Facility of the Future for Consumer Industries
EXECUTIVE MESSAGE

The Factory of the Future

Today’s consumers expect more choices and they expect them to be tailored to their specific tastes or needs. Whether it’s choosing a low calorie version of your favorite treat, customising each feature you want built into your new car, or having your prescription medicines delivered to your door with a few clicks on your mobile phone – our own personalized expectations are driving manufacturers to produce more varieties, faster than ever before. But how can you get the flexibility you need without sacrificing your high quality standards or high levels of productivity?

Imagine a factory that leverages digital technologies to connect all of your systems to provide you with data and insights you can use to improve decision-making, performance and compliance. In the past this was just a vision for the future but now, this vision can become a reality.

The Industrial Internet of Things (IIoT) leverages the power of smart machines and real time analytics to provide insight into industrial processes that drive faster business decisions.

Whether you make cars, soap, beer, bread, vitamins, syringes or any of the other millions of goods that people consume every day – IIoT can help you meet the requirements for product personalization, safety standards and track and trace requirements. It improves the quality of our daily lives and helps drive productivity and profitability.

This issue of Automation Today focuses on how manufacturers and producers in consumer industries including food and beverage, automotive, pharma and life sciences, and household and personal care, can embrace digitalization to transform your business so you can quickly respond to new and changing consumer demands.

It explores the latest technologies to help you Empower your Factory of the Future; reveals how the Future of Automotive Manufacturing is Electric; and looks at how Pharmaceutical Serialization Makes Sense for Product Tracking and Traceability.

I hope you enjoy this issue of Automation Today and that it helps you identify new and innovative ways to establish your factory of the future.
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Lonza Selects Rockwell Automation for Digital Transformation of Pharmaceutical Operations

Lonza has selected Rockwell Automation for the turnkey implementation of their strategic vision of bringing the digital factory to nine former Capsugel facilities that manufacture drug capsules. The Switzerland-based company, founded in 1897 with approximately 15,500 employees, chose PharmaSuite Manufacturing Execution System (MES) software by Rockwell Automation to digitize operations in their manufacturing environments. Specifically, the solution is designed to help avoid disruptions during high volume periods of just-in-time orders for on-demand production, ushering in a new era of operational efficiency.

“Digital transformation is bringing new levels of operational efficiency, quality, process automation, and employee productivity to pharmaceutical companies globally,” said John Genovesi, senior vice president, Enterprise Accounts and Software, Rockwell Automation. “We’re proud to be working with Lonza as they evolve their products, operations, and workforce towards their maximum potential through the use of Rockwell Automation’s software solutions.”

Lonza will use PharmaSuite MES software, along with FactoryTalk InnovationSuite software to better trace product down to the individual capsule carton and gain insights into performance and production. A segregation of SAP and PharmaSuite MES will also help avoid disruption in case of a global enterprise resource planning ERP shutdown or required maintenance by enforcing workflows and collecting necessary information.

Software solutions of Rockwell Automation help organizations continually optimize their operations for the digital age. The company is currently working with Lonza on an innovation program to keep their operations on the leading edge of pharmaceutical manufacturing.

Rockwell Automation China enters into Strategic Partnership with Lenovo

Rockwell Automation China recently reached another milestone in bringing the Connected Enterprise to life. We have entered into a strategic partnership agreement with Lenovo Data Intelligence Business Group to work together in areas such as technology, products, business and market access. This offering will help transform the manufacturing industry in China by providing users with integrated digital solutions that connect information technology (IT) with operations technology (OT).

This partnership enables both companies to fill the gap in the marketplace by taking a "one-stop" approach to the implementation of digital solutions from offering consulting services to products and solutions.

Establishing the Lenovo - Rockwell Automation Delivery Center

We plan to combine Lenovo’s digital business and digital technology consulting services with our information technology-powered automation product suites and Connected Enterprise solution. Together, we will develop industry solutions catering to the needs of smart water utilities, 3C manufacturing and brewing.

“Lenovo Data Intelligence Business Group is China’s leading provider of data products and intelligence platforms and has brought about customer clustering effects in various fields such as automotive, petrochemical, metallurgy and electronics manufacturing,” said Ian Shih, regional vice president, Greater China, Rockwell Automation. “Collaborating with Lenovo, Rockwell Automation seeks to fuel the digital transformation of China’s manufacturing industry with the most advanced and comprehensive industrial intelligence solutions.”

Helping the manufacturing industry become smarter

Rockwell Automation will provide Lenovo with product suites in the OT domain such as FactoryTalk InnovationSuite, FTPC Manufacturing Execution System, Integrated Architecture System, and Intelligent Motor Control Platform to make it easier for enterprises to deal with the challenges in the digitalization journey.
Helping Indian Manufacturers bridge Employee 4.0 Industry Skills Gap

On the concluding day of TechEd 2019 in India, Rockwell Automation announced its plans to help manufacturers in India bridge the Industry 4.0 skills gap by offering e-learning, instructor-led courses, certificate programs, and training workstations.

Speaking at TechEd, Dilip Sawhney, managing director, Rockwell Automation India said, “India Inc. is witnessing a shift towards smart factory shop floors designed to boost productivity, improve quality, and optimise costs to help companies stay competitive. However, we are also staring at a huge skills gap in the country’s workforce when it comes to operating Industry 4.0 technologies. This must be addressed at both the corporate and government policy levels to accelerate India’s digital transformation and achieve our collective vision of becoming a five trillion dollar economy by 2024.”

Rockwell Automation TechEd has emerged as the leading technical education and user conferences in the manufacturing industry. More than 300 attendees participated in a unique two-day learning and networking experience with over 70 sessions, including thought provoking keynote presentations, expert-led technical sessions, interactive hands-on labs, and demonstrations to learn about the latest techniques and technologies to optimize production data and build secure networks to transform their business.

The event started with an informative keynote presentation by Joe Bartolomeo, vice president Enterprise Accounts & Software Sales, Rockwell Automation that highlighted the importance of investing in smart manufacturing and production to remain competitive on a global scale. He explained that with a growing consumer market demanding more choice, manufacturers needed to embrace new technologies to address changing requirements. Industrial IoT is estimated to have an economic impact of 4.6 trillion dollars by 2025 as new technologies including analytics, mobility, app platforms and the cloud, help securely connect plant information with enterprise systems.

"In addition to investing in the right technology and systems, businesses also need to invest in people right now to build the workforce of tomorrow. To make the Industry 4.0 enabled Connected Enterprise a reality, we first need to start creating a pipeline of skilled problem solvers, builders, makers, and innovators. It is towards this goal that Rockwell Automation will continue to partner with industry and academic organisations in India and across the region," emphasised John Watts, marketing director, Rockwell Automation.

Designed for end users, systems integrators, distributors, partners and machine builders, TechEd 2019 India created opportunities for participants to learn from industry experts and hear how their peers are solving manufacturing and production challenges. The sessions focused on data analytics and on the convergence of IT/OT to achieve smart manufacturing by capturing industrial data. The event also provided attendees with the latest innovations in mobility and virtualization, information management and analytics, as well as safety and security.

Rockwell Automation TechEd focuses on the latest technologies and cutting-edge solutions to help customers embark on their journey towards smart manufacturing through digital transformation for enhanced productivity, competitiveness and sustainability.

