Integrated Solutions and Services Help to Maximise Automation Investment

See page 6
EDITORIAL

Delivering Global Support – with a Local Address

Today’s manufacturers strive to be efficient even as plant assets age and capital investment funds decrease. Regardless of the industry, their goals are the same: to optimize the performance and utilization of automation assets to improve the top and bottom lines. Developing a strategy for support can help in these efforts.

Rockwell Automation® offers support and services in 80 countries and 20 languages. Our specialists meet the needs of customers who seek everyday technical assistance – such as online and phone support, training, repair services and on-site support – and those who require services for asset management, safety, energy, networks and security.

In Asia Pacific, our Services & Support group includes 340 employees and nearly 30 distributors – who stand ready to assist our customers.

Over the past several months, we have continued to bolster our Services & Support capabilities in the region. For example, our remanufacturing centers in China and India have increased their capabilities to cover a wider range of our products, including PanelView™ Plus graphics terminals. The Shanghai facility now also remanufactures Kinetix® servo drives. Our customers will benefit from faster turnaround times and shorter downtime.

In addition to servicing our own equipment, Rockwell Automation repairs the products of other manufacturers. Our suite of repair capabilities covers more than 200,000 pieces of equipment from more than 7,000 factory automation equipment manufacturers.

Last year, Rockwell Automation acquired Lektronix, one of the largest industrial automation repair and service providers in the world. Lektronix provides electronic automation repairs, spares and other maintenance services for most industrial automation products, including programmable logic controllers (PLCs), electric motor drives, industrial computers, robotics and computerized numerical control (CNC) equipment. Lektronix has a presence in Singapore and India, so we are now in a better position to repair a broad spectrum of industrial automation components locally in Asia Pacific.

Rockwell Automation also provides electrical, mechanical and automation controls training assessment and consulting services; and a full suite of asset management solutions. These and other services are designed to help our customers maximize the return on their automation investment.

We invite you to learn more about Rockwell Automation Services & Support in this issue of Automation Today Asia Pacific. No matter what industry you are in, or what systems you are running, we are here to help you protect your automation investment – and improve your top and bottom lines.

Bob Ruff, President
Rockwell Automation, Asia Pacific Region


**NEWS & EVENTS**

**Rockwell Automation Receives US$6 Million Order from Shipbuilder**

Daewoo Shipbuilding & Marine Engineering (DSME), a South Korean shipbuilder, has awarded a US$6 million+ order to Rockwell Automation® and its Global Solutions team. Rockwell Automation will provide emergency shutdown, fire and gas safety systems, and engineering services for four new DSME offshore drill ships, with options for three more ships.

Rockwell Automation will provide safety system technology using its PlantPAx™ process automation system, FactoryTalk® View human-machine interface software, AADvance™ fault-tolerance control system and project management expertise. Three orders have already been signed; additional orders are expected by mid-2012.

"Based on our long, successful relationship, we are confident in the ability Rockwell Automation has to provide the integrated information, control, power and safety systems we need for this important project," says H.G. Choi, director of purchasing, DSME.

Terry Gebert, vice president and general manager, Rockwell Automation Global Solutions, says, "Our solution is unique as it provides a single, flexible, scalable platform using the PlantPAx system to meet the specifications of an integrated control and safety system. Our experience, oil and gas domain expertise, and global resources will help DSME run a profitable and sustainable operation."

The Rockwell Automation Global Solutions team designs, builds and upgrades control, power, safety and information solutions for manufacturing clients. Collaborating with its PartnerNetwork™, the company's Global Solutions business addresses a range of projects, including challenging enterprise projects that span two or more countries.

**Customer Briefing and Competency Centre Opens in Australia**

Rockwell Automation recently opened a Customer Briefing and Competency Centre (CBCC) in Melbourne, Australia. The centre houses working models that demonstrate integrated, flexible and scalable automation systems operated by multidiscipline controls and the PlantPAx™ system.

"This new facility highlights plant-wide optimisation, machine builder performance and sustainable production solutions using a range of our advanced automation products and information architecture," says Bob Ruff, president, Rockwell Automation Asia Pacific. "Our customers, partners and others will be able to visualise the power of advanced technology."

Demo walls and mounted products are working models that showcase solutions including the Rockwell Automation Integrated Architecture™, process automation, connected components, intelligent motor control, information solutions, integrated safety, networks and more.

**BRIEFS**

**Rockwell Automation Named One of World’s Most Ethical Companies for Fourth Time**

For the fourth time, the Ethisphere Institute has recognised Rockwell Automation (NYSE: ROK) as one of the “world’s most ethical companies.” The Ethisphere Institute is a leading international think-tank dedicated to the creation, advancement and sharing of best practices in business ethics, corporate social responsibility, anti-corruption and sustainability.

In announcing its sixth annual selection of the world’s most ethical companies, Ethisphere’s 2012 list highlights organisations, including Rockwell Automation, that show leadership in promoting ethical business standards. Through in-depth research and a multi-step analysis, Ethisphere reviewed nominations from companies in more than 100 countries and 36 industries.

“A defining element that sets Rockwell Automation’s workplace apart from others is our culture of ethics, responsibility and accountability. At every level of the company, our 21,000 employees worldwide have an unwavering dedication to doing the right thing,” commented Keith D. Nobsuch, Rockwell Automation chairman and CEO. “Our global commitment to responsible business practices is absolute. For us, honesty, fairness, quality and responsiveness are guiding principles and integrity is an underlying value in every business transaction.”

The company has earned a world class reputation for its ethical business practices. The Ethisphere Institute has recognised Rockwell Automation on three previous occasions. Additionally, the Society of Financial Service Professionals recently honoured Rockwell Automation with its 2011 Wisconsin Business Ethics Award. The company is also a past winner of the Better Business Bureau’s Torch Award and an International Torch Award Finalist.

**Recognising Innovation**

Thomson Reuters named Rockwell Automation® to its 2011 Top 100 Global Innovator list. Its criteria were based on various facets of innovation that relate to patenting and science, including patent approval success rate, global reach of patent portfolio, patent influence in literature citations and over all patent volume.
Official opening of Rockwell Automation Head Office, Bayswater

After 25 years in the heart of Blackburn, Rockwell Automation—a leading global provider of industrial automation control and information solutions has moved its South Pacific headquarters to Mountain Highway in Bayswater. The $4M facility provides a modern customer training centre to support local and regional industry and conduct proof-of-concept demonstrations to clients. It also includes a dedicated project engineering staging area along with a test and repair facility.

"Bayswater is an ideal location for access to both local and regional customers. The new facility provides space for the growing team at Rockwell Automation and includes a Customer Briefing Room featuring an eleven metre wide display wall focussing on Plant Wide Optimisation and Machine Builder Performance," said Twain Drewett, Managing Director, Australia and New Zealand, Rockwell Automation.

The new premises were officially opened on 8th March 2012 with participation by the Parliamentary Secretary for Industry and Innovation, the Hon. Mark Dreyfus; the Hon. Heidi Victoria MP, Member for Bayswater; Tim Piper, Director Victoria, Australian Industry Group and Bob Ruff, President Asia Pacific, Rockwell Automation. Also in attendance was Ted Crandall, Senior Vice President, Finance and the entire leadership team from the Asia Pacific Region for Rockwell Automation.

Earlier in March, Rockwell Automation hosted a leading industry event—Rockwell Automation on the Move. Greg Combet MP, Minister for Climate Change and Energy Efficiency and Industry and Innovation opened this two-day event at Melbourne Park Function Centre. The event will then progress to Sydney (2-3 May), Brisbane (22-23 May) and Perth (6-7 June).

Rockwell Automation appoints Phillip Zhang as Financial Controller

Rockwell Automation has appointed Phillip Zhang to the role of Financial Controller, South Pacific. Zhang has a thorough understanding of Rockwell Automation business, coupled with extensive finance experience. These skills will help him implement the tools and strategies necessary to maximise the business opportunities in the region.

Previously based in Shanghai, China, overseeing the finance activities of two principal manufacturing sites and also leading the business management of the Global Command and Indication business, Zhang believes he has the knowledge and understanding required to provide accurate financial reporting, insightful business decision support, compliance and control. The move to Australia will allow Zhang to concentrate on his strengths as an active business partner and increase his exposure to cross cultural team management.

