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Today, Asia Pacific manufacturers are facing dual business challenges: rising inflation, and rising operating costs due to local currency fluctuations against foreign currencies. One way to combat these challenges is to implement strategic initiatives that increase operating efficiencies.

Regardless of the industry – oil and gas, mining and cement, automotive, tire and rubber, metals, infrastructure, chemical, beverage, and brewing – Rockwell Automation® offers a breadth of services and solutions that help to increase operating efficiencies. For example, we can create a customized Asset Management Strategy that will help you avoid downtime, ease staffing burdens and get you back online quickly with minimal impact on production.

Our Asset Management Strategy is a disciplined approach that drives success through continuous improvement in multiple areas ranging from inventory reduction to obsolescence risk management. It helps customers to improve overall equipment effectiveness, increase return on net assets, and create empowered and engaged employees.

Rockwell Automation also offers Lifecycle™ Extension and Migration services that help to identify, mitigate and minimize the risks of automation obsolescence. As products approach the end of their expected life, the availability of parts and resources becomes more difficult to obtain – until the point at which one or both is exhausted. The Lifecycle and Criticality Analysis, part of an Installed Base Evaluation®, provides customers with a better understanding of the risks their facilities may experience and the ability to pinpoint automation obsolescence risk by site, area, line, machine and panel. This allows the ability to migrate critical production products to newer technology.

As maintenance and capital investment budgets continue to shrink, many manufacturers are beginning to recognize the value of repairing existing assets that malfunction or fail. Rockwell Automation offers cost-effective repair services and a network of global repair hubs to help you extend the useful lifecycle of your automation equipment.

For instance, four remanufacturing and repair facilities in Asia Pacific use the same high-quality parts, standards and specifications as the original manufacturing process. As a result, remanufactured parts are returned quickly, having undergone installation of applicable updates and enhancements, replacement of failed or aged components, parametric testing and cleaning, and cosmetic restoration.

What’s more, the recent acquisition of Lektronix® expands our global repair capabilities. With facilities in Singapore and India, Rockwell Automation is able to repair products of other manufacturers using replacement parts that meet or exceed the original design specifications.

Rockwell Automation services and solutions can help you create the strategic initiatives that increase your operating efficiencies. Learn more about our services and solutions in this issue of Automation Today Asia Pacific, and contact your local Rockwell Automation sales office for help on boosting your bottom line.

Tom O’Reilly, President
Rockwell Automation, Asia Pacific Region
Security Initiative Reduces Industrial Risks

Rockwell Automation® recently announced an initiative to help manufacturers reduce security risks to control systems in response to growing cyber-security threats. The initiative will help automation and IT professionals more effectively secure their industrial processes with a combination of control system design and best practices, contemporary technologies and professional services from Rockwell Automation and its strategic partnerships, including Cisco®.

The three-pronged initiative is designed to achieve a secure connected enterprise through the following:

Defense-in-Depth Methodology. This approach, which addresses both internal and external threats by forming multiple layers of defense, helps manufacturers by establishing processes and policies that identify and contain evolving threats in industrial systems.

Secure Automation Architecture. An evolving set of products and services will help to reduce risks and better protect and enhance the security of production assets. From active consulting engagements to specific product offerings – such as managed switches, secure communications, user authentication and access control, and endpoint capabilities for tamper proofing and tamper evidence – Rockwell Automation is making investments to bring security practices and products to customers.

Enterprise-Ready Industrial Security Solutions. Rockwell Automation and Cisco advocate for a common network architecture approach that helps decrease inconsistencies in network protocols, security practices and training. In the future, the companies will offer guidance on topics such as resilient network design, access control, contextual identity management and protection of assets through a portfolio of jointly developed industrial products and industrial control system security resources.

Innovators in Industrial Automation Attend Annual Automation Fair Event

More than 9,700 manufacturing and industrial professionals gathered in Houston, Texas, in the United States for the first day of the Automation Fair event hosted by Rockwell Automation and its PartnerNetwork members. The two-day event, held Nov. 13-14, attracted manufacturing and process business leaders, industry analysts, and technology and service providers from the industrial sector who were eager to capitalize on the most promising trends in automation and process control.

The event included hands-on labs, demonstration workshops, technical sessions, industry forums and more than 100 exhibitors showcasing cutting-edge products and solutions.

On Nov. 11-12, attendees of the Process Solutions User Group meeting heard best practices and discovered solutions to improve their processes and create new revenue. Rick Esker, senior director, Industry Solutions Group at Cisco, shared how companies can balance big data and industrial security. Industry experts from Endress + Hauser, Acuite and Rockwell Automation shared the latest technology trends affecting the connected enterprise for instrumentation, human-machine interface and production information – and how they can help drive performance.

Keith Nosbusch, chairman and CEO, Rockwell Automation, says, "By showing how attendees can converge automation and information into one connected enterprise, the event enables customers to improve their business profitability, help optimize their plants, and make their operations cleaner, safer, more secure and more energy-efficient.”

Check Out These Free Publications

Rockwell Automation® has recently released new distributed control system (DCS) migration white papers and a guide to functional safety for process applications.

The series of DCS migration white papers focus on different steps within the migration process. For example, "Justification for Migration" examines how to accurately analyse the total cost of ownership for continued operation on an outdated DCS and how to justify the benefits of replacing it.

"DCS Migration Strategy and Implementation" shares strategies for upgrading an existing legacy DCS to a new automation system. "Automation System Optimisation" examines the specific ways in which a new automation system can deliver superior performance as compared to a typical legacy DCS. Visit http://marketing.rockwellautomation.com/process/tools-downloads.

To help customers with the application of IEC61511 (the process industry-specific implementation of IEC61508), the company has published the “Process Safebook.” This guide discusses how to manage safety in electrical, electronic and programmable electronic systems as well as explains how to integrate safety into a process system design. Visit http://www.emea.rockwellautomation.com/process/en/free-safety-guide.aspx.

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Turn your marketplace challenges into advantages through smart, safe and sustainable solutions

Back by popular demand, Rockwell Automation on the Move will return to Melbourne Park Function Centre on 25 – 26 March, 2014. This not to be missed event will demonstrate how the latest industry practices are turning marketplace challenges into advantages.

The event will have a strong industry focus and offers presentations from leading experts, hands-on lab sessions, workshops, technical sessions and a large exhibition area featuring the latest in automation products and technologies.

According to Matthew Treeby, Commercial Marketing Manager at Rockwell Automation, “This year’s event will follow the success of previous events by providing participants with the latest information about industry trends, new technology development and sharing of best practice.”

“The event will give participants an interactive, hands-on experience where the latest technologies and products from Rockwell Automation will be demonstrated by the experts who use them. Our experts will discuss in detail specific applications and how they benefit end users in achieving their business goals,” said Treeby.

Rockwell Automation on the Move will showcase how automation, process control, power and safety solutions are combined to provide an integrated system that optimises operations and leverages your business investment. This event will particularly highlight solutions for the mining, oil and gas, food and beverage, and water and wastewater industries.

Maintain, upgrade or update your skills…

Our training instructors are industry-experienced engineers with current “hands-on” application experience. We provide a comprehensive selection of first class industrial automation training products and courses to meet your changing needs.

