Optimizing Exceptional Equipment

Design Tools Matter

Before choosing a design tool, you’ll need to determine which architecture is appropriate for your application needs and select the right hardware. The Integrated Architecture Builder (IAB) from Rockwell Automation is a graphical software tool that helps you determine which Logix-based architecture is appropriate. It also allows you to select hardware, including controllers, I/O, networks, drives, cabling and wiring, motion control and other devices. IAB provides detailed hardware, network and architecture views, and built-in learning aids, such as product documentation, lab exercises and quick-start guides.

IAB also can help achieve supply-chain efficiencies because it identifies the most commonly available components and technology by geographic region, often reducing the time spent building your new machinery.

In This Issue of Design Tools Matter

Building new equipment is an exciting venture – exploring new technology, surpassing competitor offerings, and striving to meet evolving customer needs. Today’s end users want new machinery in short order and at a certain price. Getting machinery to market fast ultimately means a better bottom line. So, reducing equipment design and development phases in terms of time and cost is critical.

Whether your design is stand-alone or integrated, you can take advantage of free design tools to lower the Total Cost to Design, Develop and Deliver™ equipment. With so many tools available, this issue of What Matters will help you navigate which tools are best for each task.

Choosing an Architecture and Products

In This Issue of Design Tools Matter

Building new equipment is an exciting venture – exploring new technology, surpassing competitor offerings, and striving to meet evolving customer needs. Today’s end users want new machinery in short order and at a certain price. Getting machinery to market fast ultimately means a better bottom line. So, reducing equipment design and development phases in terms of time and cost is critical.

Whether your design is stand-alone or integrated, you can take advantage of free design tools to lower the Total Cost to Design, Develop and Deliver™ equipment. With so many tools available, this issue of What Matters will help you navigate which tools are best for each task.

Choosing an Architecture and Products

Before choosing a design tool, you’ll need to determine which architecture is appropriate for your application needs and select the right hardware. The Integrated Architecture Builder (IAB) from Rockwell Automation is a graphical software tool that helps you determine which Logix-based architecture is appropriate. It also allows you to select hardware, including controllers, I/O, networks, drives, cabling and wiring, motion control and other devices. IAB provides detailed hardware, network and architecture views, and built-in learning aids, such as product documentation, lab exercises and quick-start guides.

IAB also can help achieve supply-chain efficiencies because it identifies the most commonly available components and technology by geographic region, often reducing the time spent building your new machinery.
Optimizing Exceptional Equipment

Designing a Safety System

Part of the design process often involves building a safety system to improve worker safety and comply with end-user and regulatory requirements. This can be an extensive process of identifying potentially hazardous access points and required safety functions.

The Safety Automation Builder (SAB) configuration software tool from Rockwell Automation helps automate and shorten this process. Using the tool, you can import a machinery image and answer questions to identify and select necessary safeguards.

The tool compiles all safety-product selections, generates a bill of materials, and compiles necessary data to populate IFA’s SISTEMA (Safety Integrity Software Tool for Evaluation of Machine Applications). SISTEMA indicates the attained performance level (PL) of the safety system using ISO 13849-1 through an automatic calculation.

As a result, you can minimize human error associated with the traditionally manual design process and be more confident that your safety system complies with requirements.

To support the SAB tool, Rockwell Automation also provides Safety Functions, which are pre-engineered design documents containing information for each safeguarding method, including functionality, PL and required input, logic and output components. After going through the SAB process, users can select the appropriate safety function and combine it with the bill of materials to design a complete safety system.

In addition, you can launch SAB, IAB and Accelerator Toolkits from the Rockwell Automation ProposalWorks™ software, which aggregates the products you selected into one bill of material. It also helps you find exact catalogue numbers and pricing to build proposal documentation.

Choosing a Design Tool

After selecting the appropriate architecture and products that best fit your application, you’ll need to identify which tools match your skills and project. Rockwell Automation provides many free tools to help you understand, plan and configure your machinery. First, use the Rockwell Automation Integrated Architecture™ Tools Selection Wizard to identify which tools will help make your design process most effective. After you answer a few questions, the wizard will recommend the right tools.

Configuring Made Easy with Accelerator Toolkits

A series of Accelerator Toolkits have been developed to reduce design time. For motion applications, the Drives and Motion Accelerator Toolkit (DMAT) from Rockwell Automation can help you reduce the time and cost of developing a new application using Rockwell Automation equipment, especially Allen-Bradley® PowerFlex® AC drives and Allen-Bradley Kinetix® servo drives.