The key challenge will be to provide the company with insightful analysis of the company's business operation and performance in relation to the current economic climate. "It is important that as a company, we do not isolate our financial results from our business operations and overall economic environment. Our team is responsible for the information the senior management and key stakeholders need to make wise decisions," said Zhang. "Australia was fortunate not to have suffered significantly during the GFC, but we need to be sensitive to the economic environment and make the appropriate choices to grow our business."

"I hope to bring to the role a deeper understanding of business operations in the Asia Pacific region. This is not just in finance but in products, manufacturing, business development and culture," he said. "As Rockwell Automation continues to build its Finance Shared Service and Centre of Excellence hubs in the region, I hope to leverage the regional financial resources outside Australia, such as Singapore and China. It is a great challenge and I look forward to assisting in the continued growth of the company."
Melbourne hosts Rockwell Automation on the Move

Melbourne Park Function Centre was recently home to Rockwell Automation on the Move—a leading industry event that was attended by 780 Customers and along with Rockwell Automation and our Partners, boosting the number to over 1,000 people over two days. The event provided visitors the opportunity to explore new technologies and solutions that help address the economic, production and maintenance challenges in Australian manufacturing today.

The Melbourne Rockwell Automation on the Move was opened on Tuesday 6th March with the participation of the Hon. Greg Combet, Minister for Industry and Innovation and Climate Change and Energy Efficiency. Combet discussed the importance of supporting innovation to drive Australia’s productivity and competitiveness. “We are very fortunate to be in an advanced economy in the Asia Pacific region where there are great opportunities for growth in the future”.

The exhibition featured more than 1400 square metres of display space plus an additional three lecture rooms for presentations, interactive workshops and ‘hands on’ labs presented by industry experts and end-users. Key areas presented included the Rockwell Automation integrated architecture solution for network connectivity, process and power solutions, intelligent motor controls, software through what we have on display, what we talk about in our hands-on labs and what we talk about in our various technical sessions.”

The event provided industry professionals, manufacturers, OEMs, system integrators and third-party suppliers the valuable opportunity to meet, network and leverage complementary skills and knowledge.

Rockwell Automation on the Move will next be on in Sydney (2-3 May), and then Brisbane (22-23 May) and Perth (6-7 June). www.rockwellautomation.com.au

Save The Date • May 2-3, 2012 • 8:00 AM - 4:30 PM

You are invited to attend Rockwell Automation on the Move presented by Rockwell Automation in collaboration with our PartnerNetwork™ companies.

Sydney Showground
1 Showground Road
Homebush

For More Information
Contact: Tracy Elbourn - telbourn@au.rockwell.com
Tel: 02 9628 7239
Natalie Russo - natalie.russo@inace.com.au
Tel: 02 8841 2888
Visit: www.rockwellautomation.com.au

We’re pleased to announce that Rockwell Automation on the Move is coming to Sydney.

Learn how smart, safe and sustainable manufacturing provides can turn your marketplace challenges into advantages.

Take advantage of automation expertise from Rockwell Automation and our PartnerNetwork™, providing you with a comprehensive set of industry leaders in distribution, systems integration, machine building and complementary technologies.

Mark your calendar to join us in Sydney NOW, and watch for more details on how to register for the event.
Manufacturers and machine builders understand that time to market is a critical factor in gaining a competitive edge in the global economy. Ensuring that operations remain up and running enables companies to meet time-to-market demands as well as other key project, production and business goals.

Given the sophisticated nature of manufacturing equipment and systems, forward-thinking companies also recognise the importance of having access to prompt and comprehensive support for their components.

Rockwell Automation® offers a range of services and support that can help manufacturers maximise productivity and optimise plant assets. What’s more, the service and support can help to improve manufacturers’ financial performance.

Customer Care

Rockwell Automation has been listening to customers in Asia Pacific and around the globe. “We understand their pain points,” says Govind Sundararajan, Rockwell Automation Asia Pacific regional director of Services & Support.

That is why the Rockwell Automation Services & Support business unit has put into place multiple offerings for customers, ranging from online and phone support to onsite services to asset management.

Sundararajan explains that over a period of time, Rockwell Automation has built up capabilities to support customers with parts, labor and 24x7 technical support in local languages, as well as provide custom training. He adds, “We continue to invest millions of dollars in building field and telephone support capabilities. We have also built an infrastructure to remanufacture parts locally in multiple geographies across Asia Pacific.”

In addition, the company has added certified safety consultants who can perform safety assessments and provide solutions to help ensure that customers’ machinery complies with ISO, IEC and EN harmonised European standards as well as OSHA global machine safety standards. Furthermore, network security consultants conduct audits and implement remedial solutions so that automation and IT networks are secure.

Recent Initiatives

In the past, multinational companies were the customers that typically utilised Rockwell Automation Services & Support to lower their lifecycle costs. Today, manufacturers and machine builders in the region have set up plants with cutting-edge technology and are also seeking to improve their financial performance while protecting their budgets.

To meet these needs, Sundararajan explains that Rockwell Automation has launched several offerings:

- Assurance™ Integrated Support. This annual support agreement helps keep systems running by combining remote support, replacement parts and onsite service into one support agreement, available for one flat fee. Initially introduced in North America, the offering includes four service levels and will roll out in 2012 in Asia Pacific.
• **Asset Management Four-Step Approach.** In an effort to help customers gain more control of their asset lifecycle costs and increase reliability, Rockwell Automation has developed a disciplined four-step approach. First, an assessment takes place, in which Rockwell Automation professionals conduct audits on the state of customers’ assets. Next, Rockwell Automation and customers collaborate to design a strategy that mitigates their asset management risks. Then, together they implement a predictive maintenance and support system that carries out the strategy. The last step involves measuring and optimising results.

“Following this process leads to an increased level of collaboration and a co-ownership of customers’ asset management needs,” says Sundararajan.

• **Global Workforce Solutions.** Training continues to be important as manufacturers work to increase the consistency, experience and competency of their employees to improve enterprise-wide productivity and profitability. Through Global Workforce Solutions, Rockwell Automation collaborates with customers to provide electrical, mechanical and automation controls training.

“This is increasingly becoming popular with customers across Asia Pacific,” says Sundararajan. “We benchmark individuals’ competencies with the customer’s needs, identify gaps, customise training to fill the gaps and benchmark again to determine if individuals have attained the desired level of competency. This approach is process-driven as opposed to event-driven.”

• **Remote Support Services.** This group within Rockwell Automation has more interaction with customers than any other group. The company now uses multiple channels to communicate with customers including email, social media, web-based forums and help sites – as well as online service support chat.

• **Repair.** The global capabilities of Rockwell Automation in services and asset management have been augmented by the recent acquisition of Lektronix, one of the largest industrial automation repair companies in the world. Lektronix has a presence in Singapore and India, so Rockwell Automation is now in a better position to repair a broad spectrum of industrial automation components locally in Asia Pacific (see the article *Extending the Life of Automation Equipment*).

## Making a Difference

When Rockwell Automation Services & Support teams with the company’s Global Solutions group, customers come out ahead. Sundararajan points to Esteve Huayi Pharmaceutical (EHP), a joint venture between Esteve Química (EQ), a subsidiary of Spain’s second largest pharmaceutical company, and Yiwu Huayi Investment, part of the Huadong pharmaceutical group.

EQ wanted to expand its Chinese operations by opening a second manufacturing plant in Shaoxing to produce active principle ingredients for its Spanish factories, as well as export to Europe and the United States. The joint venture EHP wanted to shorten the project cycle as much as possible for its 200,000 cubic meter plant. Once in operation, the goal was to reduce plant downtime and integrate the manufacturing execution system in preparation for U.S. Food and Drug Administration (FDA) validation.

To execute this project, a multi-disciplinary team of technicians and engineers from Rockwell Automation Global Solutions, EHP and EQ collaborated in the first phase, preparing the functional design specifications. Once designed, delivery of the project was managed by the Global Solutions team in Shanghai, maintaining regular contact with EQ process automation specialists. The project included batch and process system architecture, hardware, software, panel fabrication, engineering, instrumentation, installation and validation.

Once the project was complete, the Rockwell Automation Services & Support team helped EHP support the new facility with Parts Management Agreements and TechConnectSM contracts. The goals were to keep the highly sophisticated plant up and running and the maintenance budget low.