Upgrade your skills through E-learning

Rockwell Automation e-learning courses provide the flexibility and convenience of self-paced, self-directed training courses when and where you need them most. Our e-learning incorporates a variety of fundamental and product specific topics to deliver a world class online training solution directly to your plant floor or wherever you need it most.

Each learning module contain activities, software simulations, and demonstration videos to help reinforce learning concepts. The modules can be taken on any tablet or PC using Chrome, Safari, IE, Edge, or Firefox, and all content is narrated, and has a viewable transcript.

Detailed E-learning course profile can be found at https://www.rockwellautomation.com/global/products/training/e-learning/overview.page?

AP Customer Events Calendar

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<tr>
<td>Automation Fair</td>
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* Each event is subject to change
For more details, visit: www.rockwellautomation.com/global/events/events.page
By now, you would have heard about the Industrial Internet of Things (IIoT). Also known as the industrial internet or Industry 4.0 – the IIoT leverages the power of smart machines and real time analytics to provide insight into industrial processes that drive faster business decisions. In fact, Accenture predicts the IIoT market will reach $500 billion by 2020. This technology is far reaching and can provide benefits to just about every major industry including; manufacturing, retail, pharmaceutical, mining, utilities and transport.

Challenges and Opportunities

New opportunities also bring challenges and the rapid expansion of the IIoT has created a dilemma for companies in a variety of consumer industries. The IIoT is recasting the role of data from a useful asset to the lifeline that drives production decisions and influences the way we live, the food we eat and how we travel – whether it be for business or leisure.

Today, traceability, end to end supply chain and data integrity are under the microscope more than ever as manufacturers need to secure product safety – whether it be in the food and beverage, automotive or pharmaceutical industries.

Unfortunately for most manufacturers, a combination of legacy equipment, skills gaps in an aging workforce and the struggle to identify and measure the right data means they are not accomplishing anything close to the progress needed to meet changing consumer demands.

These consumer industries are looking to intelligent, connected operations as a way to remain competitive and better serve those who rely on their products. While the opportunities are endless, the challenges are many. Innovation remains critical as patents expire, life cycles shorten and counterfeits flood the market.

A Factory of the Future

The good news is that none of these obstacles are insurmountable, and you can achieve genuine ROI by digitally transforming your manufacturing facilities.

You can meet these challenges with a new kind of factory – a factory of the future. One that is smart, secure, connected, flexible, compliant and is possible today. The approach you take to create your factory of the future will greatly influence your success. When done right, you can maximize ROI, optimize asset utilization, achieve greater speed to market, maintain quality and compliance throughout.

Imagine a facility that leverages digital technologies to connect systems both horizontally and vertically. One that provides data to improve decision-making, performance and compliance. A facility where modular

‘A factory of the future is smart, secure, connected, flexible, compliant and is possible today’
and mobile equipment creates more opportunity for “plug and play” operations and less dependency on manual intervention than ever before. Furthermore, where automatic equipment recognition and verification systems can track and confirm your equipment placements; and where modern visual solutions can guide operators seamlessly through process steps.

Making the Vision a Reality

Advances in enabling technologies has made it possible to establish knowledge-driven operations that can connect your people, processes and technology across every level for better collaboration, faster problem solving and improved innovation within your organisation and its supply chain.

Smart machines and equipment can play a key role in helping food and beverage producers overcome the many obstacles and demands that come with satisfying changing consumer preferences. A smart machine — which generally means one that is leveraging data and information to improve performance — can bring unprecedented flexibility, increased productivity and cutting-edge efficiency to the plant floor.

Despite this potential, adoption of smart machines by food and beverage companies has been gradual, at best. Gartner, Inc., estimates that smart machines will enter mainstream adoption by 2021, with 30 percent adoption by large companies.

Food and beverage companies, understandably, have questions about how these intelligent technologies can fit into their operations so let us look at two key benefits provided by these technologies: Flexibility and Data and Information.

**Flexibility:** Smart machines and equipment offer a new era of flexible production, which is especially important for food and beverage companies, because consumers want choices. Consider the proliferation of options in packaged snacks. Chips and crackers no longer are just available in family size. Consumers have their pick from snack packages to large cartons, with more options in between.

This modern appetite for variety means food and beverage companies need machines that not only do more, but faster as well — without adding production lines for each new product. That means more frequent changeovers, effective batch and recipe management tools, using the same machine for multiple jobs and being flexible enough to meet future consumer demands.

Technology solutions such as independent cart technology (ICT) and robotics can provide flexibility on a production line. ICT provides the foundation for intelligent conveyance systems — advanced and efficient alternatives to conventional systems. They can safely and efficiently manage many carts across a network of linear motors.

Using ICT, some OEMs have reduced changeovers from 45 minutes to just one minute. Overall, ICT minimizes complications and reduces time to market. Robotics also can offer more flexibility to end-of-the-line operations, such as packaging. Smart machines based around a single control system with robotic controls can support faster communication of control, safety and process information and more accurate control of machine movements.
In addition, advances in scalable batch and recipe management tools allow food companies to build more flexible production lines. In the past, a line may have been dedicated to a single product, but companies can now easily and efficiently change recipes on the same line.

Data and Information: The primary difference between smart machines and traditional machines is information. By tying into an Ethernet-based network, smart machines can deliver invaluable, standardized data that food and beverage companies can use to optimize overall operations.

Producers can use that information to improve decision-making around product stocking, delays in changeovers and more. Smart machines also open the option of storing data in the cloud, which is becoming more cost-effective and easier to manage.

Sensor technology helps OEMs design self-aware machines that can monitor their own key components and environmental conditions. This level of machine monitoring also facilitates preventive maintenance, supported by the OEM. Machines can consist of both wired and wireless sensors, allowing production lines to produce products more reliably and efficiently.

Working closely with their OEM, food and beverage producers also can deploy mobile devices to connect with smart machines. This can eliminate the need for operators to stand close to machines, allowing them to multi-task while maintaining digital access to monitor and control their machinery.

Smart Technology and Automation
As the IIoT continues to advance at a rapid rate, pharmaceutical companies are transforming the industry by using smart, connected devices, analytics and machine learning to improve drug manufacturing processes and deliver better patient outcomes.

Pharmaceutical companies have dramatically increased the use of smart technology and automation in production facilities to improve drug quality and speed innovation. Many have also streamlined operations with modern manufacturing execution system (MES) and electronic batch record (EBR) systems.

However, as the number of intelligent devices has proliferated, manufacturers have struggled to use the big data generated across the plant floor and beyond in truly transformative ways.

In a pharmaceutical plant, a scalable analytics platform can ingest data from diverse data types — and help cut through the clutter by modeling data to find meaningful correlations that lead to new insights. Furthermore, predictive and prescriptive analytics can help. For example, batch process deviation management is critical in any pharmaceutical plant to maintain both product quality and regulatory compliance.

The latest analytics platforms can bring more clarity to root cause analysis by casting a wide net that extends beyond the process environment to data generated by all relevant IIoT devices and machines. In addition to pinpointing the cause of deviation based on historical batch records, analytics capabilities such as native anomaly detection can use historical data to improve quality monitoring in real time.