You can obtain in-person instruction on a wide range of automation topics from our factory-trained instructors. Each instructor brings extensive hands-on experience and technical expertise to the classroom, and will individually guide you through programming, designing, maintaining and troubleshooting to help you optimise the performance of your automation assets and meet your goals.

Rockwell Automation offers the following Instructor-Led Training Options:

• Standard Open Enrolment Courses
• Tailored Training Courses
• Onsite and Private Training Courses

For more information about Rockwell Automation Services, please contact your local Authorised Rockwell Automation Distributor or visit:

Australia - www.rockwellautomation.com.au
New Zealand - www.rockwellautomation.co.nz
RSTechED is set to inspire, educate and innovate participants in Australia and New Zealand in 2014. In its 14th year the event will bring together diverse personnel from organisations, including control engineers, manufacturing IT, plant, operations and maintenance managers.

The Australian event will be held from 25-27 February 2014 at the Gold Coast Convention and Exhibition Centre. RSTechED will then go to New Zealand, being held at the Waipuna Conference Suites Highbrook in Auckland from 4-5 March 2014.

According to Lucas Maw, Commercial Marketing Engineer, at Rockwell Automation, “A key focus of RSTechED 2014 will be to provide participants with a greater understanding of the information revolution, and how the latest Rockwell Automation products and solutions can assist organisations to establish an integrated enterprise system.”

“The benefits of connecting the business and IT areas of an organisation to the plant floor are infinite — our solutions create working environments that are smarter, more productive and more secure,” said Maw.

Lab sessions for hands-on product demonstrations will be held at both locations— allowing participants to use the latest technology and see what it can do for them in their specific applications. Attendees will also hear from industry experts about best practice and see how technology can be applied to solve many common manufacturing and production challenges.

Incorporating advances in software technology is becoming an important means for companies to increase productivity, reduce operating costs and improve quality.

RSTechED delivers the industry’s only multi-day event offering unique ways of learning, exploring and discovering techniques for creating innovating, high-performance manufacturing and production applications.

For more information and registration for RSTechED Gold Coast and RSTechED Auckland, visit: http://www.rsteched.com

Rockwell Automation appoints new State Manager for Victoria and Tasmania

Rockwell Automation is pleased to announce the appointment of Tim Keech to the role of State Manager for Victoria and Tasmania.

In this role, Tim will be responsible for planning, directing and controlling the operations of the Victorian and Tasmanian territories. He will also be working with distributor partners to drive growth and assure the long term growth, development and viability of the local market.

“In addition to financial results, a key focus will be to bring together the various business units and distribution channels to meet the unique needs of our customers,” said Keech.

“As highlighted by the recent decision of Ford and Holden to cease manufacturing in Australia, the sector continues to faces a number of challenges to remain competitive in the global environment. We are firmly focused on continuing to evolve our product and service offerings to help our customers address these challenges in their businesses.”

Tim first started with Rockwell Automation in May 2003 holding a variety of sales and business unit roles. He worked with a customer of Rockwell Automation, M.I. Power, as Sales and Marketing Manager in 2009 before re-joining Rockwell Automation in 2010 as Business Manager, Power Control Business. He holds a Bachelor of Engineering — Electrical from the University of Technology, Sydney.

“In his role as State Manager for Victoria and Tasmania, Tim will be well placed to accelerate our focus for this market. His strong business and technical background will help to provide value to our customers in this region,” said David Hegarty, Managing Director, South Pacific at Rockwell Automation.
Today, manufacturers are expected to do more with less – less staff, budget and time. Expectations are focused on maintaining lower operating budgets while increasing efficiency and optimising operations.

One way to achieve these goals is to invest in a comprehensive Asset Management Strategy. An Asset Management Strategy is a disciplined, step-by-step approach that delivers financial benefits. It drives engagement and success through continuous improvement in multiple areas ranging from inventory reduction to obsolescence risk management.

Implementing an Asset Management Strategy can result in such benefits as improved overall equipment effectiveness (OEE), increased return on net assets (RONA), and empowered and engaged employees.

**Taking Initial Steps**

Nick Goebel, business manager, Plant Services, Rockwell Automation®, explains that there are four steps in creating a customised Asset Management Strategy. The first step is to examine your current situation while keeping in mind business priorities, such as process validation over uptime or environmental impact over rate.

To establish a baseline for improvement, first understand your operation’s process hierarchy to determine equipment priority and risk. Second, understand your equipment’s serviceable components and their lifecycle status. Finally, understand storeroom content and identify all other locations holding spare parts. This data will facilitate future decision-making and allow immediate inventory optimisation. It also will enable risk mitigation on the most critical equipment and provide the basis for future management of plant assets, including preventive maintenance (PM) program optimisation, storeroom optimisation, machine-builder changes and warranty capture. Once you have completed data collection, assess critical areas of concern, outline needs for improvement, and define your objectives so you can build an attainable asset management plan.

The second step is to design an Asset Management Strategy. Goal-setting activities will yield the building blocks for Asset Management Strategy design, which likely will include several elements such as storeroom management redesign; MRO process management redesign; reporting and dashboard creation; excess spare parts burn, sell-off, and/or vendor-managed agreement; and PM activity changes.

For example, storeroom management redesign involves examining existing storeroom layout and parts management tools, including existing software, labeling and tracking solutions. Consider implementing a stock keeping unit (SKU) rationalisation assessment that helps to determine the merits of adding, retaining or deleting items from a company’s inventory.

Once inventory is optimised, establish best practices for parts repair or replacement. Minimising stock, optimising the repair process and building an actionable reporting structure are the most sustainable ways to maximise automation investment. Reliability improvement uses a process risk assessment to track and understand the consequences of process and equipment failures as well as recommend priority actions.
The final element in designing an Asset Management Strategy is to consider PM activity change. You may choose to use vendor specialists with the resources to develop and sustain a PM program through scheduled service visits, fully warranted replacement parts and 24/7 remote troubleshooting – thus freeing up your personnel to operate the equipment and manufacture products.

**Finalising the Process**

The third step in the four-step Asset Management Strategy process is to implement a unique solution. The structure of your plan determines the implementation path. For example, you may be able to use your existing staff and processes to implement simple, immediate point solutions such as inventory disposition or burn-off. But when it comes to more complicated process implementations or redesigns, such as a storeroom or MRO process redesign, seeking an external specialist to design and execute the right implementation plan and assist with the organisational change-management process can help save time and effort.

The last step is to measure and continuously optimise the process. The most successful asset management strategies evolve as equipment, process and people change. Therefore, be sure to keep a working document listing critical plant assets and equipment changes. Before the equipment is purchased or the retrofit done, make every effort to use components already in stock, reducing the need to purchase additional inventory.

According to S. Govindaprasad, Rockwell Automation Asia Pacific regional director of Services & Support, “The importance accorded to plant asset management, simply put, is increasing. This can be attributed to the pressures the manufacturing industry is subjected to – internally and externally. Our customers have the necessity to improve efficiency, reduce manufacturing cost and graduate towards sustainable manufacturing with a reduced plant asset maintenance budget. There is also a social factor to be considered – the aging workforce in the maintenance departments of the manufacturing sector is not getting replaced, and the new generation of engineers does not find the maintenance profession appealing. Rockwell Automation provides various services across a range of industries to help with these challenges – consulting, training, spare parts management, remote support and lifecycle management.”