According to Sundararajan, “Our services and support around this solution enabled EHP to maximise productivity, optimise plant assets and improve their financial performance. It is one of the examples that demonstrate how our team can help customers to meet their objectives.”
The Guangzhou Automobile Group Co. Ltd. (GAC Motor) operates in Guangzhou, the largest city in China's Guangdong province. Over the years, GAC Motor, which is among China's top 10 automakers, has formed joint ventures with global automakers, collaborating to supply their parts and build vehicles. In 2007, however, the company embarked on a journey to launch its own brand of passenger cars, with production scheduled to begin in 2010.

Phase I of the project called for GAC Motor to manufacture 100,000 cars and 150,000 engines annually. Phase II increased production to 200,000 cars and 250,000 engines annually. The long-term goal was to produce 400,000 cars per year.

To accomplish its goals, GAC Motor recognised the importance of implementing a strategic IT information plan from the start. The company collaborated with Rockwell Automation®, which helped it set up a manufacturing execution system (MES) solution to provide real-time information in three major areas: manufacturing process management, production logistics and distribution management, and production and manufacturing quality management.

The MES solution integrated with GAC Motor's enterprise resource planning (ERP) platform to create a complete information system.

Identifying Production Requirements

Before selecting a vendor to implement its MES system, GAC Motor identified five key production requirements. The most important requirement was a system that would enable the company to adhere to the concepts of lean manufacturing and balanced production.

Another key feature of the MES system was to enable the production line to support flexible manufacturing capabilities, such as providing simultaneous batch scheduling and mixed-line production of multiple models and multiple configurations. Next, GAC Motor required the MES system to help increase production efficiency, such as reducing production line stops.

In addition, the MES system had to provide plan-driven/production-driven lean logistics. For example, GAC Motor wanted to use final assembly to pull production of various upstream processes and to drive demand for parts and components through synchronous and semi-synchronous supply.

Finally, the MES solution needed to integrate with various kinds of equipment and control systems in processes such as production, logistics and quality. It had to tie into the ERP system to strengthen integration between the company's automation and information systems.

Careful Evaluation

GAC Motor reviewed the credentials of several companies. It understood that an MES system is customised to meet the needs of each manufacturer. As such, it was looking for a collaborator with proven system implementation experience. It was also searching for a collaborator with stable implementation and research and development (R&D) teams. GAC Motor found that Rockwell Automation possesses the required criteria and experience.

The company has more than 3,000 engineers in its R&D teams across Europe and the United States who are dedicated to optimising the Rockwell Automation MES modules and product platforms. In addition, its global engineering teams possess specialists in various industries, including automotive.

Rockwell Automation also offers a global Services & Support team that closely collaborates with customers to meet their needs. They use sophisticated project management methodology to develop detailed project implementation plans. Furthermore, they understand customers’ operational demands and can help plan for unexpected developments.

MES System Capabilities

To address the needs of GAC Motor, Rockwell Automation has tailored an MES system composed of several elements.

The scope of the system covers management of the production lines at four major process cells – pressing, welding and assembly, painting and final assembly. The MES system is also used in the engine workshop as well as equipment and production operations related to production lines.

An in-factory logistics system provides logistics management for the four major workshops and focuses on implementing logistics modes including batch, standard procurement system (SPS) and Andon, among others. Some parts for final assembly are sent directly from the supplier to the assembly line. The MES system also offers functions such as parts order placement, order acceptance, inventory management and pickup logistics.

The quality system component provides quality management for...
parts and complete vehicles, including received parts and parts/complete vehicles in manufacturing. It addresses safety issues, such as track and trace, and performs functions such as data analysis, statistics and report generation.

The AVI/Andon system enables users to visualise factory production information, monitor equipment and manage materials.

One of the challenges Rockwell Automation faced was to help ensure that the MES system and its related systems – networks, databases, etc. – remained in operation during the production process to help prevent downtime and significant losses. The MES system also had to streamline cross-system and cross-departmental business processes.

Zhang Yuahyuan, Rockwell Automation project manager, says, “By strengthening communication between the project team members and the user, we have successfully overcome these challenges and completed the project on time.”

Yuahyuan also pointed out several innovations related to the project. For example, the GAC Motor project was quite comprehensive, covering automobile manufacturing, logistics, quality and equipment management. The project also provided data integration among multiple machines and helped to centralise data management. In addition, the Rockwell Automation FactoryTalk® ProductionCentre platform was used to model the GAC Motor production management process.

**Exceeding Expectations**

According to Li Ki, CIO of GAC Motor, since the MES system went online in June 2010, it has exceeded the company’s expectations.

In particular, the company’s manufacturing process is now transparent and automated. The MES system and control technology help to balance the workloads, minimise bottlenecks in operational processes, and provide lean scheduling and manufacturing. Staff can track vehicle status in real time and collect equipment and process step information in real time. In turn, company managers of different levels can review the data and make intelligent production management decisions.

In addition, the logistics and distribution process has become more accurate. It is scheduled through system commands to provide nearly zero-inventory management, reduce logistics and inventory costs, and allow the accuracy rate of onsite logistics and distribution to reach 99 percent.

Also, quality management has become standardised. The quality management module of the MES system has been implemented to provide collection, tracking and tracing, early warning, error-proofing and statistics related to complete vehicles and parts throughout production, in accordance with the ISO/TS16949 automotive-related quality management system requirements. One-file-for-one-car quality archives have been established for vehicles produced during various stages. The complete-vehicle manufacture, one-time pass rate and suppliers’ parts distribution pass rates have been increased through quality data analysis, which has also provided accurate data for post-sales quality tracing and improved the accuracy of factory-wide system management.

Furthermore, the MES system is scalable. It enables GAC Motor to rapidly respond to future trends, such as production output increases and factory building expansions. In fact, the MES system played an important role in the production of the Everus S1, a Chinese branded, entry-level car manufactured in 2011 by Guangzhou Automobile Group Co. Ltd. and Honda.

“Great improvement has taken place in our business after employing the Rockwell Automation MES system,” says Li. “In summary, the production process has become automated and transparent, and the product manufacturing cycle time has been reduced. Product quality and logistics efficiency are improved, whereas our production costs have dipped. Lean management on manufacturing, logistics and quality is now a reality.”

---

**A COMPLETE PACKAGE**

Efficiency in the manufacturing process is a crucial factor in reducing overall time to market. The Rockwell Automation FactoryTalk® suite – which supports OLE for Process Control (a standard specifying the communication of real-time plant data between control devices from different manufacturers) – can help companies increase production while upholding the highest quality.

For the Guangzhou Automobile Group Co. Ltd., Guangdong province, China, Rockwell Automation customised a manufacturing execution system (MES) solution based on the following software:

- FactoryTalk ProductionCentre
- FactoryTalk VantagePoint
- FactoryTalk View, Site Edition
- FactoryTalk Historian

Rockwell Automation offers MES solutions for a range of industries including automotive, pharmaceutical, consumer goods, iron and steel, and chemical, among others. For more information on MES solutions and Rockwell Automation Services & Support, contact your local Rockwell Automation office.
Safeguarding Wellington’s water supplies

When the Greater Wellington Regional Council wanted to improve the reliability and operational flexibility of its Te Marua water treatment plant, it chose a ControlLogix process automation control solution from Rockwell Automation.

The reliable provision of clean water is essential for any large population. In the modern age, the pressure has never been higher for water authorities to be able to consistently meet variable consumer demands with safe, dependable water supplies. It is now commonplace for water treatment plants to run autonomously and, for this to be effective, a reliable process control system is needed to supervise plant activities. Through the 1980s, distributed control system (DCS) architectures were widely used to manage these processes. However, many of these systems are now reaching the end of their design lives, and consequently suffer from declining availability of spares, and waning access to technical assistance.

This was the situation faced by the Te Marua Water Treatment Plant in New Zealand. Functioning in parallel with two additional water treatment facilities, Te Marua supplies up to 50 per cent of Wellington city’s annual water consumption. The three plants are owned and operated by the Greater Wellington Regional Council (GWRC), and were all facing increasing problems sourcing spare parts and expertise for their legacy operating systems. In addressing the issue, GWRC decided to upgrade the 22-year-old DCS system at Te Marua to an Allen-Bradley ControlLogix programmable automation controller (PAC) from Rockwell Automation.