Native anomaly detection increases machine monitoring capabilities by automatically learning what normal behaviour is — and raising alerts when something is abnormal. Machine learning is just one way that advanced analytics platforms can help pharmaceutical companies maintain product quality and achieve the ever-allusive “golden batch” cycle after cycle.

Augmented Reality in Real Time
The benefits of connecting an enterprise’s IIoT applications go beyond providing complex analytics and insights on a single screen. Predictive analytics help to solve issues before they arise. Should the food processor enter a work order that involves...
a tank with a nearly faulty asset, the order would trigger further actions, prompting a maintenance user to resolve the issue as well as providing work instructions to guide the repair process.

Integrating with augmented reality (AR) technology also allows users to simplify their interaction with operations. Any user, such as the food processor’s maintenance engineer, receives instructions that are visualized with 3D animations.

Upon arriving at the tank, the engineer will see instructions specific to the situation, such as the asset with a potential issue and the steps they should take to fix it. Not only does this help keep the process running, but it also reduces the potential for error.

Combining accelerated IIoT application deployment, advanced analytics and AR puts the user in charge of innovating on the job as the individual systems barriers become almost invisible.

**Electric Vehicles and IIoT**

Environmentally friendly electric vehicles are predicted to dominate the automotive industry – by 2040 it is estimated that half of all new vehicle sales worldwide will be electric. IIoT technologies can help auto makers produce high quality electric vehicles quickly, affordably and with minimal risk.

Smart features and downloadable updates are making electric vehicles more like consumer-electronics products. These smarter, more connected vehicles require a smarter, more connected production approach. Many mature automakers already use connected operations, but often only in limited ways or across only some of their operations.

Deploying seamless connectivity and data sharing, as well as IIoT technologies, across your entire organization can help you improve visibility into vehicle production processes and help workers at every level make better and faster decisions.

For example, we have used smart machines to help teams create more efficient process workflows and more quickly identify the cause of stops for faster recoveries. We have also used advanced analytics that monitor asset data over time to help companies predict where problems may occur, so their maintenance teams can prevent stops from occurring in the first place.

Rockwell Automation recently opened a new 8,000 square-foot Electric Vehicle (EV) Innovation Center in San Jose, California. The center will provide live manufacturing demonstrations, hands-on trials utilizing new technology and events showcasing collaboration with industry experts and Rockwell Automation partners.

Utilizing augmented and virtual reality modeling, the EV Innovation Center provides automotive start-ups and established manufacturers an environment to learn new technologies and standards, enabling them to deliver electric vehicles to market faster, with less risk and at lower cost.

Batteries currently represent a third of the cost of an EV. As battery costs continue to fall, demand for EVs will rise, with up to 40 million new EV batteries needed annually to power new vehicles. This growth represents a tremendous opportunity for automotive battery manufacturers — but only if they are in position to take advantage of it.

Many manufacturers have been getting by with disparate and disconnected information systems running in the enterprise and across their facilities, but that simply won’t cut it for much longer. What has been a low-volume industry to date is poised to explode, with an exponential demand curve. In addition, as battery manufacturers build greenfield, giga-scale production plants to meet demand, they’re challenged to build for growth from the start.

The entire enterprise needs to be connected. If you are a battery maker, you need to automate your systems now to keep up with demand, grow your business and achieve a key part of the smart manufacturing strategy.

**IIoT is Here, There and Everywhere**

Whether you are a car manufacturer, food and beverage producer, pharma, biotech or even cosmetic or personal goods manufacturer – IIoT can help you meet the requirements for product personalization, safety standards and track and trace requirements. It improves the quality of our day to day lives and helps drive productivity and profitability – a real game changer.
The latest smart automation, control and safety technologies can help improve productivity and safety for building and construction material manufacturers

Building and construction materials form the foundation for our homes, schools, hospitals, roads and shopping centres. A recent report has estimated that the volume of construction output will grow by 85 percent to $15.5 trillion worldwide by 2030, with three countries, China, US and India, leading the way and accounting for 57 percent of all global growth.

As construction projects increase so too will the requirement for high quality building and construction materials. Boral is a leading provider of construction materials and building products including cement, aggregates, concrete, asphalt, bricks, roofing, masonry products and timber.

Boral works to maintain an engaged and reliable workforce and minimise environmental impact. In keeping with this mission, Boral recently invested in an industry leading motor control solution for their Charlton quarry which is located in Victoria, Australia. The key focus of the project was to improve uptime and leverage the longevity and compliance provided by the latest motor control technology.

Smart Motor Control Technology

Motor control technology has come a long way as a result of the advances in IIoT technologies. Connecting motor control devices over Ethernet allows operators and maintenance to realise the benefits of The Connected Enterprise by monitoring and analysing operations from anywhere at any time.

Boral engaged SS Electrics, a progressive electrical contracting business based in Ballarat, Victoria, to implement a solution to modernise the electric equipment at the quarry.

“We have worked with Boral on projects at their other quarries previously and therefore understood the importance of minimising downtime onsite during commissioning. The Rockwell Automation MCC was the most appropriate choice for this application because it is a fully designed and integrated system that is essentially 75 percent commissioned upon arrival. This really helped reduce engineering time and helped meet the tight commissioning timeline for this project,” explained Chris Nunn, Director, SS Electrics.

The Allen-Bradley CENTERLINE 2500 Motor Control Center (MCC) offers optimal safety, performance and reliability to help meet Boral’s production requirements. It was important for the new motor control system to be able to integrate with existing systems and provide advanced diagnostics capabilities. The CENTERLINE 2500 meets these requirements with premier integration and reduced engineering time.

SS Electrics worked with Rockwell Automation and their distributor NHP Electrical Engineering Products to select the smart components which are at the heart of the 12 column MCC.
including the **E300 Electronic Overloads**, **SMC Flex soft starters**, **POINT I/O modules**, **Guardmaster safety relays**, **Stratix switches**, **ControlLogix control system** and **PowerFlex 525** variable speed drives for the crushers, conveyors and processing equipment.

The MCC also features **IntelliCENTER** technology, which enhances the intelligence of the MCC by using built-in networking to capture information that can be used for predictive maintenance, process monitoring, and advanced diagnostics.

**Safety First at Winstone Wallboards**

Safety is a key priority for building and construction material manufacturers. As such, **Winstone Wallboards**, New Zealand’s only manufacturer and marketer of gypsum plasterboard, drywall systems, and associated products and services recently implemented an industry leading solution to meet their palletising requirements and assist with growing the company’s production capacity.

The materials handling equipment has the challenging task of handling the two incoming streams – the dry and wet product, packaged in different mediums – simultaneously. The finishing compounds area is divided into three sections; the dry mix section: end user is required to mix the product which is packed in a variety of different sized bags from 5kg to 20kg; the wet mix station: ready to use products are packed in pails of varying sizes from two litres up to 15 litres and also a 14 litre box; the third section merges both the wet and dry mix on the robot palletising system. Safety is therefore a key priority for the system operators.

While reviewing these materials handling zones, Winstone Wallboards had conducted a risk assessment which identified areas of the plant that required updating to meet new standards.