The easy-to-use tools and templates assist with a wide variety of design tasks, from selecting components and developing drawings, to writing application code, laying out HMI screens, starting up a machine, and troubleshooting. Rockwell Automation provides the following Accelerator Toolkits:

- Computer Numerical Control (CNC) Machining Accelerator Toolkit
- Drives and Motion Accelerator Toolkit
- Connected Components Accelerator Toolkit
- On-Machine Accelerator Toolkit
- Energy Management Accelerator Toolkit
- Water Wastewater Accelerator Toolkit
- Connected Components Building Blocks
- Safety Accelerator Toolkit
The idea behind the Accelerator Toolkits is to help you quickly take care of the mundane and often time-consuming – but necessary – core tasks involved in the equipment-building process. They offer easy-to-use modules, which provide a solid foundation of functionality and features. This frees up your time to focus on designing unique features and differentiating your machinery.

The Accelerator Toolkits use a modular format that greatly simplifies the work needed when building applications with multiple product lines. In practice, OEMs have reported design time savings of up to 50 percent by using the simplified, modular programming and configuration structure, checklists and step-by-step instructions.

Bringing it all Together
Planning and configuration tools, the Integrated Architecture Tools Selection Wizard, and Accelerator Toolkits can be used collectively to minimize design time and maximize resource utilization. Each provides a different but effective method for helping you reduce time and cost.

Case in Point: OEM Cuts Development Time in Half With Design Tools
Production Automation Inc. (PAI) had extensive experience building palletizers, but previous designs were not suited to the changing demands of bottling clients. Traditional palletizers use physical diverters to sort products into specific patterns for packaging. Each new pack size or configuration requires a new pattern, meaning diverters must be added, removed or rearranged. This conversion typically requires about three days of downtime, including testing time.

On top of lost production is the cost of new diverters or other components, and servicing and installation labor charges, which can run into tens of thousands of dollars.

PAI worked with Kendall Electric to develop a fast and flexible palletizing solution that is easy for bottling clients to use with their existing infrastructure and knowledge base. The result: the Gantry Hybrid Palletizer – a machine that uses integrated motion on EtherNet/IP™ to provide the flexibility customers wanted, without sacrificing speed or handling quality.

PAI reduced design time by using the DMAT with Motion Analyzer design software. “We were able to bring the machine to market quickly at reduced development costs,” said Kevin Davis, electrical design controls manager, PAI.

The toolkit helped PAI select components, develop CAD drawings, write code, lay out HMI screens, and start up and troubleshoot machines. Using the software, PAI simulated the palletizer in a digital environment first, and worked out any kinks or issues before they began working on the live machine. Base logic code was generated for PAI’s engineers, so they only ended up writing about 60 lines of code for the whole machine – and no time was required to develop touch-screen faceplates.

These tools helped PAI design and produce a working physical model of the Gantry Hybrid Palletizer in just three months – less than half the usual development time.

To read the full story, visit: http://literature.rockwellautomation.com/idc/groups/literature/documents/ap/bevvp-ap010__en-p.pdf

“We added details for our machine – the control system we were using, the speed we needed, etc. – into the toolkit and had a complete bill of materials within minutes,” Davis said. “The program also provided electrical drawings that we handed straight to the electricians charged with wiring. In addition, Motion Analyzer showed us we could use smaller motors and drives than originally planned, which helped us cut component and energy costs for our end users.”
Product and Service Highlights

Integrated Architecture Tools Selection Wizard
The Integrated Architecture Tools Selection Wizard will help you find exactly the tool you need to match your skills and project. Answer a few questions and the wizard will display the appropriate tools.

For more information, visit the following link (select the fourth option in the list):
http://www.rockwellautomation.com/rockwellautomation/products-technologies/integrated-architecture/tools/overview.page#/tab4

Connected Components Accelerator Toolkit
The Connected Components Accelerator Toolkit provides the information you need to quickly and easily implement common control tasks into your machinery design. It includes engineering design tools and pre-configured building blocks, so you can focus on design and performance rather than time-consuming programming and validation.

For more information, visit:

On-Machine Accelerator Toolkit
The On-Machine Accelerator Toolkit includes easy-to-use tools and templates to help you simplify sizing and selection, including an example bill of material, enclosure and wiring diagram CAD files, and controller-programming and HMI-application files.