Standardised solution

According to GWRC Control Systems Development Technician, Philip Wilkie, the legacy DCS system had reached the end of its technical and commercial life. “Getting spare parts was an increasing problem, but the biggest risk was that there were progressively fewer specialists in New Zealand who could support the system,” he says. “A major fault onsite had the potential to seriously jeopardise the water supply for Wellington. We greatly needed an alternative process control solution with a ready supply of parts, and a good level of support.”

In addition to these requirements, the GWRC was looking for a solution that would be compatible with the existing human machine interface (HMI), which provides a common graphics package system-wide across the entire water distribution network. Moreover, it needed to be compatible with other reporting systems being run by the council, and provide a platform that could support future improvements and innovations. “We had reached a dead-end with the old system. We could not expand or develop the functionality as we were unable to efficiently write new code for the system,” says Wilkie. “With three plants each running a different control system, our goal was to bring these into line on a common process automation platform.”

The Allen-Bradley ControlLogix solution from Rockwell Automation proved an obvious choice. “It was the only option to meet all requirements for the three different plants,” says Wilkie. “ControlLogix has the most extensive control capabilities, and is—quite simply—the best automation platform in its class.”

The solution implemented is based on a redundant pair of ControlLogix processors, which are linked to the HMI/data network via Ethernet. “ControlLogix is rapidly emerging as an industry standard PAC for Water and Waste Water treatment plants in New Zealand,” says Rockwell Automation Industry Manager for New Zealand, Prasad Nory. “Furthermore, it is widely used across a broad spectrum of process control applications in industry, which means there is a great deal of expertise in the marketplace with these systems.”

Simultaneous operation

As the Te Marua treatment works cannot be taken offline for more than 12 hours without impacting Wellington’s water supply, it was essential to keep the existing plant running while the new control system was installed. “We decided to install the ControlLogix platform between the legacy DCS and the I/O it was controlling,” Wilkie
to complete the whole project in-house, use and program, and this enabled us to transition control one element at a time, and test each function of the new system as we progressed.”

Once the new hardware was installed, and all connections between the legacy DCS system, ControlLogix and the I/O thoroughly tested, it was possible to systematically turn off the DCS supervision to each element in turn. This was conducted in a live environment with no need for downtime.

As part of the upgrade, 40 peripheral programmable logic controllers (PLCs) were removed, and their functions assumed by ControlLogix. Additionally, 400 analogue and 4000 digital I/O points were also replaced using a combination of Allen-Bradley FLEX I/O and POINT I/O, linked to ControlLogix via a fully media-redundant ControlNet network. “One of the huge benefits of POINT I/O is that it is sufficiently compact to allow it to be squeezed into the cabinets alongside the legacy I/O,” says Nory. “This reduced the complexity of migrating control to POINT I/O, and helped significantly in maintaining the uptime of the system throughout the transition period.”

Successful switchover

Once the control functions for the valves, motors and pumps had been transferred to ControlLogix, the procedural functions—such as the dosing, filtering, sequencing and backwashing were also brought across from the DCS, one element at a time. The last stage was to transfer control of the main site inlet valve, and a range of chlorine instruments. This final cutover involved a plant shutdown of just four hours. In total, the transition of plant automation control from DCS to ControlLogix was accomplished in six months.

“I’ve been involved in a number of similar upgrades, and this has run the smoothest,” says Wilkie. “ControlLogix is extremely intuitive to use and program, and this enabled us to complete the whole project in-house, for a small fraction of the cost that it would have been if we had employed a third-party systems integrator.”

The advantages provided by ControlLogix were not limited to the transition phase. The system is inherently more reliable, and if faults do occur, they are easier to rectify. “Parts sourcing is simple and quick compared to the DCS,” says Wilkie. “The system support and industry expertise available for ControlLogix is also phenomenal. Having configured this system in-house, our own knowledge of the system is extremely good, and this gives us a much greater sense of ownership over it.”

The plant is now easier and more intuitive to operate, and provides a platform from which improvements can be made more readily. Energy and chemical costs onsite have already been reduced by an estimated 15 per cent, and greater familiarity by site personnel has allowed more functionality and performance to be leveraged from the system. For example, backwash time of the filters has been reduced from four to two hours, and maximum production capacity has potentially increased from 100 to 120 mega-litres per day.

Ongoing savings

Further enhancements are already underway at Te Marua—made possible by ControlLogix. As part of GWRC’s ‘water information system’, FactoryTalk Historian data-collection software and FactoryTalk VantagePoint data-reporting software from Rockwell Automation are currently being installed onsite. These will improve the delivery of documentation required by the council—especially Drinking Water Standard reports.

“We have many requirements onsite for data collection and reporting,” says Wilkie. “Until now, we have spent a great deal of time and resources on manually preparing reports. Now, with FactoryTalk Historian and FactoryTalk VantagePoint, we will be able to capture the data and prepare reports easily in a fraction of the time. We are expecting to save as much here in operational expenses, as we have with the process control improvements.”

The move to a ControlLogix platform has also opened the doors for incorporating advanced process control into the plant’s operations—especially with chemical dosing. One of the principal coagulants used onsite is Aluminium sulphate, and while the facility is already running a world-class system for ‘alum dosing’, Wilkie believes advanced process control offers the scope to further refine this.

“We are currently using an on-line spectrophotometer to monitor raw water quality and provide real-time prediction of the exact amount of alum required based on the measured concentration and type of organics in the raw water,” Wilkie says. “Traditional, feedback methodology often results in under - over-dosing. We anticipate usage reductions of alum—our biggest chemical cost on site—by as much as 20 per cent as a result of this new technology. The advanced ControlLogix platform we are now running will allow us to take full advantage of this information to ensure we are eliminating organics in the treated water to exactly the level desired.”

The upgrade to ControlLogix at Te Marua has been a resounding success, bringing new levels of reliability, functionality and controllability to the plant. “We are using this project as a template for upgrades at other water treatment works, and have already implemented the same PAC platform at our Waterloo plant,” Wilkie says. “The future of Wellington’s water supply is now assured by ControlLogix.”

![Jeremy McKibbin of GWRC inspects the installation of the Rockwell Automation ControlLogix system.](image)
Compressors play an integral role in the oil and gas industry, helping to power the multiple processes that convert oil and gas into thousands of practical products. Often, the compressors are not integrated into the control platforms of most petrochemical plants. Instead, compressor controls are housed in proprietary “black boxes” that are mounted in separate panels inside a plant’s command center. These panels usually contain customised instrumentation used to keep the plant’s turbomachinery operating within a normal range. The primary goal is preventing surge – sudden, destabilising flow reversals that can seriously damage the compressor itself and lead to costly repairs, plant downtime and even environmental consequences.

Today, many global oil and gas producers are abandoning their black boxes for programmable automation controllers (PACs). The PACs combine the features and capabilities of a PC-based control system with that of a typical programmable logic controller (PLC), as well as advanced digital technologies such as EtherNet/IP™ and predictive modeling analytics.

Control versus Surge
Rick McLin, Rockwell Automation business manager of Turbomachinery Controls, explains that the purpose of any compressor controller is to operate turbomachinery within safe parameters. Surge is the major enemy of safe compressor operation.

Surge occurs when flow rates suddenly decrease in the compressor due to human error or a change in downstream demand. While the flow reversal inside the compressor only lasts a short time, the resulting unstable pressure can introduce dynamic loads on internal components, such as seals and impellers. Over time, the fatigue on this equipment can lead to failure.

Anti-surge control can interfere with normal plant operations as it attempts to protect the compressor, often at the expense of the process. To address this, process-related functions, such as capacity control, have been incorporated in black boxes to lessen the impact of the anti-surge control and to smooth out process upsets.

Compressor Control Evolution
In the mid 1990s, oil and gas producers worked with control vendors to develop rudimentary pneumatic compressors, as well as electronic proportional-integral-derivative control systems. They helped minimise flow by adjusting process-control inputs. However, they also consumed a lot of energy. As a result, engineers began to focus on more energy-efficient compressor controls.

In the 1970s, distributed control system (DCS) and PLC platforms lacked the computational speeds necessary to generate a control output in less than 100 ms. As a result, engineers created specialised control hardware – the black boxes.