Given the safety hazards associated with the materials handling equipment at the plant, it was important to provide appropriate guarding between the hazard and operators so the machine could be accessed in safe mode if required. **Guardshield POC Safety Light Curtains** provided zone separation for the mill, and the latest **Guardmaster 442G Multifunctional Access Box (MAB)** provided an ideal solution for this application. The 442G MAB gate access lock has Ethernet/IP connectivity, avoiding the requirement for hardwiring the system.

“The installation and commissioning time was reduced significantly using the MAB. We had approximately 14 days during a planned shutdown to remove the existing system and have the safety upgrade installed and commissioned. Using an integrated safety solution enabled us to achieve this, otherwise we would have struggled to complete it on time. In addition, we integrated the system with other processes onsite and everything was done easily through digital communications,” said Shaun Sanders, Manufacturing Safety Engineer at Winstone Wallboards.

As a result of the solution, downtime due to safety system failure has been reduced. With the old safety system, fault events could take several hours to diagnose; now, with the new Guardlogix based smart safety system, diagnostic information on the state of the safety system is immediately available to the operator and maintenance teams. This facilitates rapid repair and production resumption, resulting in an OEE improvement of 0.3 percent. This means that the safety system provides increased equipment availability to produce for an additional 24 hour period during the year.

Furthermore, the system provides the tools for Winstone Wallboards to drive compliance, while ease of use provides the operator with safe operating procedures whilst enhancing productivity. By incorporating safety information into Environmental Health and Safety management systems, day to day discrepancies between policies and operating procedures can be identified – improving insight into worker behaviour and compliance.

Previously, to gain more diagnostic data, traditional safety devices required more complex wiring solutions. Using a smart safety solution enables greater access to diagnostic data and simplifies your wiring system. An integrated smart safety solution provides the information needed to create a comprehensive picture of the status of the machine or production line.

In addition, enhanced visibility into safety-system performance and stoppages can help determine the root cause of shutdowns. Safety and production data also can be combined to understand the frequency, duration, time and location of safety-related shutdowns.

“This project is the first step towards building the communications infrastructure for the entire plant. Having a platform like GuardLogix lays the foundation for where the future of the plant will lie with integrated safety. The success of this project has given Winstone Wallboards the confidence to use newer technologies and invest in further upgrades at the plant,” said Adam Kane, Technology Specialist – Safety & HAE, NHP.
From Changing Consumer Tastes to Food Safety Standards – Digital Transformation Can Help

Technology is helping the food and beverage industry meet food safety standards and changing consumer tastes

Consumers continually seek the new and different, and prioritize taste and nutritional value. That means you must get new, high-quality products through your facility quickly, and keep prices low and food safer. In addition, food and beverage manufacturers need to provide full transparency into every stage of the supply chain.

If we take the dairy industry for example, by nature, it is high volume with a low profit margin. It is also a very competitive industry as dairy manufacturers look to continual product innovations to meet changing consumer tastes. Today’s consumers are enjoying higher value specialty products such as low-fat, no-fat and protein enhanced choices to suit every taste.

A holistic approach to dairy production can help to increase flexibility and efficiency and reduce total costs of operation. Automated dairy systems can help you deliver a diverse mix of consistently high-quality, safely produced products. This is particularly important for geographical locations with increasing consumer demand for dairy products, such as India.

In India, a growing middle class has created growing market demand and increased consumption of dairy products. To meet this demand, dairy manufacturers are leveraging the latest technologies to stay ahead of the competition.

Optimized Dairy Production

One of Asia’s largest dairies recently underwent an expansion with a key focus on process optimization, labour reduction and faster time to market. In addition, the control systems of various plants would need to integrate with the systems in the dairy. The plant required greater visibility and productivity, while optimizing resources including water, air, gas, electric and steam (WAGES).

Given the scope and complexity of the project, the dairy recognized they needed a single vendor to manage the design and implementation of the control system. The dairy selected Rockwell Automation due to its extensive experience in automation and global reach to manage the entire project from initial design through engineering and implementation.

The solution included seamless integration on a single EtherNet/IP network; process optimization by deploying controller-based modular predictive control (MPC) on the pasteurizer; real-time energy monitoring; scalable engineering practices and standardization.

The Rockwell Automation Global Solutions team implemented a batch solution that monitors and controls 50 LLPD of milk daily. This solution was built on the PlantPAx distributed control system using a common control engine with a common development environment to provide high performance in an easy-to-use environment.

ControlLogix L7X controllers from various plants were integrated on one EtherNet/IP plant-wide network and E300 electronic overload relays delivered better motor control, protection and predictive diagnostics. The system’s tight integration between the programming software, controller, and I/O modules reduced development time and cost at commissioning and during normal operation.

The new solution provides the flexibility for operators to create and run different recipes, specify daily production rates and run multiple batches in parallel via the batch production entry system. In addition, it provides access to real time information and monitoring, allowing the plant manager to have complete and accurate production information at any given time and the ability to provide performance, quality and material reporting.

The dairy is now reaping the rewards of the solution with increased productivity from five to 5.5 million liters per day.

Global Tracking for Food Safety

The pressure is on globally to increase traceability in the food supply chain. Implementing a supply chain track and trace system can help you comply with these emerging regulations and help protect your products against potentially dangerous counterfeits and supply chain diversions.

Recently, L’Aromatika Srl – Caffè Borbone, an Italian leader in coffee production, created a widespread tracking system where global tracking starts from the coffee bean and ends at the coffee pod.

Starting out as a partial tracking project, after subsequent developments the application is now a perfect example of digital transformation. To implement this project, Bibit – an Italian information technology company – called upon the services of Rockwell Automation, which
CASE STUDY

Asia Pacific

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provided the basis for creating an Industry 4.0 environment.

L’Aromatika relied on a system composed of PC terminals, limited to recording the generation of pallets. This system provided a printed label at the end of the production cycle that did not include any information about upstream activities.

Continuous growth in the company and the need to comply with strict standards applicable to the food industry caused the company to automate the process. It had to deploy tools to monitor all events occurring along the line, establishing the foundations for real-time tracking. Once this was achieved, L’Aromatika decided to further expand the project to reach a machine-level tracking system, interfacing all of the printing systems up to packaging.

The solution is centred on the Rockwell Automation Integrated Architecture system supplied to the customer over the course of the project’s two year development. It comprises two Allen-Bradley CompactLogix 5370 series controllers, thirty remote Allen-Bradley POINT I/O modules, plus another six for the coffee producers. All these components communicate with one another and servers through an EtherNet/IP network.

The network infrastructure with an EtherNet/IP protocol allows the PACs to also automatically manage warehouse consumption, production and coffee making levels, with the amounts of raw and processed coffee being unloaded. In addition to providing tracking data, the PACs that communicate with an intermediate server transmit the same data to the accounting software for recording of semi-processed loads, finished product in the warehouse, and unloading of components.

A key success of the project for L’Aromatika was the attainment of ‘IFS Food’ food safety certification, which is proof of thorough, widespread tracking, and in this sector represents a mandatory condition for operating according to a series of commitments, such as, for example, large scale distribution.

Thanks to the adopted solutions, L’Aromatika can now track the entire process from start to finish, from receiving the coffee, when it is registered and associated with a specific lot, to loading at the coffee maker company and the first blending operations.

