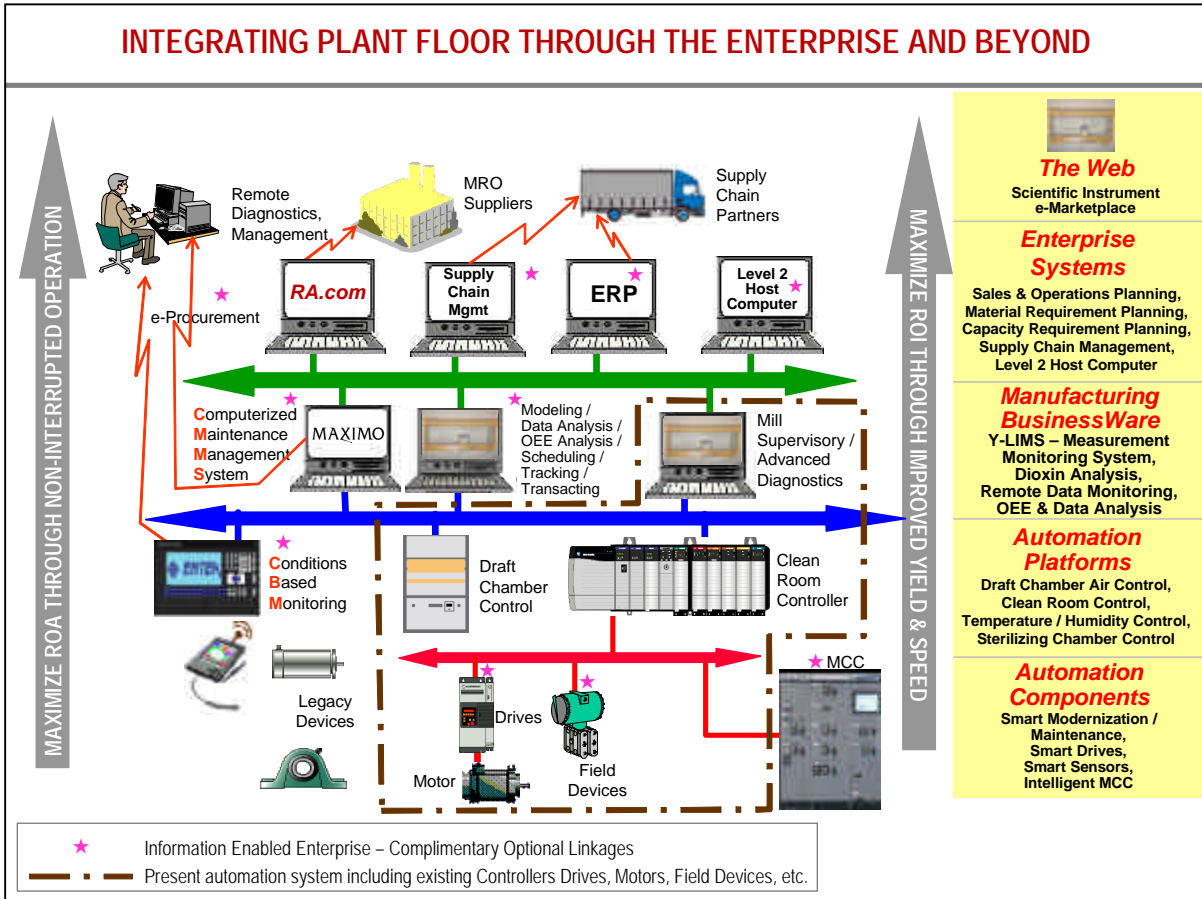
Results

Using RSView32 adapted for Y-LIMS, Yamato Scientific is able to provide a cost-effective, technically superior system to its customers. Being able to differentiate its system from others on the market has resulted in increased sales for Yamato Scientific. Since implementing the RSView32-based system, sales for analysis rooms have increased over US\$1 million.

"RSView32 is highly OPC compatible, so it can run on the existing LAN and Windows network environments, which are used by most of our customers," says Masahiko Mori, assistant manager, Engineering Division. "And being Windows-based, RSView32 costs much less to support and maintain than a dedicated computer, so it's more cost-effective and flexible for the end user. We could not have developed this system without RSView32."

The architecture on the following page depicts Rockwell Automation's concept of an Information Enabled Enterprise. The area outlined with a brown dash line represents the present automation level under discussion in this document. The remaining portion illustrates a host of solutions that Rockwell Automation can provide today to integrate the plant floor to the enterprise and beyond.

INTEGRATING PLANT FLOOR THROUGH THE ENTERPRISE AND BEYOND



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