During the 1990s, government officials enacted stricter regulations to improve safety and environmental protections in many industries, including oil and gas. These changes began to reveal the various shortcomings of black boxes.

For example, changes and firmware revisions were seldom easy to implement and often required a redesign of the controls. Revisions tended to be expensive and could result in facility downtime unless integrated with planned maintenance.

Generic Control Platform Advances
Meanwhile, the PLC- and DCS-based control industry was developing new system architectures based on advances in computer-processing technology. These systems featured expanded computational power and
increased execution speeds, offering huge potential to improve operations and increase efficiency.

Black box vendors also added advanced features to their devices. However, the devices were developed on various proprietary platforms, so they were largely incompatible with one another. Supporting these multiple, incompatible systems increased costs for oil and gas producers and, as a result, limited their applications.

Frustrated by these limitations, end users pushed for a common set of programming standards to simplify system engineering and provide a consistent approach to control implementation. The result of these efforts was the international standard IEC-61131. Published in 1993 and updated in 2003, it is a family of programming languages for PLCs that is the most commonly used worldwide.

### Advantages of Today’s Control Platforms

This common computer language, combined with the availability of generic control platforms equipped with EtherNet/IP connectivity and high-speed modeling analytics, has made oil and gas end users think twice about investing in black box solutions. According to McLin, end users should consider these advantages to integrating their compressor control with their main platform:

- **Communications:** Generic platforms support common communications media, protocols and standards; some are even capable of wireless communications.
- **Scalability:** Black boxes have a fixed function and a fixed amount of I/O, so if a process changes, requiring additional functionality, many producers must add another black box. PACs, however, can be sized for each specific application. System changes and maintenance can be performed with common IEC-61131 toolsets, which ease operator training and minimise downtime.
- **Diagnostics:** PACs allow greater access to interpretation of controller data than black boxes with limited operator interface capabilities.
- **Redundancy:** With modern PACs, redundant and even triple modular redundant platforms are available, offering users access to whatever level of fault tolerance their application requires.
- **Spare Parts and Training:** Black boxes require expensive space components and trained personnel to maintain the systems. Because generic control platforms are used in multiple areas of a facility, oil and gas producers can implement a single hardware, training and technical support solution.
- **System Architecture:** The typical architecture approach for a turbine-driven compressor requires hard-wired communication interconnections to integrate each control function as well as an auxiliary PLC to handle lube-oil control, compressor seals, start-up sequencing, interlocks and permissive. If one piece of hardware fails or loses communications, the entire system may shut down. Generic platforms can integrate multiple tasks within a simple platform, which simplifies hardware interconnections and communications and lowers installation costs.

In summary, McLin says, “These open, generic platforms provide integrated network connectivity, more precise compressor control and easier scalability to match production demands. Black boxes are destined to become the dinosaurs of compressor control as oil and gas producers realise the full potential of integrated and automated process control.”

### CONTROLLING STEAM TURBINES

Rockwell Automation® has announced the Single Valve Steam Turbine Governor for single valve or single valve rack steam turbines. Built upon a common hardware platform, it uses the Allen-Bradley® CompactLogix™ control platform supporting an open architecture with a multitasking operating system. A full-color, Allen-Bradley PanelView™ Plus human-machine interface (HMI) enhances operator interface and provides valuable insight and control.

Designed to meet demands for application flexibility and reliability, the Single Valve Steam Turbine Governor offers a large HMI display, stainless steel enclosure and available purge kit. A simple menu-driven configuration replaces handheld devices. In addition, advanced troubleshooting and diagnostic information allow more control and can help increase uptime. Furthermore, enhanced control features can minimise the need for additional devices.

Available locally and supported globally, the Single Valve Steam Turbine Governor brings advanced technology and greater functionality to steam turbine control.
Extending the Life of Automation Equipment

Rockwell Automation Services & Support helps manufacturers optimise the performance of their automation assets.

As maintenance and capital investment budgets continue to shrink, many manufacturers recognise the value of repairing existing assets that malfunction or fail. Rockwell Automation® offers a range of repair and support services that address such needs, including remanufacturing, advanced exchange, parts management, renewal parts and a full suite of repair capabilities.

In 2011, the company continued to bolster its Services & Support business in Asia Pacific. According to Kong Ngee Loh, Rockwell Automation operations manager, Services & Support, Asia Pacific, the company had a quantum leap in deliverables focusing on customers and distributors. For example, it added services for rotatable exchange stock and invested in remanufacturing capabilities. In addition, Rockwell Automation acquired Lektronix, a service provider offering industrial automation repairs, spares and other maintenance services for most industrial automation products.

The goal of these efforts has been to improve service quality by increasing both speed and reliability of repairs – so that manufacturers can improve their bottom line.

Localising Remanufacturing Services

Rockwell Automation Remanufacturing Services are provided through 10 remanufacturing centres – which are ISO 9001/14001 certified – as well as nine exchange hubs and more than 300 sales and support locations worldwide. Over the past year in Asia Pacific, remanufacturing centres in China, India and Australia increased their capabilities to cover a wider range of products.

Customers in Australia are now able to have their ControlLogix products repaired locally in Melbourne. Julian Needham, Rockwell Automation CSM operations manager, South Pacific says, “This is the key differentiator within this region, and will help further improve our repair process lead time and quality to ensure we continue to deliver a consistent, repeatable remanufacturing service to our customers throughout the region. The remanufacturing capability will improve exchange hub parts availability and reduce lead time by 65%.” Previously, customers had to scrap the machines and replace them with new equipment, or send the units back to Rockwell Automation United States for remanufacturing. Doing so could take up to 90 days and involve export/import custom processes, duty costs and transportation time.

Now, units can be remanufactured on-site at the Shanghai facility in as little as 10 days, depending on the product. Nancy Li, Rockwell Automation business manager, Services & Support, China, explains, “Chinese customers can benefit from faster turnaround time as well as lower downtime cost with consistent global remanufacturing quality.” Similarly, customers in India now can get PanelView Plus products remanufactured at the Noida facility within 10 days or less. With the recent Melbourne offices relocation to it’s Bayswater facility, Customer Support & Maintenance (CSM) took the opportunity to design a purpose-built remanufacturing facility to help improve workflow and improve local capability to better service its customers. The state-of-the-art facility includes, dedicated work areas for

Rotatable Exchange Stock

In 2011, Rockwell Automation added 30 percent more high-turn rotatable exchange stock in China, Australia and India. In addition, it set up a new stock hub in Singapore to support Southeast Asia.

Distributors and customers benefit by using the exchange stock to keep their machines running, minimising downtime.

This year, the stock planning process will be further optimised in the region as Rockwell Automation collaborates with its product business units to better forecast stock levels and service customers.

MANAGING OBSOLESCENCE CHALLENGES

Rockwell Automation® has developed a support offering to minimise the risk associated with using older or discontinued Rockwell Automation products. The Lifecycle Service Agreement, soon to be released in Asia Pacific, consists of three unique services: Reserved Repair and Parts, Remote Support for Discontinued Product and OnSite Service for Discontinued Product.

Reserved Repair and Parts provides manufacturers a “reservation” that assures access to Rockwell Automation product replacement, remediation or repair for Rockwell Automation products included in the agreement – even when maintenance resources or spare parts are constrained or are unavailable to the general public. Remote Support for Discontinued Product provides unlimited Web support for obsolete or discontinued Rockwell Automation products included in the agreement. OnSite Service for Discontinued Product provides annual preventive maintenance services, migration and conversion-planning support on Rockwell Automation discontinued products included in the agreement.
In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.

In Asia Pacific, remanufacturing centres in Australia (left) and India (right) increased their capabilities to service a wider range of products. Customers benefitted by lowering their downtime costs and receiving quick service turnaround on products such as PanelView Plus terminals and ControlLogix products.
EtherNet/IP: Enabling seamless communication, control and flexibility at all levels

As ‘enabling technologies’ go, EtherNet/IP is revolutionising the industrial automation and control market thanks to its standard, unmodified approach to Ethernet-based communication across the entire installation... from device level all the way up to enterprise level.

It is EtherNet/IP’s unmodified approach that makes it so powerful; surpassing other ‘standards-based’ protocols in terms of flexibility and ease of implementation. Unlike other proprietary approaches, different networks are often required for different elements of the automation installation, such as motion, control and safety.