PTL Continuous Melters

Some of the issues faced by companies which melt product in the chocolate and bar industry today are: Footprint, Changeover Times, Washdown Times and Melt Rates.

Benefits of PTL Continuous Melter

• Require less power than the traditional kettle/tank system as product is melted as required.
• Smaller footprint than the traditional kettle/tank system.
• No additional capital investment required for multiple coatings.
• Product in PTL Melters can be used immediately as there is no requirement to wait for all product to be molten.
• PTL’s Single Head Melters are portable.
• Designed to very hygienic standards which comply with GMA machine design guidelines.
• Reduced pipe work and can be located directly next to use equipment.

more information:
linkedin.com/company/ptl-production-techniques-ltd-
In any automotive body shop, transferring subassemblies accurately and efficiently from Point A to Point B is critical. But achieving optimal throughput is not just a matter of speed. It requires a conveyance strategy that can accommodate downtime in some systems without slowing production in others.

"Manufacturing isn't perfect," said Kevin Laurence, director, advanced technology group, KUKA Systems. "You're never going to have a part come in one dock and out another at the same rate. Too many things can go wrong."

Buffering zones address this challenge and enable plants to achieve output goals despite potential roadblocks. Based on accumulating conveyors, buffering zones allow one system to feed another at a steady rate – and store the output of a producing system if consumption slows or stops down the line.

But in recent years, as body shops moved toward mixed-model assembly and began assuming production for more subsystems, conventional buffering often fell short.

"These buffering systems simply grew beyond their original intent," Laurence explained. "The system that was supposed to keep the plant running didn't have the necessary agility – and was prone to downtime itself."

**A Better Approach for Modern Plants**

To address the realities of the contemporary assembly plant, KUKA Systems North America recently developed the KS BOLT buffering overhead linear transport system. KUKA Systems North America is part of Germany-based KUKA AG, the world's leading provider of production systems in the automotive industry.

Unlike conventional buffering, which uses friction-based conveyance, the KS BOLT relies on independent cart technology from MagneMotion, a Rockwell Automation company. The system features **QuickStick intelligent conveyors**.

Comprised of a linear motor and built-in motor controller, the QuickStick system uses integrated position sensing to enable independent control of separate carriers on a loop-style track. Accelerations, decelerations, velocities and positions are programmable.

**The Power of Embedded Intelligence**

"Linear motor technology makes the KS BOLT a very smart system," Laurence said. "Since position sensors are embedded into the motor, you know exactly where each carrier and each part is at all times."

Conversely, conventional conveyors rely on external proximity sensors to monitor pallet movement on the belt, but are unable to control or track individual payloads. And while conventional conveyors run in one direction only, the KS BOLT is bidirectional.

"Bidirectional functionality is particularly helpful when producing and consuming systems get out of sync," Laurence said. "Because the intelligent system always knows where all parts are, it can automatically and independently transport the proper model as needed."
The KS BOLT is also an efficient solution that eases proper sequencing in multi-model plants. To help achieve the correct part sequence for each vehicle, many plants establish selectivity banks, with separate conveyance systems transporting the parts for each model.

“An assembly plant can replace selectivity banks and separate conveyors with a single KS BOLT system, thanks to its exceptional tracking ability,” Laurence said.

**Fewer Components. Easier Maintenance**

Featuring a modular design, the KS BOLT system is also built for easy maintainability.

“Essentially, there are very few things that can go wrong on a KS BOLT system, because there are so few components,” Laurence said.

The KS BOLT includes an extruded aluminum track, solid-state QuickStick linear motor technology, zero-maintenance carriers – plus roller cluster wheel assemblies.

“The health status of the linear motors is independently monitored for power draw changes to enable predictive maintenance,” Laurence said. “In the rare instance a motor must be exchanged, the KS BOLT delivers alerts through the control system.”

And if a roller cluster or wheel needs repair, the system pinpoints exactly which carrier is having the issue. In contrast to friction-based systems, repairable components are easily accessible from outside the track.

Perhaps the real beauty of the KS BOLT is its adaptability to a wide range of industrial applications – and future manufacturing requirements.

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**Global New Energy Automation Leader**

3V is the global leader of new energy automation solutions at Electrical vehicle battery cooling; PTC; High pressure water pump; energy storage; battery process development; cooler; chiller automation development.

**Solution**

We are now providing customized product and solution all over the world. 3V Germany; China; U.S and Mexico benefits our client right from the earliest stage with our expertise and comprehensive knowledge.

**Product**

- Fin Forming Machine
- Water Charged Cooling Machine
- Stuffer Machine
- Crimping Machine
- Oil Cooling Machine
- Automation Development
- Tube Forming Machine

**CASE STUDY**

**ASIA PACIFIC**

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The Future of Automotive Manufacturing is Electric

One in six new cars sold worldwide in 2025 is expected to be electric and by 2040, it’s estimated that half of all new vehicle sales worldwide will be electric.

Electric vehicle sales in the United States last year reached nearly 200,000, a more than 25 percent jump from 2016. In China, 770,000 electric vehicles were sold, a more than 50 percent increase from the previous year.

The growing consumer demand for electric vehicles is pressuring brand owners and suppliers to shift processes and technology to serve these changing market needs. For automakers, the race is on to accelerate electric vehicle production with smart, flexible operations and integrated automation solutions.

Accelerate your Time to Market
To claim a share of the fast-growing electric vehicle (EV) market, you need to get to market as fast as possible. You need a comprehensive production strategy. One that helps you produce vehicles quickly, at the highest quality, with minimal risk.

An integrated automation architecture lays the foundation to bring Industry 4.0 concepts to life. It helps you access the right information at the right time to make important operational decisions. It also enables easy integration of equipment into your plant and swift reaction to market demands.

An integrated architecture uses control and information systems that share a common network, control platform, data structures and design environment. A single network, for example, can seamlessly connect your plant systems to each other and to the rest of your enterprise. While common, standardized data structures can help you more easily pull data from across your operations and turn it into actionable information for workers.

On this foundation you can deploy smart technologies and capabilities that can help your EV operations run faster and with more flexibility. Some solutions to consider include:

Scalable Infrastructure: These offerings can help converge your networks, connect your plant and business systems and give your workers access to information to make better decisions. Scalable infrastructure offerings can be especially valuable when your operations are starting small or if you have time, talent or budgetary constraints.

Infrastructure-as-a-service (IaaS), for example, can reduce the burden of designing, deploying and maintaining a network infrastructure. It also can shift your network’s costs from a capital expense to an operating expense. IaaS combines pre-engineered network solutions, on-site configuration and 24/7 remote monitoring into a single contract. It uses best-in-class technologies and architectures and can help optimize the performance, efficiency and uptime of your network architecture.

Independent Cart Technology (ICT): Systems build with this technology will be a game changer in electric-vehicle production. They offer the potential of higher line speeds and reduced downtime, which can help you get to market faster.

Independent cart technology allows a brand owner to move small components, or even full car bodies, around a plant faster and more precisely than conventional mechanical solutions. This can help you speed up production in a traditional body shop or in areas such as battery cell and pack production, where high-speed conveyance has proven to be a challenge.

You can change the functions of systems using ICT with the push of a button to achieve fast changeovers. These systems also have fewer moving parts, which can reduce maintenance needs and improving uptime.