**ONE-STOP SERVICE**

The Rockwell Automation® Asset Management Program™ provides a proven methodology to help repair assets, recover warranty, optimise inventory and simplify transactions by offering a single point of contact for all repairs. An on-site, asset management professional integrates with customer maintenance and production teams, providing services such as warranty and asset tracking as well as comprehensive asset and online reliability reports.

When a repair is necessary, Rockwell Automation Remanufacturing™ and Repair Services can help restore equipment to its original operating condition for optimum functionality. There are four remanufacturing and repair facilities in the Asia Pacific region – each using the same high-quality parts, standards and specifications as the original manufacturing process. This means a remanufactured part is returned quickly, having undergone installation of applicable updates and enhancements, replacement of failed or aged components, parametric testing and cleaning, and cosmetic restoration.

Lifecycle™ Extension and Migration services help to identify, mitigate and minimise the risks of automation obsolescence. As products approach the end of their expected life, the availability of parts and resources becomes more difficult to obtain, until the point at which one or both are exhausted. The Lifecycle and Criticality Analysis provided as part of an Installed Base Evaluation™ provides customers with a better understanding of the risks their facilities may experience and the ability to pinpoint automation obsolescence risk by site, area, line, machine and panel. This allows the ability to migrate critical production products to newer technology.
How much downtime can a manufacturer afford?

According to ARC Advisory Group, the average impact of unscheduled downtime is $20 billion.* For Korea’s Nexen Tire, with approximately 205 dealers in 30 countries, the answer to that question is, very little. The company has seen remarkable growth over the past several years and prefers to invest in expansion, updating equipment and technology—not in managing storerooms, spare parts and inventory.

The challenge for Nexen Tire was quick expansion. More than 75 percent of machines were imported. Nexen has hired several new staff; however, they lack sufficient knowledge about the existing and new imported machines. As a result, they are unable to modify machine default settings. In addition, 70 percent of Nexen’s engineers were newly hired and lacked experience with the equipment, making it imperative that these engineers become familiar with these machines quickly and efficiently so they could communicate with the vendors and each other about Nexen’s needs.

Right Spares, Right Time

Nexen Tire runs three production factories, one in China and two in Korea. For the newest greenfield plant in Changnyeong, Nexen wanted an alternative to a spare parts purchase because uptime is critical to so many of its applications. Nexen also wanted a flexible program that would improve control of inventory assets and integrity while getting immediate availability of critical spare parts. Finally, training for newly hired engineers was important, so these employees could get new machines up and running quickly and maintain those machines for the long term.

To determine how spare parts were handled in the past and Nexen’s exact needs moving forward, the Rockwell Automation® Services & Support team performed an Installed Base Evaluation™ (IBE). The IBE included an inventory of installed electronic/mechanical equipment and stores of Rockwell Automation equipment. To determine recommended inventory levels, engineers also reviewed:

- Spares inventory
- Applications
- Environmental conditions (grounding, wiring, possible corrosive conditions, temperature, etc.)

The final analysis provided Nexen with a detailed inventory management report that identified critical spares, including excess and insufficient spares; an audit of inventory controls; and a summary of the current cost of carrying inventory.

The team presented the benefits of a Parts Management Agreement (PMA), explaining how this would help Nexen reduce operating costs associated with managing spare parts in its Changnyeong plant while maintaining access to Rockwell Automation spare parts 24x7x365. This PMA is backed by a Rockwell Automation remanufacturing and renewal parts services to replenish any inventory used.

In addition, the team offered options for training, focusing on an extensive portfolio of training courses, delivery methods and specific training plans to support Nexen’s precise needs.

As a result of the PMA and tailored training, Nexen is avoiding an unnecessary build-up of inventory over time. And, when the PMA ends, the inventory can be removed or modified to meet current needs. In addition, the agreement makes the need for large capital outlays for purchasing spare inventory unnecessary and frees up cash for other areas of spending.

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In the oil and gas industry, downtime can cost upwards of $1 million an hour. Any delay in production can quickly bleed profits.

Subsea production, in particular, can be a challenge. While offering a cost-effective alternative to platform-based facilities, especially in the areas of exploring remote or deep water fields, subsea production systems must contend with strong currents, uneven sea beds and sub-zero temperatures. In addition, the sheer depths at which these systems must operate make regular maintenance a challenge.

When venturing into subsea activities – such as subsea compressor control, wellhead monitoring, process safety, manifolding, pump control, hydraulic power unit (HPU) control, high integrity pressure protection systems (HIPPS) and blowout preventer (BOP) control systems – oil and gas companies need to collaborate with experts in the field. According to Robert Ninker, regional director, Solutions Business, Rockwell Automation® Asia Pacific, the company has a team of over 1,000 project professionals focused on delivering integrated information, automation, safety and power systems for the oil and gas industry.

**Subsea Considerations**

A production system operating remotely on the sea bed creates a number of new and difficult challenges. At water depths of up to 3,000 metres, there are physical considerations associated with pressure and temperature. Ninker explains that Rockwell Automation systems have been miniaturised into Eurocard form factors so they can be more easily applied into nitrogen-pressurised subsea electronic modules (SEMs) that can be accessed or replaced by marine robots.

SEM packaging is smaller than a typical laptop computer case, so packaging the control electronics together with temperature and nitrogen gas pressure systems is not a trivial design issue. Also, there is the issue of electronic connections. Traditional connections cannot be used due to sea water exposure when SEM modules are swapped under water by a robot; therefore, optically isolating circuitry is used instead of traditional connectors.

Safety is also a key consideration. Some companies handle overall safety control from a topside system while others use a subsea approach. Ninker says, “We believe a mix of topside and subsea emergency shutdown (ESD) control is important and should be customised for the particular application. The balance between safety and system availability is determined from a hazardous operations safety study performed at the beginning of the detailed design process.”

Industry standards are used to determine the appropriate Safety Integrity Level (SIL) for a given application. The safety system architecture design then becomes clear. SIL 1 safety, for example, can generally be achieved using standard control hardware with basic diagnostics. To reach higher SIL ratings, the safety system architecture design must use multiple processors and much higher levels of diagnostics for higher system availability.

Rockwell Automation offers a control solution with scalability for simplex, redundant and triple modular redundant configurations. It can be integrated into other Rockwell Automation or even competitive architectures.
The Solution Set

For oil and gas applications, including subsea production, Rockwell Automation offers control, power, safety, information and global solutions. The company’s PlantPAx™ process automation system, for example, provides open, standards-based, multidiscipline control for continuous production. A common design environment helps users integrate information, control, power, safety and condition monitoring.

The scalable, information-enabled architecture feeds data from the wellhead to production planning systems via role-based dashboards customised for the application. Also, the system is equipped with common tools and interfaces to reduce training, start-up, commissioning and engineering time. Advanced process control functions enhance the performance of slow-response process loops to help maximise asset utilisation and accelerate troubleshooting to reduce downtime.