EtherNet/IP on the other hand has been developed to provide all of this capability on a single network. And, when installed as part of a Rockwell Automation Integrated Architecture installation, only one programming environment is required; drastically reducing the costs and times associated with multiple-network, multiple-platform applications.

By offering drive, motion, safety and I/O control on the same unmodified Ethernet as the front office, organisations can better exploit their exiting IT infrastructure by making it work harder and more effectively towards their business goals.

Rockwell Automation highlights four primary areas where users benefit from an EtherNet/IP-based approach...

**Automation control with IT integration**

By sharing a common network, the automation infrastructure and a plant’s existing IT infrastructure can co-exist and share data in an incredibly effective manner. This data can then be used to define and create up-to-date metrics such as Overall equipment effectiveness (OEE), energy management and the creation of performance dashboards, which can give an instantaneous window into a process or down to a machine’s current performance.

**High-speed synchronised motion control**

CIP Motion over EtherNet/IP provides real-time, deterministic, closed-loop motion control and, with the addition of CIP Sync, multiple axes can be coordinated. By using time-
stamped data along with its simple timing model, it eliminates any hard synchronisation constraints between the drive and the controller. Real-time data values are adjusted at the end device at the time the data is applied; there is no need to hard schedule the network traffic.

Integration of automation and safety control

The integration of safety and standard control in one network provides the opportunity to utilise common tools and technologies whilst benefiting from reduced costs associated with design, installation, commissioning and maintenance. This allows users to integrate their safety networks into the same Ethernet architecture used by standard control devices and the rest of their enterprise. Since this uses the same switches and infrastructure as standard EtherNet/IP, the cost to add this safety is minimal.

Process device integration

As well as offering comparable performance levels to other device-level protocols, such as Profibus and Foundation Fieldbus, EtherNet/IP also allows higher-level communications without any additional gateways or intermediate hardware and software. It is these capabilities that are prompting an increasing migration within process companies towards and EtherNet/IP-driven infrastructure.

The bigger picture

The benefits go beyond connectivity – using a single EtherNet/IP network creates a common platform for a machine’s configuration, programming, commissioning, diagnostics and maintenance. Using a common network, they can meet all of their machine’s control and information needs, connect to the end-user’s infrastructure and provide secure remote access for value-added monitoring and maintenance. EtherNet/IP provides more powerful diagnostics and troubleshooting capabilities. Bringing commonality to the network architecture helps machine builders cut costs and complexity while taking integration to the next level.

This real-time information – along with remote access capabilities – helps keep machines up and running. EtherNet/IP enables machines to relay the condition data back to the machine builder, who can then provide secure, remote diagnostics. By taking vital action before a machine fails, machine builders and their customers save time and money.

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 Rockwell Automation Authorised Distributor brings you resources closely matched to your industry or application need.

Go to http://www.rockwellautomation.com/distributor/
EHP Keeps Plant Operation Costs Low

Pharmaceutical company reduces its maintenance costs through a Rockwell Automation Parts Management Agreement.

The Rockwell Automation Parts Management Agreement helps to ensure the availability of EHP's spare parts while stabilising its maintenance budget.

Effectively managing a company's spare parts inventory is critical to reducing unplanned downtime and improving the bottom line, especially in applications where uptime is critical. That is why Esteve Huayi Pharmaceutical (EHP) Co. Ltd., a joint venture between Spain's Esteve Pharmaceutical Group and China's Hangzhou Huadong Medicine Group Co. Ltd., collaborated with Rockwell Automation® to implement an asset management solution that met its needs.

A Turnkey Solution

EHP develops, manufactures and sells active pharmaceutical ingredients (APIs) – the chemicals used in the manufacture of medications – to companies in Asia Pacific, Europe and the United States. The company built its first Asia Pacific API facility in China's Shaoxing, Zhejiang province.

Rockwell Automation successfully won the US$4.3 million bid to deliver an automation control solution using standard off-the-shelf products with minimal custom programming for design implementation, testing and execution. Through the PMA option, Rockwell Automation owns and manages EHP's spare parts inventory for a fixed cost. As such, overall expenses are lower than the warehouse rental fees, property taxes, asset loss, management, insurance and purchasing expenses for the inventoried spare parts that must be considered when handling one's own spare parts. In addition, EHP can replenish its inventory in accordance with Rockwell Automation parts remanufacturing and updating agreements.

Besides addressing EHP's spare parts and maintenance requirements, the PMA service improves the company's cash management. It minimises large capital outlays of purchasing spare inventory, freeing up cash for other areas of spending.

Today, EHP's spare parts are in storage, providing peace of mind in the event of equipment failure, and the project has officially entered into its implementation stage. By selecting the Rockwell Automation PMA service, EHP estimates that it can save significantly in maintenance costs on the new facility. Other benefits include increasing uptime and maximising production.

With Rockwell Automation capabilities for design, implementation and support, the plant system is working well and provides a positive return on investment. What's more, the system can be “grown” as the needs and requirements of the plant – and its equipment – change throughout its lifecycle.

The scope of the EHP project ranged from hardware and software for the control system to engineering services, project management and validation documentation.

As Phase 1 of the project was nearing completion, Rockwell Automation project managers introduced EHP to their Services & Support team. EHP was interested in learning how Rockwell Automation could help the company reduce plant downtime; maintain the sophisticated, high-tech plant; maintain parts inventory; provide support during operation; and keep maintenance costs as low as possible.

In terms of operation, the automation system controls production equipment in the chemical synthesis workshop, refining-drying-packing workshop, and hydrogenation and mid-stage testing workshop. Any halt in production due to failure of electrical controls would result in significant economic losses that would be difficult to calculate. Therefore, developing a strategy for control system spare parts management and related services was a top priority for EHP from the beginning.

Smart Asset Management

The Rockwell Automation Services & Support team presented several service options to EHP including the Parts Management Agreement (PMA), TechConnect™ global network of Technical Support Centres and resources, extended warranty and embedded engineers, to name a few. Among the services EHP initially selected was the PMA option.

The PMA service provides quick access to spare parts while reducing the operating costs to maintain and manage the spare parts inventory. In EHP's case, the PMA service covers not only Rockwell Automation products but also those from many other automation brands, offering the ease of a single-source solution.

Through the PMA option, Rockwell Automation owns and manages EHP's spare parts inventory for a fixed cost. As such, overall expenses are lower than the warehouse rental fees, property taxes, asset loss, management, insurance and purchasing expenses for the inventoried spare parts that must be considered when handling one's own spare parts. In addition, EHP can replenish its inventory in accordance with Rockwell Automation parts remanufacturing and updating agreements.

Besides addressing EHP's spare parts and maintenance requirements, the PMA service improves the company's cash management. It minimises large capital outlays of purchasing spare inventory, freeing up cash for other areas of spending.

Today, EHP's spare parts are in storage, providing peace of mind in the event of equipment failure, and the project has officially entered into its implementation stage. By selecting the Rockwell Automation PMA service, EHP estimates that it can save significantly in maintenance costs on the new facility. Other benefits include increasing uptime and maximising production.

With Rockwell Automation capabilities for design, implementation and support, the plant system is working well and provides a positive return on investment. What's more, the system can be “grown” as the needs and requirements of the plant – and its equipment – change throughout its lifecycle.
High-Frequency RFID System Tracks Components

Rockwell Automation® now offers a high-frequency 13.56 MHz ICODE industrial radio frequency identification (RFID) system with an EtherNet/IP™ interface. RFID components track and document products as they move through the manufacturing process. Unlike bar code systems used for similar, less demanding applications, industrial RFID systems are designed to withstand harsh environments. Components include interface blocks, which receive data from transceivers and transmit the data to PLCs; transceivers, which gather tag data and send it to the EtherNet/IP interface; tags, the memory storage devices that can be read and written to; and handheld interfaces, accessories used to manually read/write tags. Components are designed to meet the ISO 15693 open standard for high frequency.

For more information, visit:
http://ab.rockwellautomation.com/Sensors-Switches/RFID/

Connected Components Workbench Software Release 1.1

Connected Components Workbench™ Release 1.1 has been localized for Simplified Chinese and French. With this free, downloadable software, users can program the latest Micro800™ PLCs, PowerFlex® 4 Series drives and PanelView™ Component human-machine interface with just one platform. This updated software release supports the Microsoft Windows 7® 64-bit operating system. In addition, it is easier to debug user-defined function blocks. Import/export also has been enhanced to include global variables. The software can be downloaded for free from the Rockwell Automation website.