For more information, visit the following link (select the fourth option in the Accelerators list):

Drives and Motion Accelerator Toolkit Wizard
To help you use the popular Drives and Motion Accelerator Toolkit (DMAT), Rockwell Automation has launched a system-development wizard. The wizard can save you up to 90 percent of the time required to select, configure and troubleshoot an integrated drives and motion-control solution. The DMAT wizard guides you through each step of selecting and programming. The proactive interface prompts you for input with questions about your machinery requirements, such as axes of motion, torque and speed. Based on your responses, the software presents a choice of motor and drive combinations for a variety of load, transmission and application types. Once you select preferred components, the DMAT produces a bill of materials.

To view a demo video, visit:
http://literature.rockwellautomation.com/idc/groups/multi-media/documents/multimedia/DMAT_FINAL03062013.mp4
Product and Service Highlights

Integrated Architecture Builder
Integrated Architecture Builder (IAB) is a graphical software tool for configuring Logix-based automation systems. The tool helps you select hardware for a variety of applications, including controllers, I/O, networks, PowerFlex drives, on-machine cabling and wiring, and motion control. It provides a bill of material and report with graphics. Products from 14 companies in the Rockwell Automation Encompass™ Program are included in the tool.

For more information, visit:
http://www.rockwellautomation.com/support/configuration.page

Motion Analyzer Software
Motion Analyzer software is a comprehensive motion-application sizing tool to help you analyze, optimize, select and validate a Kinetix motion control system. The software facilitates the machine design process, letting you quickly design and validate new machinery concepts without purchasing or installing physical equipment.

For more information, visit:
http://ab.rockwellautomation.com/Motion-Control/Motion-Analyzer-Software

ProposalWorks Proposal Builder
ProposalWorks software helps you find exact catalogue numbers for Allen-Bradley products and services with an easy-to-use interface. You can access current pricing and easily build a proposal document. In addition, ProposalWorks links with IAB and SAB to help you build a complete Integrated Architecture and safety system.

For more information, visit:
http://www.rockwellautomation.com/rockwellautomation/support/selection.page

CrossWorks Competitive Cross Reference Program
CrossWorks is an online tool that helps you convert competitive catalog numbers into similar Allen-Bradley products.

For more information, visit:
http://www.rockwellautomation.com/rockwellautomation/support/selection.page

Safety Automation Builder and Safety Functions
The Safety Automation Builder (SAB) configuration software and Safety Functions pre-engineered design documents can help you save time when designing a machinery safety system. The software is available as a free download from the Rockwell Automation website. It guides you through the design process by providing options for layout, safety performance level (PL) analysis based on ISO 13849-1 using IFA’s SISTEMA, and product selection using Allen-Bradley products.

For more information, visit:
Optimizing Exceptional Equipment

Information from Rockwell Automation for OEMs

Save the Date: 2013 Automation Fair® Event

Join us at this year’s Automation Fair® event, Nov. 13 and 14 at the George R. Brown Convention Center in Houston, for a great opportunity to explore smart, safe, sustainable manufacturing solutions geared toward improving your business profitability. Attend industry forums, user group meetings, hands-on labs, technical sessions and demonstrations to expand knowledge and use of the latest control, power and information technologies. Take advantage of automation expertise from Rockwell Automation and our PartnerNetwork™ program, providing comprehensive solutions from industry leaders in distribution, systems integration, machine building, and complementary technologies.

For more information, visit:
http://www.automationfair.com

Rockwell Automation OEM Program for Machine and 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 comarketing opportunities, better market planning with our sales force, and improved customer engagement with comanaged objectives.

For more information, visit:
http://www.rockwellautomation.com/go/wmoem

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 help you 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:
http://www.rockwellautomation.com/rockwellautomation/events/overview.page

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

Allen Bradley, Automation Fair, Encompass, Integrated Architecture, Kinetic, LISTEN. THINK. SOLVE., PartnerNetwork, PowerFlex, ProposalWorks, Rockwell Software and Total Cost to Design, Develop and Deliver are trademarks of Rockwell Automation Inc. EtherNet/IP is a trademark of ODVA. Trademarks not belonging to Rockwell Automation are property of their respective companies.

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Klerelaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Publication OEM-BR040A-EN-P - September 2013
Copyright © 2013 Rockwell Automation, Inc. All Rights Reserved. Printed in USA