Optimizing Exceptional Equipment

Process Matters

In this Issue of Process Matters

Is the ability to differentiate yourself in the marketplace a challenge? Do you struggle to provide cost-effective equipment that meets end-user design requirements, while also trying to improve time to market?

One way to distinguish your skids is to make them easier to integrate into an end user’s facility. According to input from global-customer members of the Rockwell Automation Process Advisory Council, skid integration can consume a large percent of a project budget, making it a prime target for improvement. However, streamlining the integration process can be quite challenging, as skid builders typically use commands, data and alarms in languages unique to their company. End users want a skid builder that defines how to communicate and tie skid commands, data and alarms together.

End users also want equipment that seamlessly bridges the gap between the plant floor and the enterprise. Skid builders can accomplish this goal by using the EtherNet/IP™ network to simplify the network infrastructure. Replacing a multitiered networking strategy with one standard network also helps reduce engineering time and integration risks.

This issue of What Matters explores the top four steps our end users identified for simplifying integration. Following these guidelines and using the right process automation technology can help you truly differentiate your equipment by making it easier to integrate without customization.

Four Steps to Simplified Skid Integration

1. Quality by Design

The ANSI/ISA-88 (S88) design standard for batch process control has become the default standard in North America and Europe – and is rapidly gaining acceptance in Asia – within the food, beverage, water/wastewater, pharmaceutical and life sciences industries. Skid-based batch equipment that complies with the S88 standard provides many benefits for end users, enabling them to:

• Bring conformity to the naming procedure and help expose necessary data
• Isolate their equipment from recipes for easier maintenance
• Recover from abnormal events using set guidelines and a standard set of states
• Simplify the collection and communication of customer requirements using common terminology and models
• Validate procedures and equipment independently for faster startups
• Reuse recipes and equipment phases to reduce costs
• Track historical data

End users consistently stress the importance of access to all process parameter data in order to create a blueprint of what is going on in the production process. Many skid builders provide only the product code and batch number with their skids, which is only as helpful as having a corner of a map. The manufacturing order, the campaign lot number and a lot of other product-context information is just as important to the production process. When not provided, users must add, modify or clear out codes to integrate the skids.
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When you follow S88 standards, your customers benefit from immediate access to valuable product context information, such as remote commands and process tracking data. In addition, helpful status parameters such as skid performance, clean-mode status, or sterilization, can also be easily addressed.

Product context information helps create a shared framework between skids and the rest of the production process. This programmed relationship is extremely valuable for troubleshooting purposes, since quickly resolving or avoiding production issues can save an end user substantial amounts of money, and in some cases, such as with high-value batches, could save several million dollars.

2. Key Process Parameters

You can further ease skid integration pains by identifying all process phases or key process parameters in the unit before your skid is shipped. This helps users define the proper commands and important values in each phase. When skid builders do not identify all key process parameters, users can spend many hours digging into the skid code to identify which code coordinates with which phase.

Whether it is heating up, cooling down, wrapping or cleaning, identification of these essential phases helps end users identify the codes and easily integrate them with the process system. Rather than having to reconfigure the overarching control system that drives the skids, users suggest templates to distinguish specific phases that will help the integration structure.

Consider the following guidelines when defining key process parameters:

- Each phase should check the status of all pertinent equipment and ensure it is ready for use.
- Material-adds should include system-learned, pre-act values to improve consistency.
- Phases should not automatically change the mode from “operator” to “program.”
- Only use shared phases to minimize arbitration requirements.
- Take advantage of material track to find materials and automatically adjust amounts.

3. Alarm Segmentation

To avoid alarm-programming challenges, end users recommend configuring skids so that alarm notifications are only delivered during active phases. Skids typically arrive at an end user’s plant with all maintenance and operational alarms active during all phases. Failing to segregate these two types of alarms creates an influx of nuisance alarms, which can diminish awareness to real issues. End users then have to clean up or add code to filter out the nuisance alarms that come through, increasing the integration burden.

For example, if a clean-in-place skid is inactive, and an alarm sounds when it is waiting for a command for acid or base, it is obvious to the operator that a nuisance alarm is alerting a change in pressure or temperature. It is important to note that maintenance engineers might care about alarms during standby mode, but from an operational standpoint, users may not want to see them unless the equipment is active.

4. Reporting Parameters

To further reduce reconfiguring time, all data for process tracking and reporting should be readily available to the end user, including fundamental information, such as what the skid does and what value it provides to the process. It can also include specific data, such as total energy consumed and trending data for many other parameters.

Everybody Wins

While some skid builders may worry that standardizing their skids could compromise their freedom to innovate and differentiate themselves in the marketplace, it is important to remember that following these four steps does not negate the solution side of your business. Rather, this type of standardizing is like creating a common phone charger for end users, while leaving the actual phone free to be customized.

Ease of integration is typically one of the top buyer criteria for selection of new process skid equipment. End users will select skid builders that follow these four steps, as their integration costs can be considerably reduced if you provide pre-engineered skid equipment using quality by design principles, access to all process parameters, alarm segmentation, and visibility into real-time reporting data that can help users make informed business decisions.

“The flexibility and ease of use led our customer to independently use the equipment in just a few days after its implementation. This convinced us to offer the same solution developed with Rockwell Automation to other clients,” said Claudio Franchina, instrument automation engineer at Olsa (an Italian equipment builder for pharmaceutical, cosmetic and chemical industries).
Product and Service Highlights

PlantPAx™ Process Automation System

The latest release of the PlantPAx Process Automation System from Rockwell Automation extends the scalability of the system, eases complex tasks and delivers new tools for engineers to streamline project startup. This release builds on the success of the PlantPAx System, which combines the plantwide control technologies and unmatched scalability of the Rockwell Automation Integrated Architecture™ system with all the core capabilities expected in a world-class distributed control system. With the PlantPAx System, users can integrate process control, power, information and safety into one infrastructure for reduced total cost of skid ownership.