For more information, visit:
http://ab.rockwellautomation.com/programmable-controllers/connected-components-workbench-software

New RTD/Thermocouple Temperature Control Modules for Micro830 Controllers

Rockwell Automation® enhances the functionality of the Micro830™ controller while keeping the size and cost to the minimum. The new Resistance Temperature Detector/Thermocouple (2080-RTD2 and 2080-TC2) plug-ins enhance its functionalities by offering temperature measurement, transforming it into a single-loop temperature controller when configured with a PID instruction in Connected Components Workbench™ Software.

For more information, visit:

Safety Switch Provides an Integrated Solution

The Allen-Bradley® 440N-Z SensaGuard™ Non-Contact Switch with a magnetic integrated latch combines a non-contact interlock switch and door latch into one integrated solution. It replaces separately mounting an interlock switch and door catch in lightweight guard doors. The switch features the latest RFID technology for coding, inductive technology for sensing and output switching signal device (OSSD) safety outputs. It is available with a uniquely coded sensor and actuator to help protect against operators or maintenance personnel defeating the switch, helping to enhance safety. In addition, an LED on the switch provides diagnostic status.

For more information, visit:
http://ab.rockwellautomation.com/Sensors-Switches/Safety-Interlock-Switches/SensaGuard-Non-Contact-Interlock-Switches

Connect Quickly between I/O Device and Controller

Quick Connect (QC) is an added functionality of EtherNet/IP™ that allows for quick connection between the controller and an Allen-Bradley® ArmorBlock® QC module (within 500 milliseconds). There are a total of three ArmorBlock QC modules that are available for use with the Allen-Bradley ControlLogix® L7, Allen-Bradley GuardLogix® L6, or third-party controller. Each ArmorBlock QC module is equipped with dual-port Ethernet for linear topology, as well as a dual-port auxiliary power connector for daisy chaining of 24 VDC power.

For more information, visit:

Move Industrial Controls and Hardware Closer to Applications

On-machine solutions are based on a control-design philosophy that moves industrial controls and I/O devices closer to the application or on the machine. This allows for increased speed of installation and simplicity of control applications. The new Allen-Bradley® Slim ArmorBlock® modules now come in a smaller footprint and continue to provide dual-port Ethernet for linear topology, as well as dual-port auxiliary power connectors for the daisy chaining of 24 VDC power. A total of seven new digital and analog I/O modules will be released.

For more information, visit:
Tool Calculates Potential Energy Savings of Variable Frequency Drives

A new energy saving calculator tool from Rockwell Automation® allows manufacturers to use mobile devices or computers to calculate potential energy savings derived from variable frequency drives to power pumps and fans. With this tool, users can compare conventional methods, such as valves for pump control and dampers for fan control, to variable frequency drives and see estimated cost savings of installing an Allen-Bradley® PowerFlex® drive. The tool offers two ways to calculate energy consumption. Users can enter the minimum pump or flow percentages, annual operating hours, cost per kilowatt and other information about their own factory. Or, they can use the sample data provided by Rockwell Automation built into the tool. The energy savings calculator is part of the Rockwell Automation Intelligent Motor Control portfolio.

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

1794-AENTR EtherNet/IP Communication Adapter Module

The FLEX™ I/O Dual Port EtherNet/IP Communication Adapter Module (1794-AENTR) includes two EtherNet/IP™ ports configured as embedded switches that support not only the conventional star and tree topologies but also the daisy chain and Device Level Ring (DLR) topologies. The DLR topology provides a level of communication redundancy that enhances product availability. DLR also reduces and simplifies network wiring.

It can connect up to 8 FLEX I/O modules per adapter module. The extreme environment (1794-AENTRXRT) version of the communication adapter module operates in a broader temperature spectrum, -20°C to 70°C, and provides a solution for extreme environment applications.

FLEX I/O is a cost-effective, flexible, modular I/O system for distributed applications and offers the functions of larger rack-based I/O without the space requirement. Users can independently select the I/O type, termination and network. With more than 110 catalog numbers and a breadth of specialty modules, FLEX I/O offers support for hundreds of applications. Its features and reliability are why more than 10 million of the modules have been installed by machine builders and automation end-users worldwide.

For more information, visit: http://ab.rockwellautomation.com/IO/1794-FLEX-I0#/tab5

Preserve Existing SLC/IO While Leveraging a Logix Platform

The 1747-AENTR adaptor enables users migrating from an SLC™ controller to a Logix platform to preserve their SLC/IO. It allows SLC I/O racks to be controlled by Logix controllers.

The adaptor must be located in the first slot of an SLC rack. In the migration process, it replaces the existing SLC processor and the existing RIO adaptor (1747-ASB) or CNET adaptor (1747-ACN15, -ACNR15) in remote racks. The adaptor requires RSLogix™ 5000 V20 or greater.

It uses the EDS AOP capability of V20 and recognises modules with an EDS. In addition, it supports Ethernet Device-Level Ring network, allowing for ring, star and linear Ethernet topologies.

For more information, visit: http://ab.rockwellautomation.com/Programmable-Controllers/SLC-500-Communications

Allen-Bradley PowerFlex 755 AC Drives Feature High Voltage and Output Power

Rockwell Automation® has extended the power range of its PowerFlex® 755 AC drives to 900 kW and added 600/690 volt ratings. The new drives, suited for heavy industrial applications, provide users with increased application flexibility, advanced diagnostics and a common DC bus option.

The PowerFlex 755 is designed for applications ranging from simple variable speed and variable torque control to the most demanding systems requiring constant torque control. Applications include fans, pumps, mixers, compressors, conveyors and extruders.

Like other PowerFlex 755 drives, this latest frame size includes an embedded Ethernet port and five option slots so that users can tailor it to their applications. Optional modules include I/O feedback, safety, additional communications and an auxiliary power supply.

A roll-out design allows easy access to the drive for fast installation and maintenance. The drive’s converter and control pod can remain in the unit while the inverter is rolled out so that control wiring can remain connected.

In addition to the extended power range, a firmware upgrade for PowerFlex 755 drives will contain Interior Magnet Motor Control, which delivers increased application flexibility and high-energy efficiency. Also, a Stop Dwell feature helps prevent a motor from coasting to a stop; it allows users to preconfigure the motor to perform a controlled stop to help protect valuable motor investments.

For more information, visit: http://ab.rockwellautomation.com/Drives/PowerFlex-755

1794-AENTR EtherNet/IP Communication Adapter Module

The FLEX™ I/O Dual Port EtherNet/IP Communication Adapter Module (1794-AENTR) includes two EtherNet/IP™ ports configured as embedded switches that support not only the conventional star and tree topologies but also the daisy chain and Device Level Ring (DLR) topologies. The DLR topology provides a level of communication redundancy that enhances product availability. DLR also reduces and simplifies network wiring.

It can connect up to 8 FLEX I/O modules per adapter module. The extreme environment (1794-AENTRXRT) version of the communication adapter module operates in a broader temperature spectrum, -20°C to 70°C, and provides a solution for extreme environment applications.

FLEX I/O is a cost-effective, flexible, modular I/O system for distributed applications and offers the functions of larger rack-based I/O without the space requirement. Users can independently select the I/O type, termination and network. With more than 110 catalog numbers and a breadth of specialty modules, FLEX I/O offers support for hundreds of applications. Its features and reliability are why more than 10 million of the modules have been installed by machine builders and automation end-users worldwide.

For more information, visit: http://ab.rockwellautomation.com/IO/1794-FLEX-I0#/tab5

Preserve Existing SLC/IO While Leveraging a Logix Platform

The 1747-AENTR adaptor enables users migrating from an SLC™ controller to a Logix platform to preserve their SLC/IO. It allows SLC I/O racks to be controlled by Logix controllers.

The adaptor must be located in the first slot of an SLC rack. In the migration process, it replaces the existing SLC processor and the existing RIO adaptor (1747-ASB) or CNET adaptor (1747-ACN15, -ACNR15) in remote racks. The adaptor requires RSLogix™ 5000 V20 or greater.