Intelligent motor control solutions help control, monitor and improve the efficiency of rotating assets. Fixed and variable speed control solutions, including low and medium voltage soft starters and drives, help protect motors from excessive wear and tear that can cause unexpected failures. Condition monitoring and motor control centre hardware and software offer real-time diagnostics and communications abilities to maximise equipment performance.

With regard to safety, Rockwell Automation provides a risk and safety assessment that helps to identify and mitigate risks through design, selection, deployment and support of the safety system based on the application. Modular, scalable SIL 1 through SIL 3-rated systems integrate with the PlantPAx system for access to safety system information. What’s more, flexible redundancy and triple modular redundant safety solutions meet or exceed industry regulations.

To improve decision-making capabilities, Rockwell Automation provides access to comprehensive operational information. Customisable dashboards, for instance, can pull data from disparate data sources and contextualise it for specific tasks and workflows.

Finally, the Rockwell Automation Global Solutions team collaborates with customers from project concept through implementation. The company’s services range from front end engineering design to consulting services to project management to remote support, asset management and training.

“There are very few automation suppliers in the world,” summarises Ninker, “that have such breadth and capability specifically for the oil and gas industry.”

MARINE CONTAINMENT

One area that Rockwell Automation® is playing a major role is in a first-of-a-kind marine oil containment system.

The 2010 oil spill in the Gulf of Mexico profoundly affected human and marine life, resulting in legislation that impacted the extraction and production of oil and gas in deep water off U.S. coasts. The incident highlighted the potential catastrophic results of an offshore oil well failure and the need for global oil companies to improve their ability to respond if a similar event should happen again.

Oil companies ExxonMobil, Chevron, ConocoPhillips and Shell joined forces to establish a new consortium, the Marine Well Containment Company (MWCC), whose mission is to respond to offshore oil spills at up to 3,048 metres (10,000 ft) underwater. As such, the company has collaborated on a Marine Well Containment System (MWCS) that allows the capture and containment of up to 100,000 barrels of fluid per day from a flowing well. It is also capable of flaring 200 million standard cubic feet of natural gas per day.

The centerpiece of the system is the capping stack. Approximately 9.1 metres (30 ft) tall and 4.2 metres (14 ft) wide, it weighs 100 tonnes. The capping stack provides a dual barrier for containment – a blowout preventer ram plus a containment cap. Valves can be closed to cap the well, or if necessary, the flow of liquids can be redirected to surface vessels through flexible pipes and risers.

The Rockwell Automation team collaborated on the part of the project involving the topside modules to process captured well fluids. The team faced an unprecedented 26 week schedule for the engineering, design, configuration installation and commissioning of the fully functional integrated control and safety system; four local equipment room (LER) buildings; low-voltage motor control centres and drives featuring ControlLogix®, and a safety system.

The scope of the project included configuring four LERs with motor control centres, variable frequency drives and building fire protection systems. In addition, the team installed an integrated control and safety system consisting of a process control system, emergency shutdown system, and fire and gas system.
Safety inspection prompts upgrade to aging cranes at Bayswater Power Station

To comply with safety requirements, Macquarie Generation’s Bayswater Power Station underwent a routine inspection of their aging cranes. Macquarie Generation called on the domain expertise of Rockwell Automation to deliver a solution for the cranes to meet current safety standards.

Macquarie Generation’s Bayswater Power Station in the Upper Hunter Valley area of New South Wales is one of two stations owned and operated by Macquarie Generation.

Each year Macquarie Generation produces approximately 13 percent of the electricity required by people in eastern Australia, making Macquarie Generation one of the country’s largest electricity generators.

Bayswater’s design reflects the progress and improvements in power generation technology to maximise efficiency and minimise environmental impacts. The most distinctive feature of Bayswater Power Station is the four evaporative cooling towers.

Over recent years Bayswater Power Station has produced approximately 15,000GWhs of electricity a year. This is enough power for 2 million average Australian homes and families.

Following a mandatory 25-year inspection Macquarie Generation recognised that two of the station’s overhead cranes required upgrades to their drive systems to meet current Australian safety standards and to address obsolesce issues.

With a commitment to the improvement of operation and technology upgrades, Bayswater Power Station called on the expertise of the Rockwell Automation Solutions team to project-manage, design, manufacture, install and commission a solution to meet the Company’s requirements.

The primary role of the cranes is for use during shut downs of the power station’s generators. Shutdowns took place once or twice a year depending on what was required when work was suspended.

According to Peter Tomazic, Solutions Consultant for Rockwell Automation, “The primary role of the cranes is to lift equipment in and out as required during outages. When the power station is running normally these cranes generally sit idle.”

A novel approach

Designing a cost-effective solution to customise the electrical system to fit through the manholes of the existing crane structures presented some unique challenges that would call on the domain expertise and risk management
expertise of Rockwell Automation.

During the risk assessment it was found that the cranes’ access manholes were not large enough to allow installation of standard gear plates or new control cabinets.

“We discovered post audit that we would be putting the new solution into a very crammed electric house,” said Tomazic.

The crane drive systems are usually pre-installed in cabinets and the existing electrics had all been mounted into the frame of the crane and access into it was much like a ship hole door. It appeared as if when the cranes were originally built there was a bigger opening and the manufacturer had then built around it.

“As a result of this, we had to cross off an earlier idea to design entirely new cabinets, which would have made the job much easier,” said Tomazic.

“Instead we decided to manufacture the insides of the electric drive cabinet in a manner that could be brought into the existing crane electrics and fitted into the existing cabinets once they were gutted.”

Rockwell Automation provided a custom designed and manufactured solution consisting of GuardLogix and PowerFlex DC drives mounted on custom-built gear plates for installation in the original crane cabinets.

### The innovative solution

The challenges presented in this project required something that was not simply an ‘off the shelf’ solution. According to Tomazic, “We are often awarded contracts that require our engineers to ‘scratch their heads’ a little bit to come up with the best solution.” Our local engineering team manages many upgrade projects to help reduce the customer’s risk, supplying projects on time and within budget.

Once the obstacle of a “crammed” electrics house was overcome by Rockwell Automation, Macquarie Generation was able to realise the outcomes it was expecting.

The GuardLogix® controllers allowed safety to be integrated into the system, and addressed what was required by current Australian Safety Standards for these applications. The solution also incorporated an innovative data logging capability within the GuardLogix system using the Historian ME module.

“The cranes’ operating data was previously difficult to record with the obsolete analogue system, so to fix that we provided a solution that was capable of logging the operating data of the cranes, which the company required for tracking crane usage,” said Tomazic.

### New life

The key outcome from this project is that it has reinvigorated Bayswater Power Station’s two cranes to safely and reliably take the station through many more outages.

Along with both cranes now adhering to current Australian Safety Standards, the design offers a fault tolerant system that does not compromise the safety of the crane in the event of a single failure.

According to SatishBusuapala, Acting Team Leader at Bayswater Power Station, “The project, awarded to Rockwell Automation in October 2011, took about a year to complete and Macquarie Generation is very pleased with the outcome.”

“The cranes they have been performing well since the upgrade by Rockwell Automation,” he continued.

Rockwell Automation attended to the whole lifecycle of the project from the safety risk assessment, to the design, manufacture and commissioning of the project.