For more information, visit:
http://www.rockwellautomation.com/solutions/process/systems

PlantPAx Virtual Image Templates

Rockwell Automation has launched the industry’s first production-grade virtual image templates to enable users to quickly deploy preinstalled system servers, operator workstations and engineering workstations on their virtualization infrastructure. The templates reduce the time required to install, update and activate a new system down to mere minutes. By virtualizing the automation system, users gain several advantages, including significantly simpler system backup and restoration, reduced risk associated with patches and upgrades, optimized computing resources, and reduced management and administration costs.

For more information, visit:

Rockwell Automation® PlantPAx Library

The Rockwell Automation PlantPAx Library helps reduce skid development and maintenance time. If your end user is using the PlantPAx System, using the PlantPAx Library can provide a consistent operator interface with the end user’s primary automation system, helping reduce integration costs. In the PlantPAx Library, you will find:

• Tested instructions that model real devices, including simulation of devices to ease operator training and strategy testing.

• Consistent modes of operation to avoid operator confusion and allow you to assist maintenance without opening logic.

• Consistent interfaces between objects to ease construction of complex control strategies.

• Standards-based user interfaces.

For more information, visit:

Allen-Bradley® PowerFlex® 525 AC Drive

This new compact Allen-Bradley PowerFlex 525 AC drive helps equipment builders simplify design and operation, and speed installation and configuration. The modular design is available in power ranges from 0.5 to 30 Hp or 0.4 to 22 kW at 100 to 600 volt input. With embedded EtherNet/IP, safety, USB programming, energy savings and a variety of motor control options, the drive is ideal for equipment-level and stand-alone applications or for integration into the Logix environment.

For more information, visit:
www.rockwellautomation.com/go/wmpf525
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Information from Rockwell Automation for OEMs

Product and Service Highlights

Process Training Units
Rockwell Automation is committed to improving your familiarity with many types of process instrumentation and control processes. We have partnered with Endress+Hauser and the company’s authorized sales representatives to create Process Training Units (PTUs) that are full-scale, working process systems with online instrumentation and controls. You gain hands-on experience with the types of operation diagnostics and troubleshooting found in real-life process plants. These fully functional “mini process plants” feature Endress+Hauser instruments integrated with the PlantPAx Process Automation System.

There are multiple PTUs across the United States and Puerto Rico. Please contact your local Rockwell Automation sales representative or, for more information, visit: http://www.us.endress.com/eh/sc/america/us/en/home.nsf/#page/~process-training-unit

FactoryTalk® View 7.0 Software
Manufacturers, particularly those in process industries, can gain increased functionality and an enhanced operator experience with the latest version of the FactoryTalk View 7.0 human machine interface software from Rockwell Automation. FactoryTalk View Site Edition and Machine Edition 7.0 applications, available now, offer more efficient alarm management, simplified installation, improved user experience, and integrated data-sharing in a wide range of production environments.

For more information, visit: http://www.rockwellautomation.com/rockwellsoftware/performance/view/overview.page

Rockwell Automation OEM Program for Machine & Equipment Builders
As an OEM, you are challenged to differentiate yourself amidst global competition and rapidly evolving technology. To effectively compete, you need to define value beyond the cost of your equipment and maximize company performance. Rockwell Automation can help improve your performance with solutions and services to lower the Total Cost to Design, Develop and Deliver™ equipment and meet your customers' requirements. As part of the OEM Program, you can expect increased co-marketing opportunities, better market planning with our sales force, and improved customer engagement with co-managed objectives.

For more information, visit: www.rockwellautomation.com/go/wmoem
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SAVE THE DATE: RSTechED™ 2013
The RSTechED Event gives you an opportunity to learn from industry experts and see how your peers are solving many common manufacturing and production challenges. Designed for you, your end customers, system integrators, distributors and partners, the RSTechED event gives you the chance to work with the latest Rockwell Automation solutions in a classroom environment. Join us June 6-9 in San Diego, and learn techniques for creating innovative, high-performance manufacturing and production applications.
For more information, visit: www.rsteched.com

SAVE THE DATE: PACK EXPO 2013
Join more than 26,000 attendees at PACK EXPO 2013, sponsored by Packaging Manufacturers Machinery Institute (PMMI), to see powerful packaging and processing solutions from 1,600 exhibitors and suppliers. Rockwell Automation and many of its OEM Partners in the Rockwell Automation PartnerNetwork™ framework will exhibit at the show Sept. 23-25 in Las Vegas.
For more information, visit: www.packexpo.com

SAVE THE DATE: Process Solutions User Group (PSUG) 2013
This two-day event on Nov. 11-12 in Houston is held in conjunction with the Automation Fair event, and provides a unique opportunity to discover ways to achieve process automation excellence. You’ll interact with peers and industry experts, learn best practices, earn professional development hours through educational sessions, and listen to customers present their challenges and successes. In addition, you’ll get to voice your opinion and help drive the technology roadmap for the PlantPAx Process Automation System. Last year, more than 650 participants representing 230 global companies attended PSUG. Don’t miss this global convergence of process industry professionals.
For more information, visit: www.psug.rockwellautomation.com

Events Around the World
Rockwell Automation hosts events around the globe to help you learn more about how to use technology as a competitive advantage – to get your products and services to market faster, reduce costs, better utilize power and plant-floor assets, and minimize risk in your manufacturing environment.
For a list of events worldwide, visit: www.rockwellautomation.com/events/overview.page

For more information on OEM Solutions from Rockwell Automation visit: www.rockwellautomation.com/solutions/oem

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Publication OEM-BR015A-EN-P - April 2013
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