It uses the EDS AOP capability of V20 and recognises modules with an EDS. In addition, it supports Ethernet Device-Level Ring network, allowing for ring, star and linear Ethernet topologies.

For more information, visit: http://ab.rockwellautomation.com/Programmable-Controllers/SLC-500-Communications

Tool Calculates Potential Energy Savings of Variable Frequency Drives

A new energy saving calculator tool from Rockwell Automation® allows manufacturers to use mobile devices or computers to calculate potential energy savings derived from variable frequency drives to power pumps and fans. With this tool, users can compare conventional methods, such as valves for pump control and dampers for fan control, to variable frequency drives and see estimated cost savings of installing an Allen-Bradley® PowerFlex® drive. The tool offers two ways to calculate energy consumption. Users can enter the minimum pump or flow percentages, annual operating hours, cost per kilowatt and other information about their own factory. Or, they can use the sample data provided by Rockwell Automation built into the tool. The energy savings calculator is part of the Rockwell Automation Intelligent Motor Control portfolio.

For more information, visit: http://www.rockwellenergycalc.com/
Generate Enhanced Manufacturing Intelligence

New Rockwell Software® FactoryTalk® VantagePoint 4.0 software includes enhanced connectors, configuration and reporting tools to reduce the time, complexity and cost of developing meaningful reports, visualisation and analytics for manufacturing operations. Enhancements focus on simplifying the end-user experience, connectivity to additional Rockwell Automation® products and providing native integration to Microsoft SharePoint 2010. This brings an opportunity to expose plant floor data to the enterprise as well as other capabilities like business intelligence, collaboration and communications typically not found in a real-time manufacturing operation.

FactoryTalk VantagePoint software connects to disparate data sources – real-time, historical, relational and transactional – to create a single resource that can access, aggregate and correlate information into a common unified model that allows trends, reports and dashboards to help customers make fact-based decisions. FactoryTalk VantagePoint web-based dashboards and reports monitor key performance indicators and help empower users at every level of an enterprise to better manage their operation in real time.

For more information, visit: http://discover.rockwellautomation.com-IS_EN_Intelligence_FactoryTalk_VantagePoint.aspx

Process Tool Measures Variables Difficult to Monitor

PlantPAx™ ModelBuilder is a data modeling tool that predicts real-time process and product conditions critical to peak performance. Using Soft Sensor models, the tool virtually measures variables that are difficult to accurately or cost-effectively monitor by physical devices. These online predictive models supplement complex analysers or traditional laboratory measurements and can keep production on track by supplying feedback in minutes rather than hours. This fast time-to-value decreases off-spec production and raw material waste by identifying process errors before they occur.

The PlantPAx ModelBuilder system is suited for process industries with highly variable product or feed-stream quality. This includes processes that continuously operate against a single constraint, and produce the same product with the same feed at the same production rate.

PowerFlex® Drives
Powerful Performance. Flexible Control

For more information, visit: http://www.rockwellautomation.com/PFLEX-SP015A-EN-P – September 2011 Copyright © 2011 Rockwell Automation, Inc. All Rights Reserved. Printed in USA.

FOUNDATION Fieldbus Linking Device

The Hiprom redundant FOUNDATION fieldbus linking devices provide a link between EtherNet/IP™ and ControlNet™ to FOUNDATION fieldbus H1 network, leveraging the hardware used in the 1788-HIP-EN2PA-R module.

The devices integrate with Rockwell Software® RSLogix™ 5000 software due to the Add-on Profiles that can configure up to 16 instruments, as well as monitor process variables, status and diagnostic data, including an oscilloscope. These DIN-rail mountable devices offer multiple levels of device and media redundancy, including multi-master, redundant Ethernet; dual media H1; and an H1 ring topology.

Built-in power conditioners and protection are provided on the two physical H1 ports, which provide 500mA each. The devices support Field Device Tool/Device Type Manager (FDT/DTM) technology, providing direct access to device configuration and diagnostics via FDT frames such as FactoryTalk® AssetCentre software. In addition, users can access a web interface through the Ethernet port on both modules.
EVENTS CALENDAR

VISIT ROCKWELL AUTOMATION AT THESE EVENTS: MAY - JULY 2012

<table>
<thead>
<tr>
<th>DATE</th>
<th>EVENT</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-18 April</td>
<td>APPITA 2012</td>
<td>Melbourne VIC, Australia</td>
</tr>
<tr>
<td>2-3 May</td>
<td>Rockwell Automation on the Move</td>
<td>Sydney NSW, Australia</td>
</tr>
<tr>
<td>15 May</td>
<td>OEM Forum</td>
<td>Auckland, New Zealand</td>
</tr>
<tr>
<td>17 May</td>
<td>OEM Forum</td>
<td>Christchurch, New Zealand</td>
</tr>
<tr>
<td>22-23 May</td>
<td>Rockwell Automation on the Move</td>
<td>Brisbane QLD, Australia</td>
</tr>
<tr>
<td>22-23 May</td>
<td>Resources &amp; Energy Symposium</td>
<td>Broken Hill SA, Australia</td>
</tr>
<tr>
<td>6-7 June</td>
<td>Rockwell Automation on the Move</td>
<td>Perth WA, Australia</td>
</tr>
<tr>
<td>26 June</td>
<td>Process Forum</td>
<td>New Plymouth, New Zealand</td>
</tr>
<tr>
<td>28 June</td>
<td>Process Forum</td>
<td>Auckland, New Zealand</td>
</tr>
<tr>
<td>28 June</td>
<td>Safety Symposium</td>
<td>Auckland, New Zealand</td>
</tr>
<tr>
<td>18 July</td>
<td>Technology Roadmap</td>
<td>Christchurch, New Zealand</td>
</tr>
<tr>
<td>19 July</td>
<td>ECANZ</td>
<td>Christchurch, New Zealand</td>
</tr>
<tr>
<td>24-26 July</td>
<td>QME 2012</td>
<td>Mackay QLD, Australia</td>
</tr>
<tr>
<td>24 July</td>
<td>Technology Roadmap</td>
<td>Napier, New Zealand</td>
</tr>
<tr>
<td>25 July</td>
<td>Technology Roadmap</td>
<td>Palmerston North, New Zealand</td>
</tr>
<tr>
<td>26 July</td>
<td>Technology Roadmap</td>
<td>New Plymouth, New Zealand</td>
</tr>
</tbody>
</table>

FAULT TOLERANT...SELF HEALING
FIBER OPTIC NETWORKS
(RING, BUS, STAR...NO RESTRICTIONS)

- Redundancy
- Over 60 Miles (96 km) Apart
- Real Time Diagnostics
- UL and UL/C Class I, Div 2, CE Mark
- 1756 PLUG-IN MODULES (ControlLogix)
- 1766 PLUG-IN MODULES (SLC)
- Optical Communication
  For ROCKWELL/ALLEN-BRADLEY
  ControlNet®, EtherCAT, RS-485, Modbus, Modbus Plus,
  and RS-232/485 Communication Networks

Phoenix Digital
7650 East Evans Rd.
Bldg. A
Scottsdale, AZ 85260
Phone: +1 (480) 483-7393
Fax: +1 (480) 483-7391
e-mail: phxdigital@aol.com
Integrated Architecture Tools: Sample Code Library

Retrieve free sample code that has been developed by Rockwell Automation and other users and post code that you think others might find helpful for Integrated Architecture applications, including logic, HMI and drives. Full documentation is included to help you implement pre-configured faceplates/add-on-instruction (AOI) sets for your HMI and PLC.

Available at www.rockwellautomation.com/go/sc
Building Automation In-Rack Communication Modules...

ProSoft Technology is now the exclusive provider of the SlotServer product line, manufactured by FieldServer. The SlotServer products provide in-rack connectivity between the Rockwell Automation® ControlLogix® control platform and an array of Building Automation Systems and Fire Alarm Control Panel protocols including:

- Metasys N2
- BACnet
- LonWorks
- Fire Alarm
- Building Automation Systems (BAS)

...and Gateways

The new FieldServer Gateways offer even more connectivity for Building Automation Systems:

- LonWorks
- EtherNet/IP
- DF1 to BAS and Modbus Serial
- TCP to BAS

Contact your ProSoft Technology representative for pricing and availability.

www.prosoft-technology.com/fieldserver-slotserver