“We needed to have the cranes certified for them to be at current standards and Rockwell Automation achieved that for the power station. Macquarie Generation would have no hesitation in working with Rockwell Automation again as further upgrades are required,” concluded Busuapala.
Evaluating Engineering Services

When projects increase beyond their scope, consider collaborating with an automation provider to protect your investment.

According to industry reports, annual global spending for engineering services is projected to reach US$1 trillion by 2020. That’s because many manufacturers are unable to perform automation services in-house.

Adam Howard, engineering, procurement and construction (EPC) project manager, Rockwell Automation®, explains that many customers expect automation solution providers to add value to the overall engineering solution. This is true today because many customers usually do not have the depth of in-house engineering expertise they once had available and are therefore reliant on the solution provider to support the project with their engineering expertise.

Rockwell Automation offers a comprehensive range of such services. These include project management, control and safety system solutions and upgrades, and detailed design. What’s more, the company provides full-site installation, commissioning and support capabilities.

Two capabilities in particular, front end engineering design (FEED) and main automation contractor (MAC), warrant further inspection. Delivered through the Global Solutions team, these services help customers accomplish what they could not do alone.

Building Value

FEED services usually occur at the beginning or front end of a project and can address everything from conceptual design and feasibility studies through decision-support packages, requirement specifications and major design documents. Typical FEED study categories include drive systems and solutions, continuous process control, building automation, discrete manufacturing, and mining and minerals processing systems.

In a MAC role, Rockwell Automation serves as the single point of contact to supply an integrated suite of electrical, controls and instrumentation services and products. The company identifies automation activities, develops execution plans, obtains resources and selects technologies.

FEED and MAC services – covering a breadth of industries such as oil and gas, mining and cement, automotive, tire and rubber, metals, infrastructure, chemical, beverage and brewing – can include:

- Provision of FEED documentation packs (development of Piping & Instrumentation Diagrams, Control Narratives, Instrument Indexes Construction & Engineering, etc.)
- Functional safety management
- Obsolescence studies
- Package equipment solutions and upgrades
- Preparation of requirement specifications for major equipment supply
- Management of major subcontractors
- Specification and provision of materials including: cable, cable management, special tools, site storage facilities, specialist third-party labor
- Provision of field instrumentation, including development of Instrument Data Sheets

When it comes to executing a major EPC project, Rockwell Automation does not engage in the civil, structural or mechanical disciplines – that’s the job of an EPC company. Instead, it works with and complements the EPCs and end users.

The Rockwell Automation team offers a full scope of engineering services and solutions that minimise risk and reduce the number of interfaces it takes to get the job done. Success is a result of several factors, one of which is early engagement. For
A powerful tool to optimise production operations, maintenance and sanitation; factors. These factors include setup, associated risk by evaluating various with machines and quantify the identify potential hazards associated proven, task-based methodology to experienced safety specialists utilising A risk assessment is performed by Automation offers risk assessments. management services, Rockwell Automation® can help. The company not know where to begin. But Rockwell is a huge task, and many companies do in manufacturing productivity, efficiency and the morale of employees and customers. Understanding the current risk level of one machine or an entire plant floor is a huge task, and many companies do not know where to begin. But Rockwell Automation® can help. The company has a global safety team of principle consultants to assist end users, integrators and OEMs at any step of a safeguarding project – from training and standards assistance through validation and startup.

As part of its functional safety management services, Rockwell Automation offers risk assessments. A risk assessment is performed by experienced safety specialists utilising proven, task-based methodology to identify potential hazards associated with machines and quantify the associated risk by evaluating various factors. These factors include setup, operations, maintenance and sanitation; process design; circuit architecture and guarding; awareness means (signs, beacons, markings); training and administrative requirements; and personal protective equipment (PPE).

At the completion of the risk assessment, customers receive a summary report with detailed documentation of analysis, results and recommendations for risk reduction. Report elements include the scope of risk assessment, machine overview and functional description, documented methodology, participants/interviewees; hazards lists based on human interaction with the machine and with associated risk reduction category assigned per hazard; potential mitigation techniques; and list of assumptions and/or notes made by the risk assessment team during the process.

A Rockwell Automation risk assessment includes the participation of technicians, operators and other appropriate staff members to gain a thorough understanding of machine-operator interaction and overall operating environment. The assessment is a repeatable process that will help provide long-term compliance with application standards by providing:

- Clarification of safeguarding, control circuit architecture and safety performance requirements
- Documentation of intent to produce a safer product or workplace
- A safeguarding baseline against which future inspections can be compared to confirm measures have been implemented and operate properly. Should a machine be modified, the assessment can be quickly updated to reflect any new hazards and mitigation plans
- Identification of potential hazards that other risk assessment methodologies may miss
- The impetus for technicians/ operators to help meet machine guarding requirements (through their participation in the risk assessment process).

In addition to risk assessments, functional safety management services include HAZOP/HAZAN studies, development of emergency shutdown (ESD) hierarchies, ESD cause-and-effect safety analysis and functional evaluations, and fire and gas detection philosophies. Detailed control and safety system design, system commissioning, and safety integrity level (SIL) analysis and targeting are additional capabilities.
MES Solution Smooths Information Flow in Cigarette Factory

A Chinese company relies on a manufacturing execution system (MES), implemented with the help of Rockwell Automation, to better improve its cigarette production operations.

The Hangzhou Cigarette Factory, located in eastern China’s Zhejiang Province, is a state-run company focused on continuous process improvements. Although the company has had an enterprise resource planning (ERP) system in place, it has experienced gaps in operation between enterprise management and production.

To address the issues and improve operations, this forward-thinking company decided to implement a manufacturing execution system (MES). Sitting between the ERP system at the top level and the automated management and control system at the bottom level, its functions would include accomplishing system integration, consolidating resources and information sharing, and establishing smooth information flow among materials management, production monitoring, quality management and shipping management. In addition, the MES system would provide track-and-trace capabilities for the cigarette production process.

The path to MES implementation was carefully planned and executed, thanks to a collaboration with Rockwell Automation®. A Rockwell Automation Global Solutions team worked closely with the Hangzhou Cigarette Factory team to develop the MES system architecture, functional modules and platform.

Straightforward Processes

Cigarette production at the Hangzhou Cigarette Factory is divided into two processes, primary processing and roll-packing. Primary processing includes slicing, cutting and blending operations while roll-packing revolves around the procedures of making-tipping and packing.

Primary processing is a flow-production process while roll-packing is a discrete one. Each has its own centralised control system.

From a system’s architecture perspective, the MES system acquires data from the automated management and control system, including the primary processing management and control system, digital roll-packing management system, logistics management and control system, and quality inspection equipment, as well as the power and energy system. It classifies, manages and analyses the data; acquires production data on a real-time basis; and implements integrated applications.

Through statistical analyses, the manufacturer can optimise quality and production as well as improve the utilisation rate of equipment and spare parts. The MES system also feeds data back to the ERP system to close the production loop.

The MES system is comprised of several functional modules including master data management, production management, process quality management, equipment management, shop floor management, real-time monitoring, batch management, power and energy, and user management. They allow for centralised command and scheduling of the production process by transferring top-level plans to the shop-floor production control site and feeding information back to the planning layer on a real-time basis.