Scalable Manufacturing Execution System (MES): Individual MES applications can help you understand and manage production, without investing in a full MES software package.

The applications address specific challenges, such as quality, machine performance, or genealogy and track and trace. You can start at the machine or work-area level with a single application and minimal infrastructure requirements. You can add other applications or scale up to an integrated-MES solution as you grow production and realize return on investment (ROI).
New EV Innovation Center

Rockwell Automation recently opened a new 8,000 square-foot Electric Vehicle (EV) Innovation Center in San Jose, California, within its Information Solutions development facility. The center will provide live manufacturing demonstrations, hands-on trials utilizing new technology and events showcasing collaboration with industry experts and Rockwell Automation partners.

Utilizing augmented and virtual reality modeling, the EV Innovation Center provides automotive start-ups and established manufacturers an environment to learn new technologies and standards, enabling them to deliver electric vehicles to market faster, with less risk and at lower cost.

The combination of Rockwell Automation technology with partner technology is what makes the center unique. Specifically, Rockwell Automation’s FactoryTalk InnovationSuite, powered by PTC, is an unmatched integrated solution that combines software from PTC and Rockwell Automation. Similarly, Eagle Technologies provides the battery pack assembly machine, and FANUC furnishes robot technologies, both integrated with Rockwell Automation technology.

Hirata, a turnkey assembly line builder, provides an assembly cell that demonstrates electric drive unit assembly and testing. Emulate 3D, Rockwell Automation’s simulation software, helps to prototype and test machines before they’re built. teamtechnik performs functional testing to confirm performance before building the drive into the electric vehicle.

“With growing global consumer demand, electric vehicle companies are challenged to meet aggressive production timelines,” said John Kacsur, vice president, Automotive and Tire Industries, Rockwell Automation. “We established the Electric Vehicle Innovation Center to expand their possibilities and get their products to consumers quickly and at the lowest possible cost, while operating more efficiently.

“It’s an immersive experience that helps customers develop and realize The Connected Enterprise — our vision for smart manufacturing that enables customers to leverage data and achieve positive business outcomes,” said Kacsur. “With over 4,000 successfully designed, installed and commissioned automotive manufacturing projects, Rockwell Automation knows how to help EV manufacturers get to market faster and better manage enterprise risks.”

Meeting Consumer Demand

Bloomberg estimates that by 2040, 54 percent of new vehicle sales will be electric. And by 2030, we’re looking at 100 percent of passenger vehicles in China and India being electric. This means that meeting the demand for EVs and EV batteries requires manufacturers to scale-up their production at an unprecedented rate.

The challenge for EV and battery manufacturers is to accelerate production at a sufficient rate to meet demand in the short term. They also need to future-proof their production operations for further inevitable innovations.

Automakers need to shift to data-driven manufacturing in a highly flexible and connected environment. Manufacturers need to connect the plant floor with business systems to deliver information to drive business analytics and better business decisions. They need seamless supply chain connectivity and operation to improve cost efficiency and product quality – together with built in flexibility and scalability, to leverage emerging technologies.

Right now, leading automakers are already using smart machines, analytics and augmented reality (AR) to gain a competitive edge. At Rockwell Automation, we are pushing the boundaries to arm you with today’s smartest technologies. With a comprehensive strategy for producing vehicles quickly, at the highest quality and within minimal risk, you too can stake your claim in the growing EV market.
Counterfeit drugs harm or kill millions around the world and inflict serious damage on the brand names and bottom lines of major pharmaceutical manufacturers. According to industry estimates, sales of counterfeit pharmaceuticals are estimated at US$163 billion to $217 billion. Developing markets were once the main targets for counterfeiters but now, digital channels are being used to traffic counterfeit pharmaceuticals around the globe.

As global regulations aimed at protecting public health, intellectual property and national security tighten, many countries around the world have introduced track and trace laws to help regulate pharmaceutical products as it passes through the supply chain. The track and trace system and serialization are widely used among all anticounterfeit technologies in different countries.

Whether you are a pharmaceutical, medical device or consumer packaged-goods manufacturer you are now required to track and trace products across the supply chain.

Why is Serialization Important?
Over the next few years, global mandates will require manufacturers to exchange transaction information in an interoperable electronic manner. In the United States, The Drug Quality and Security Act will be in effect by 2023; The ANVISA regulations will be enforced in Brazil by 2020; The European Falsified Medicines Directive is currently being implemented throughout 2019; while in China, the China Food and Drug Administration Regulations are currently in effect.

Taken together, more than 75 percent of the world’s prescription medication will be protected by legislation by the end of 2019.

To date, only production-related information, such as the expiration date and lot codes, has been printed on products and their final packaging. However, serialization – the application of a unique alpha or numeric identifier on every pharmaceutical package down to the unit level of sale – is a common requirement among the otherwise disparate international initiatives scheduled to take effect in the next few years.

These unique identifiers must be stored in a database along with other information about the item, including manufacturer and batch details. Using unique serial numbers, the authenticity of items can be verified against the database at every step in the distribution chain, from the manufacturer to the consumer.

Thankfully, the ability to have a solution that includes real-time visibility, ISA-95 certification, while meeting pharmaceutical serialization requirements is now possible.

A Holistic Approach to Product Tracking and Traceability
Global pharmaceutical companies lose an estimated $75 billion annually to counterfeit, grey market and stolen product. To help combat this, the Rockwell Automation serialization solution takes a holistic approach to product tracking and traceability – providing a single approach to address regulations, product counterfeiting, and recalls.

The solution is built on industry standards (IEC 61131, ANSI/ISA-88, ANSI/ISA-95) and uses open network and communication protocols, and commercial off-the-shelf technologies, eliminating the need for black-box proprietary control solutions and the associated custom interfaces and custom drivers that they require.

This open approach gives both OEMs and end users a single solution to address current and upcoming regulations, product counterfeiting and product recalls for the pharmaceutical industry. It can be a complete turnkey solution, from packaging to MES to ERP to Cloud or a scalable solution to where your current needs are today.

The Rockwell Automation Solution delivers five key benefits to pharmaceutical manufacturers:
1. **Scalable, Flexible, Customizable:** The global solution is scalable to provide design, delivery and long-term service and support, and is fully compliant with GS1 standards. The solution is scalable to meet the needs of any customer — from small-scale solutions for OEMs to full-scale, end-to-end solutions to help adapt to changing requirements and withstand company growth.

2. **Seamless Interoperability:** Interoperability among all machine devices, control systems, manufacturing execution systems, and information and business systems.

3. **Centralized Data Management:** Data management is critical for current operations and for extra layers of information regulatory compliance requires.

4. **Full Traceability:** Traceability is required in operations across the entire supply chain, from manufacturing and distribution, to point of dispense.

5. **Common Data for Actionable Intelligence:** Access to real-time insights helps manufacturers minimize business risk, comply with regulations and protect their investment.

**Pharma Company uses Serialization to Produce Life-Saving Medicines**

One of Asia’s largest biopharmaceutical companies is driven by the vision to improve access to high-quality, life-saving biotherapeutics. They needed a turnkey serialization solution with complete track and trace technology to secure and authenticate products across its supply chain.