The FactoryTalk® Production Centre® from Rockwell Automation is the development platform. It improves operational efficiencies by integrating with other application systems as well as shop-floor equipment.

As a mission-critical platform, FactoryTalk ProductionCentre is designed for industrial applications requiring real-time production management. It helps synchronisation between real-time production data and the ERP and product data management (PDM) systems. In addition, it helps to ensure continuous operation of shop-floor production in the event of unexpected circumstances.

Identifying Customer Needs

The scope of this project was immense. There were as many as 16 peripheral systems that directly or indirectly coordinated operations with the MES system.
In addition, the MES system was subject to the constraints of a large improvement plan encompassing construction, installation, equipment, fire prevention, information technology, products, review and acceptance management, and many other factors with overlapping impact. When there were changes or delays in the overall plan, work on the MES system was adjusted accordingly.

The Rockwell Automation team took these business challenges in stride. It helped the customer with establishing an internal project team and securing management support. The Rockwell Automation team also established strong communication with the Hangzhou Cigarette Factory team by having regular meetings with the stakeholders as well as providing status reports.

To fully understand the customer’s requirements, the Rockwell Automation team devised a three-part research survey. Part one focused on understanding the management structure, the business division’s scope of duties and the expectations for the MES system. Part two centered on confirming the business processes of the division. Part three investigated cross-divisional business processes.

### Project Risk Planning and Reporting

Another integral element in the Rockwell Automation team’s execution efforts was to identify the risks associated with implementing the MES system project. The project manager used the Rockwell Automation risk database to assess risks associated with multiple factors including technology, contract provisions, team/resources, project scope and progress of the project. Other factors evaluated included financial risk as well as regional political risks.

The project team followed this risk inventory to carry out auditing, using percentages to evaluate the probability and impact of risk factors.

Rockwell Automation’s project management methodology is based upon the Project Management Body of Knowledge (PMBOK®) by the Project Management Institute (PMI®). Goals, action plans and regulated process sequences are laid out and supervised, with the results subject to continual analysis and revision. PMI-certified project managers work to meet exacting standards throughout the project design, development and commissioning process.

Throughout the Hangzhou Cigarette Factory project, the project management office (PMO) requested that the project manager submit periodic reports. These reports included a summary of the project execution status, work completed in the current stage, work planned for the next stage, inventory of issues and open adjustments. To update members of the project team, this information was available on a document server, making it convenient for stakeholders to review the status of various aspects of the project.

The PMO reviewed reports on a monthly basis. They audited the degree of customer satisfaction, project status with regard to progress and completion, limitations in team resources and project modifications that could delay the project’s progress. The PMO also considered profits erosion, financial factors, cash flow analysis, and a list of issues that needed to be reported up to management. The PMO feedback was shared with the project manager, who used the information to guide the project’s forward direction.

### MES Online

Today, Hangzhou Cigarette Factory’s MES system supports the full formula production models and has completed system testing regarding the group processing production model. The MES system connects the ERP and PDM systems with the control systems, including the primary processing centralised control system, high-rack warehouse system, sugar and flavor kitchen system and roll-packing data acquisition system.

Information silos that previously existed are avoided through accurate and fast issuance of information and timely feedback of production data. With the implementation of MES, the data acquired by the individual systems in the process is centralised. In addition, through MES, the Hangzhou Cigarette Factory realised intelligent production dispatch, digital equipment operation and maintenance, and quality control as well as a traceable manufacturing process, real-time analysis and integrated plant management.

After the MES system came online, the customer expressed a high degree of satisfaction. In fact, it supported the Rockwell Automation project team to be nominated and contend for the PMI China’s 2012 distinguished project award.
Keeping Customers Productive

Rockwell Automation helps customers to minimise downtime and keep production lines running.

Lee, a maintenance manager at a large automobile manufacturing company, has been purchasing brand new control components for years to maintain his production line. Brand new control components are used to replace spoiled ones at the line as well as to stock up the maintenance storeroom. The spoiled control components, usually out of manufacturing warranty, are either piling up in an electrical maintenance workshop or in a corner storeroom. Lee has recently been tasked by his management to reduce his maintenance budget and contribute to the company’s on-going effort to help the environment.

John, a purchasing executive at the same company, is facing another issue. The company’s production line is old and equipped with legacy manufacturing systems. These items are hard to find, as most of them are already obsolete and not supported by OEMs.

The challenges that Lee and John are facing are not unique. They are common maintenance and repair concerns of global manufacturers. Fortunately, there is a solution available. The solution is to REPAIR.

Repairing spoiled control components can save companies hundreds of thousands of dollars annually. Besides availability of legacy parts and monetary savings, extending equipment life is good for the environment.

However, many repair services can be costly, may only fix the symptoms instead of the problem and have limited availability. The Rockwell Automation® Remanufacturing and Exchange Services – designed to repair Allen-Bradley® or Reliance Electric products – go beyond other repair services. Repaired products undergo proprietary remanufacturing processes. Depending on the service level selected, remanufactured equipment can include up to 12 months comprehensive warranty.

Benefits of Remanufacturing Services

The Rockwell Automation proprietary remanufacturing process extends equipment life and gets the unit back to a “like-new” condition. The product is updated with the latest firmware. Technicians implement engineering changes impacting safety, reliability or performance. In addition, they perform functional testing to bring the product up to current manufacturing standards.

Repairing products can be up to 50 percent less expensive than purchasing new equipment. Also, the repaired equipment comes with the same one-year warranty carried by new products.

In Asia Pacific, Rockwell Automation Services & Support operates remanufacturing centres in China, India, Singapore and Australia that remanufacture Rockwell Automation controllers, drives, motion controls, HMI, I/O modules and data collectors. When a product cannot be remanufactured locally, it is sent to remanufacturing centres globally, of which four are located in Asia Pacific.

To help shorten the turn-around time, the company has added the capability to remanufacture seven additional products in Asia Pacific within the last year.

In addition to the remanufacturing service, the company also provides customer exchange services, enabling customers to access a pool of remanufactured parts stocked in regional and global exchange hubs. The remanufactured parts are relatively cheaper than new parts. They come with the same 12-month warranty as new parts and can be available in shorter lead times.

Loh Kong Ngee, Rockwell Automation Asia Pacific operations manager, explains, “For the third consecutive year, we are relentlessly working on adding relevant stocks in our local exchange hubs and increasing capability to remanufacture more products locally. We continue to challenge ourselves in order to improve the response time of Rockwell Automation Remanufacturing Services.”
FactoryTalk View 7.0 HMI software improves process-system capabilities, information integration and usability

Manufacturers, particularly those in process industries, can gain increased functionality and an enhanced operator experience with the latest version of the FactoryTalk View human-machine interface (HMI) software from Rockwell Automation. FactoryTalk View Site Edition (SE) and Machine Edition (ME) 7.0 applications, released in early 2013, offer more efficient alarm management, simplified installation, improved user experience, and integrated data sharing in a wide range of production environments.

FactoryTalk View SE 7.0 software will support larger numbers of HMI clients and servers in a single system, increasing the size of systems that can support the FactoryTalk View SE alarming subsystem, FactoryTalk Alarms and Events.

The FactoryTalk Alarms and Events alarming subsystem has been enhanced to align with ISA’s Alarming Standard 18.2, and will now support the shelving state. The subsystem now also allows users to configure remote-alarming commands on display faceplates, saving crucial time when an operator needs to react to device alarm situations.

For run-time improvements, operators can more quickly and intuitively navigate screens and resolve production issues with a new navigation button that provides functionality similar to the navigation buttons in commercially available web browsers.

A new network-scoped option for FactoryTalk View SE Station software allows a single-computer HMI to better integrate with products, such as FactoryTalk Historian SE and ME software.

FactoryTalk View ME 7.0 software also delivers new ActiveX controls and runtime capabilities that allow operators to view diagnostic information for a PanelView™ Plus terminal, such as temperature, load, battery voltage and network IP settings directly on a display.

For more information, visit: http://discover.rockwellautomation.com/HMI

Taking the Cost Out of Connectivity

FactoryTalk® VantagePoint® Enterprise Manufacturing Intelligence (EMI) software enables companies to make more use of the data they already collect, minimising delays associated with typical manufacturing reporting.

FactoryTalk VantagePoint EMI organises, correlates and normalises disparate data from manufacturing and production processes and business systems in a Unified Production Model (UPM). The UPM provides the context by associating relevant data from numerous sources. Data is presented as information relevant to users’ roles and responsibilities within an organisation.

Manufacturing data is accessible in real time. The software provides connectivity to real-time data via FactoryTalk Live Data as well as historical data via FactoryTalk Historian – plus connectivity to other real-time and historical data sources such as FactoryTalk Metrics, FactoryTalk ProductionCentre® and FactoryTalk Energy Metrix™.

Included are preconfigured web reports, trends and dashboards such as key performance indicator (KPI) monitoring, alarm and event reports, control loop reports and devices/equipment reports. These help to save time and money.

With VantagePoint Mobile, notifications and reporting can occur anywhere and anytime. An event/notification system triggers actions including generating one or more published reports on a schedule and sending emails with attached reports based on intelligent filtering of event streams from FactoryTalk VantagePoint EMI sources. In addition, FactoryTalk VantagePoint EMI Portal enables users to view composite reports configured by dragging elements into zones on a portal page. What’s more, users can integrate VantagePoint reporting content as web parts on a SharePoint® page leveraging other collaboration tools from Microsoft®.


Security Appliance Performs Dual VPN and Firewalling

The Allen-Bradley® Stratix 5900™ security appliance delivers virtual private network (VPN) and firewalling simultaneously. These capabilities make the router well-suited for two application scenarios: securing cell/area zones, and connecting to a cell/area zone at a remote location over an untrusted network (i.e. Internet).

The Stratix 5900 security appliance, jointly developed by Rockwell Automation® and Cisco®, helps manufacturers build a unified, secure environment ranging from the enterprise to the end device on the plant floor. It allows machines to be isolated when communicating with other machines; VPN and firewalling make isolation possible, helping ensure that crucial production processes are not tampered with or interrupted. VPNs can also create a secure tunnel for server-machine communications to protect cell/area zones from other machines in the facility. Firewalling can monitor and block an input, output or system call that does not meet the firewall’s configured policy. When combined, VPN and firewalling create a more robust, secure network.

The router also enables manufacturing locations to connect to and communicate with remote outstations, whether 100 feet or 1,000 miles away, to securely talk to a plant-based machine. This is a common application for the oil-and-gas and water/wastewater industries where equipment dispersed across vast distances needs to communicate with others to operate a common process.

For more information, visit: http://ab.rockwellautomation.com/Networks-and-Communications/Ethernet-IP-Infrastructure
Crane Solutions for Improved Safety Operations
Crane and hoist solutions from Rockwell Automation® feature an integrated system using the Allen-Bradley® ControlLogix® controllers and PowerFlex® AC or DC drives.

The PowerFlex Hoist Drive system comes standard with closed-loop vector control, allowing for optimised control of the hoist and its connected load. The TorqProve™ feature assures that the mechanical brake has control of the load when stopping the drive and that the drive has control of the load when releasing the brake during a move command. In addition, the Load Float feature allows the connected drive to hold zero speed while holding the motor brake open.

Optional drive features include closed- or open-loop vector control; micro position with creep speed; and a fast stop feature that allows the load to stop as fast as possible, then sets the brake to reduce wear.

The Rockwell Automation Global Solutions Business offers extensive experience in developing hoisting applications suitable to users’ system requirements and environments. Crane solutions operate in, but are not limited to, industries such as oil and gas, marine, metals, paper and forest products, ports and material handling, paper, steel and general industry.

For more information, visit:

440G-LZ Guard Locking Switches
The Allen-Bradley® Guardmaster® 440G-LZ from Rockwell Automation is a guard locking switch designed for partial body access guard doors.

Combining microprocessor technology with an RFID coded actuator, the 440G-LZ features a locking bolt drive mechanism that will only lock when the correct actuator is detected. The locking bolt is continuously monitored for correct insertion within the actuator. This extra functionality allows the 440G-LZ to be TÜV certified to PLe, Cat. 4 – the highest level of safety for guard door position and lock monitoring – and can be connected directly or in series with other PLe, Cat 4 rated safety devices.

For more information, visit:

PowerFlex 6000 Drives Provide Variable-Speed Control
The PowerFlex® 6000 Variable Frequency Drives provide cost-effective solutions for 3/3.3 kV, 6/6.6 kV and 10/11 kV applications.

The drives, well-suited for use in centrifugal fan and pump applications, feature a Cascaded “H” Bridge Voltage Source Inverter topology providing low-input harmonics and near-unity power factor to minimise power system issues and maximise efficiency. Control and monitoring options make the systems flexible to use in various manufacturing control schemes.

Powerful diagnostics, easy troubleshooting and quick device replace time contribute to maximising up-time. High overall efficiency reduces ongoing operating costs.

For more information, visit:

Low-Voltage Motor Control Centers
The Allen-Bradley® CENTERLINE® 2500 Motor Control Centers (MCCs) enable users to leverage corporate standards and control schemes on a global basis, achieve a consistent integrated architecture standard and use uniform safety designs.

The MCCs feature a high-density, withdrawable unit design that minimises maintenance and downtime. EtherNet/IP connectivity with InteliCENTER® technology using NetLinx enables users to integrate with the Allen-Bradley Logix-based Integrated Architecture. Fully isolated enclosures provide for maximum arc containment; ArcShield™ helps to minimise arc flash hazards. Intelligent motor control options include across the line starters, soft starters and variable frequency drives.

For more information, visit:
http://ab.rockwellautomation.com/motor-control/motor-control-centers/iec-centerline-2500

Reduce Energy Consumption
Measurement & Verification Solutions from Rockwell Automation® allow users to monitor, manage and optimise energy usage, reducing overall energy costs.

Load Profiling, for example, measures and visualises energy usage for every demand interval, from distributed power monitors and other energy metres, and stores the data in a centralised database. Users can determine the load factor, identify peak demand period(s) and correlate consumption with facility activities.

Cost Allocation adds the functionality to allocate energy costs to a department, process or facility. The system can also generate reports needed to analyse and verify energy bills and tariffs for multiple utilities, including water, compressed air, gas, electricity and stream.