Rockwell Automation delivered a serialization solution that addresses challenges across the spectrum, from automation to MES and ERP to the cloud.

The FactoryTalk ProductionCentre solution integrates quality management and business analytics with a paperless shop floor and repair execution. This improves operational efficiencies while sustaining regulatory compliance and the highest level of quality. Rockwell Software PharmaSuite offers an innovative approach to serialization, with role-based optimization at each stage of the recipe lifecycle that drives time to results. Open-content architecture paired with an intelligent upgrade engine provided a powerful system designed for growth in both batch and discrete processing.

Using commercial off-the-shelf (COTS) hardware and software that’s modular, scalable and reusable, the solution accommodates manual packaging lines with a pre-validated, optimized tool that supports manual serialization and aggregation workflow. It meets global standards to enable quicker production restarts with an integrated, open network and communication standards from device (printing, vision and scanning) to the enterprise level.

Adaptable on a global scale to meet current and future regulations, the enhanced system can adapt to more packaging line technologies and production management systems providing a more scalable solution.

This enhanced serialization enabled the pharma company to achieve 100 percent U.S. Food and Drug Administration (FDA) and European (EU) regulatory compliance. The solution has reduced: Packaging rejection from 7 percent to less than 1 percent; cycle time by 18-29 days; and work in progress by 5 percent. In addition, the lines are now paperless with end-to-end supply chain traceability.
PowerFlex 6000 Medium Voltage AC Drives

- New design provides a competitive footprint for new and retrofit applications

Heavy industry managers face many challenges focused on reducing energy consumption, minimising downtime and optimising productivity – these challenges need to be resolved while increasing productivity and protecting their investment.

The Allen-Bradley PowerFlex 6000 Medium Voltage AC Drives can help. They provide a cost-effective solution for applications ranging from 2.3 to 11kV, with motor current up to 680A. These easy to use drives address your soft starting and variable speed control need for non-regenerative applications such as fans, pumps and compressors.

PowerFlex 6000 drives are now available in an all-in-one design from 2.4-4.16kV, 0-215A. This new design provides a competitive footprint with three different frame sizes; 70A Frame – 47.6” wide; 140A Frame – 63.4” wide; and 215A Frame – 75.2” wide. This will provide great benefit to customers looking to purchase a drive for retrofit applications and will also help reduce the overall footprint of e-house installations.

In addition, PowerFlex 6000 drives allow you to select the right drive by matching your power requirements to the drive’s power rating and achieve a 100 percent starting torque with sensorless vector control for both variable and constant torque applications. They also include a variety of communication options, that can be integrated in any control system and can be used in new and retrofit variable and constant torque applications.

Featuring an integrally mounted multi-pulse isolation transformer, PowerFlex 6000 drives help ensure low line side harmonics and improved asset utilization in your critical applications. This high efficiency transformer also helps improve overall efficiency.

PowerFlex 6000 drives have built in features like the standard supplied online UPS and internally powered cooling fans that help to lower control power requirements, which can help reduce your total cost of ownership.

To help minimise downtime in your critical applications, PowerFlex 6000 drives provide an automatic power cell bypass and have common modular power cells designed for easy removal, minimizing Mean Time To Repair (MTTR).

ControlLogix CIP Safety I/O Modules

- The Allen-Bradley ControlLogix CIP Safety I/O modules provide local safety I/O for the GuardLogix 5580 controllers in larger applications that require a high-density I/O solution. Using these in-chassis modules simplifies configuration and reduces panel space by eliminating the need for an adapter. The module can be used in local chassis of a ControlLogix controller or in a chassis linked to a ControlLogix controller across ControlNet or EtherNet/IP networks. These modules can also be used for distributed safety I/O.

The ControlLogix CIP Safety module provides a full range of digital, diagnostic digital, analog, motion control, specialty I/O, and compute modules to meet your application needs. Offering functional safety rated up to and including SIL3 and PLe, these modules also support CIP safety bridging and routing functionality. Providing enhanced reaction time, the ControlLogix CIP Safety I/O modules helps protect your personnel and equipment assets.

Compact 5000 Safety I/O Modules

- The Allen-Bradley Compact 5000 Safety I/O modules provide local and distributed safety I/O for the Compact GuardLogix 5380 safety controller and distributed safety I/O for the GuardLogix 5580 safety controller. The modules offer faster safety reaction times to help designers lower their costs and create smaller and simpler machines. They also provide additional diagnostics to help users more easily identify faults.

Using EtherNet/IP for increased overall productivity, machine builders are empowered to solve their customers’ current and future problems through a unified architecture. The system continues to expand performance capabilities within the platform.

The Compact 5000 safety I/O modules are rated up to SIL3/PLe and provide separate system power for better isolation and built-in power input with field power to I/O modules.
New Hygienic Hardware helps Protect Food Safety and Pharmaceutical Quality

The first NSF-certified HMI terminal and new hygienic servo motors can minimize contamination risks

Food and pharmaceutical makers can better protect the integrity of their products using new hygienic industrial control hardware from Rockwell Automation. The new Allen-Bradley Kinetix VPH hygienic servo motors and a new stainless-steel version of the Allen-Bradley PanelView Plus 7 graphic terminal both help minimize contamination during production and ease compliance.

The stainless-steel PanelView terminal can be used on a machine in a “splash” or contaminant zone without the need to be covered or isolated. This helps protect product quality and simplifies the cleaning processes, while removing obstructions to the human machine interface (HMI), so operators can better monitor production.

“In food and beverage manufacturing, demand for more product varieties is creating a need for smaller, more flexible machines with the HMI located in close proximity to the process,” said Dan Henneberry, business manager, Rockwell Automation. “The stainless-steel version of our PanelView Plus 7 terminal stands up to the rigors of contamination and cleaning to make this possible.”

The product is the industry’s first general-purpose HMI terminal that is certified by the National Sanitation Foundation (NSF). It has an ingress-protection rating of IP69K to support high-pressure, high-temperature chemical wash downs. It also uses a food-grade silicone gasket with a distinct blue color to help production workers notice if it’s been damaged and needs to be replaced.

The new Kinetix VPH hygienic servo motors can improve machine reliability while enhancing consumer safety by meeting stringent hygienic standards. The hygienic design – including high-grade stainless-steel housing and a smooth surface – can withstand wash downs and reduce the risk of contamination.

“Some servo motors can fail just weeks after they’re exposed to cleaning and sanitizing agents,” said Wendy Du, product manager, Rockwell Automation. “Alternatively, motors can be covered and protected during the cleaning process; but that creates a lengthier cleaning process and can introduce contamination risks. Our new hygienic servo motors make cleaning and sanitization easier and more efficient to help reduce machine downtime and improve overall equipment effectiveness.”

The servo motors are designed per the EHEDG and 3-A sanitary standards and are IP69K rated and NSF certified. They seamlessly integrate with the Allen-Bradley Kinetik 5500 and 5700 servo drive platform, using single-cable technology to help optimize a machine’s speed and accuracy. And they’re available in a range of sizes and options to help meet a variety of application needs in food and pharmaceutical production.

Safety I/O Modules for Smarter Machines

Companies that adopt a holistic approach to machine safety achieve significantly higher overall equipment effectiveness. The latest Allen-Bradley FLEX 5000 safety I/O module delivers a flexible and reliable distributed I/O solution, allowing you to choose your I/O to meet your operational needs.