Energy Dashboards monitor key performance indexes relative to energy usage and production.

For more information, visit:
http://www.rockwellautomation.com/rockwellautomation/solutions-services/capabilities/sustainable-production/power-energy-management.page#/tab1
Address Critical Control and Safety Applications

The AADvance™ Fault Tolerant Control Systems are based on a distributed, scalable architecture that allows users to specify the level of safety integrity and availability needed throughout a plant.

The solution comprises both a hardware controller and a software environment. The AADvance concept is built on a set of fundamental requirements:

- Cost effective for SIL1-3 in the same system
- Appropriate for small to large I/O systems
- Scalable redundancy for fault tolerance
- Distributed processing power
- High performance regardless of size
- Simple single point configuration and system management
- Simple but complete integration between all AADvance enabled controllers including existing ICS Triplex proprietary systems as well as third-party, AADvance-enabled equipment.

The AADvance environment integrates AADvance-enabled controllers to work as a single solution. Only AADvance-certified controllers can interact on this network; however, non-safety devices are allowed to share the network infrastructure.

The AADvance workstation uses software that enables the user to design the complete control strategy as one, then to target parts of the strategy at each controller. Interaction between the resources is automatic, significantly reducing the complexity of configuration in a multi-resource solution.

Users can now choose the redundancy appropriate for them in all parts of the system, from fail safe through to fault tolerant. Controllers are specifically selected to meet the distribution needs and to accommodate the I/O required in any individual part of the network. The unique ability for many controllers to appear as a single system, without complicating the management of the configuration, also increases simplicity and ease of use.

For more information, visit: http://www.rockwellautomation.com/rockwellautomation/icstriplex/aadvance.page?#/tab5

Fault Tolerant Control System Couples Safety with Process Availability

ICS Triplex® Trusted® is a Triple Modular Redundant (TMR) controller used to minimise system trips and provide high availability, fault tolerance and fail-safe features as part of its safety-related functionality.

Users can fit 240 TMR I/O channels in a single Trusted controller chassis, including a spare processor, dual Ethernet and multiple serial communications capability. At the heart of each Trusted system is the controller chassis housing the TMR processor and eight slots for I/O modules, communications modules or interface modules to connect to expander chassis.

Trusted offers a wide range of dedicated modules, each designed to meet the SIL 3 requirement, for both analogue and digital signals. Modules have full “stuck on/ stuck off” signal testing, configurable line monitoring and front panel status indication LEDs for each channel.

Trusted can be powered directly from a single or dual conditioned 24V DC supply, or from AC power sources using a Trusted modular power system to provide redundant power feeds.

The Trusted product range includes the integration materials required to build and commission a working system. This helps reduce the risk of errors by system integrators and helps prevent maintenance problems. Trusted can also be integrated into a Rockwell Automation® PlantPAx® solution, which allows your technologies to communicate through one integrated network, creating a transparent flow of information.

For more information, visit: http://www.rockwellautomation.com/rockwellautomation/icstriplex/trusted.page?#/tab5
PowerFlex 520-Series AC Drives

The Next Generation of Powerful Performance and Flexible Control.
The Allen-Bradley® PowerFlex® 520-Series of AC drives is the next generation of compact drives offering a variety of features and time-saving benefits to help meet a wide range of global applications. PowerFlex 523 AC drives are ideal for standalone machines and provide motor control for applications up to 22 kW/30 Hp. PowerFlex 525 AC drives are ideal for networked machines and simple system integration, offering standard features including embedded EtherNet/IP™, safety and performance up to 22 kW/30 Hp.

By combining an innovative design, several motor control options, installation flexibility, communications, energy savings and ease of programming, PowerFlex 520-Series AC drives can help you increase your system performance and reduce your time to design and deliver better machines.

For more information, visit: http://literature.rockwellautomation.com/idc/groups/literature/documents/br/520-br001_en-p.pdf

PowerMonitor 5000

The Allen-Bradley® PowerMonitor 5000 is the premier power quality meter from Rockwell Automation. Building on core power and energy metering capabilities, the PowerMonitor 5000 takes energy monitoring to the next level with additional features including:
- virtual wiring correction capability
- sag/swell detection alert
- 10 conditional setpoints
- single cycle metering

This power meter is a scalable solution which can be fully integrated into a plant-wide network. When connected with other PowerMonitor 5000 meters, the patent-pending system event snapshot tool feature offers a system-wide event picture, allowing you to view the process upstream and downstream and gain the best understanding of your energy structure and potential impact to your equipment. This cutting edge meter provides detailed power quality data that, when used with FactoryTalk™ EnergyMetrix software, can offer you a powerful set of data analytics to understand and take action on power quality issues and energy management activities.

For more information, visit: http://ab.rockwellautomation.com/Energy-Monitoring/1426-PowerMonitor-5000

Connected Components Workbench Software - New V6 Released

Connected Components Workbench™ programming and configuration software supports the Micro800™ controllers, PowerFlex® drives, PanelView™ Component graphic terminals, and other select Allen-Bradley® devices. This software leverages proven Rockwell Automation and Microsoft® Visual Studio® technologies. Program your controllers, configure your devices, and design your HMI screens using this software.

For more information, visit: http://ab.rockwellautomation.com/Programmable-Controllers/Connected-Components-Workbench-Software

193 IEC E300 Overload Relays

The E300™ Electronic Overload Relay is the next generation electronic overload from Allen-Bradley®. Its modular design, communication options, diagnostic information, simplified wiring and integration into Logix make this the ideal overload for motor control applications in an automation system. The E300 Overload Relay provides flexibility, reduces engineering time and maximises uptime for important motor starter applications.

Simplified Logix Integration
With simple tools such as Add-On Profiles, Add-On Instructions and Faceplates; users can integrate the E300 Overload Relay into Integrated Architecture® with ease. Download the pre-programmed and pre-tested tools, copy and paste the desired portions into your project and configure the properties for your specific application.

Customisable
Multiple accessory options allow for the E300 Overload Relay to be customised to fit your application needs. Customers can expand out to 4 of the available Digital I/O modules, plus 4 Analog I/O modules along with a power supply and operator interface.

For more information, visit: http://ab.rockwellautomation.com/Circuit-and-Load-Protection/Motor-Protection/193-E300-Overload-Relays
VISIT ROCKWELL AUTOMATION AT THESE EVENTS: FEBRUARY - MAY 2014

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Personal contact is more than phone calls and e-mail. It’s people working together to develop unique solutions.

Take the guesswork and risk out of choosing your extended automation team.
Selecting a qualified Allen-Bradley Authorised Distributor brings you resources closely matched to your industry or application need.

To locate an authorised distributor in your region, go to: [www.rockwellautomation.com/distributor](http://www.rockwellautomation.com/distributor)
Integrated Architecture Tools: Connected Components Accelerator

The Connected Components Accelerator Toolkit provides the information you need to quickly and easily implement common control tasks into your machine design. With pre-configured Building Blocks, you can focus on machine design and performance, not programming and validation. As an OEM, you can leverage the automation engineering design tools for application development - helping you to differentiate your intellectual property and machines from the competition.

Accelerators are available on the IA Tools site: www.ab.com/go/iatools