FLEX 5000 I/O enhances communication with 1Gb EtherNet/IP connectivity offering higher speed and increased bandwidth to deliver increased amounts of data back to the controller. This helps future-proof control systems for a Connected Enterprise. During production, the modules can reduce costly and unplanned downtime, especially in continuous process control applications. Removal and insertion under power (RIUP) allows technicians to replace existing I/O, and an online change capability allows configuration of new I/O, both while the system continues to run.

Flexibility is provided through multiple network architectures and topology options in addition to a wide range of standard and safety I/O modules. These modules are ideal for applications that require fixed field-wiring terminations and either vertical or horizontal mounting.

The distributed I/O modules can operate in extreme environments and be used directly, connecting to copper and fiber networks. The FLEX 5000 platform provides distributed safety I/O for the Compact GuardLogix 5380 and GuardLogix 5580 controllers.

The I/O modules are TÜV certified for use in safety applications up to SIL 3 and PLe, Cat. 4. In addition, the FLEX 5000 I/O modules are selectable with conformal coating options for added protection against environmental stresses.
Latest Studio 5000 Software Reduces Machine Design Time, Enhances Industrial Security

- The latest release of the Studio 5000 integrated development environment from Rockwell Automation can help get smart machines to market faster with enhanced security. The software includes new digital design capabilities to reduce machine design, testing and commissioning times. It also introduces CIP Security support to bring industry-proven security technologies into the automation space.

To accelerate design projects, the Studio 5000 Logix Designer application now uses an AutomationML open data exchange. This allows the application to exchange data with engineering tools, such as EPLAN Electric P8. Now, engineers can design their system once and import that design data between tools, saving hours of rewriting and remapping work per project.

Also, a new Simulation Interface product uses the Functional Mock-Up Interface (FMI) standard to allow data exchange with modeling software, such as MATLAB and Simulink. Engineers can use this to virtually test machines and resolve issues before commissioning, potentially reducing on-site delivery times from weeks to days.

PlantPAx the Modern DCS

- New system features include an updated design environment and enhanced control features

In today’s competitive world, manufacturers need to choose a modern DCS that enables plant-wide control and optimization for lower cost of ownership while also providing system scalability and modularity for engineering flexibility and faster time to market.

The new PlantPAx system release helps you create smarter, more productive and protected operations. It provides system scalability and modularity for engineering flexibility and faster time to market. It is also open to enabling new technologies which improve operation and integration with the enterprise. Furthermore, enhancements to the Process Objects Library provide support for larger system architectures with updated image templates.

PlantPAx enables you to protect your organization from accidental or intentional threats to your operation. It provides real time and historical data and operators can view trends and diagnose faster, with less effort. In addition, it fully supports Windows Server 2016 and has an expanded redundant architecture.

The PlantPAx system is defined by our users for our users. This latest release includes a number of features based on direct feedback from our users. It can be delivered and maintained by a flexible support ecosystem whether it be the system vendor, local distributor, system integrator or OEM. It also simplifies design and configuration and boosts productivity with intuitive navigation and standards-based approach.

ArmorStart ST Expands the Portfolio with Safety

- ArmorStart Distributed Motor Controllers are a cost-effective, simple solution to your on-machine architecture. These controllers use quick disconnects for I/O, communications, motor, three-phase, and control power while offering several communications options.

The latest Allen-Bradley ArmorStart ST controllers deliver integrated safety, meeting SIL3 PLe CAT4 for Starter and variable frequency drives. With built in Safe Torque-Off, these controllers help protect your personnel and assets by removing rotational power to the motor when a safety demand is made. Providing a solution integrated into EtherNet/IP and DeviceNet networks, the controllers are ideal for automotive, material handling and packaging applications.

Safety is a crucial concern for every type of automation. Protecting personnel and assets is always a high priority, with far-reaching benefits. However, in the past, implementing safety solutions often meant sacrificing productivity. ArmorStart distributed motor controllers can assist you in solving that dilemma by helping to provide protection for your people and equipment while also reducing unplanned downtime.

These controllers are Connected Enterprise ready with Intelligent Motor Control features such as Add-On Profile and Automatic Device Configuration – helping you reduce downtime and increase productivity.
ThinManager Expanded for Global Use

ThinManager version 11 adds features that allow end users to increase their productivity, visualization, security and mobility.

Industrial companies around the world can now more easily realize the productivity and cost-saving benefits of using thin clients in place of industrial PCs. The new ThinManager version 11.0 software includes support for 11 local languages in 12 countries, making it easier for global organizations to configure, deploy and manage thin client devices in their operations using their native language and character sets.

The software delivers production information from any FactoryTalk application to operators wherever they are in a facility. Operators can customize the way information is delivered to any device (fixed or mobile), user or location.

The new local-language support in the software allows workers to input data, such as passwords, using their native language and character sets. Version 11.0 adds support for non-English keyboards and the ability to configure the software’s on-screen keyboard in non-English languages. More localized support features will be added in future software releases.

In addition, with version 11.0, operators have more ways to customize and view information, which helps improve their productivity. For example, at fixed terminals, operators can now build an entire control room view using a single thin client with the ThinManager software’s expanded MultiMonitor feature. The feature supports up to seven monitors on a single terminal. This creates an easy way to expand control room visualization without purchasing, configuring and managing multiple thin client devices. It also includes support for the new Allen-Bradley VersaView 5200 thin clients, which provide up to seven video outputs with 4K resolution.

Operators can also now view multiple content sources on one mobile device screen. This can help them keep an eye on multiple aspects of production and maximize productivity while on the move. For instance, a supervisor could see alarm, camera and productivity applications all on one screen. And as they walk the plant floor, the ThinManager software’s Relevance feature can refresh the content based on their location.

ThinManager version 11 is suitable for a number of industries including automotive, food and beverage, life sciences, marine, oil & gas, pulp & paper, semiconductors & electronics, tire & rubber, water & wastewater.

Flexible Servo Control and Accurate Positioning

The Bulletin VPAR electric cylinders provide an integrated solution with dynamic, precise response for a wide range of linear motion applications. Providing seamless connectivity to Kinetix 5500 and 5700 drives, these cylinders use RSLogix 5000 software to extend and retract with highly repeatable positioning, velocity, and force.

Simplifying wiring, the cylinders connect with a single cable connection and are suitable for either axial or parallel mounting. The Bulletin VPAR electric cylinders are designed to simplify your assembly and reduce mechanical design engineering, wiring and commissioning time.

Next Generation Modular Switch

The Stratix 5800 is the next generation modular switch that provides the flexibility to meet a wide variety of layer 2 (access) and layer 3 (routing) network applications. Available in both fixed and modular versions, the all gigabit platform and robust feature set support high-performance network requirements now and into the future.

The new product platform The Stratix 5800 combines advanced Cisco technology and premier integration into the Integrated Architecture to provide solutions for both IT and OT professionals.
Packaging that preserves freshness and wins on the shelf takes imagination and innovation.

We partner with leading machine builders to make you more intelligent, more connected and more productive.

Together, we’re building the future of smart machines so you can reimagine what’s possible.

Bring your vision to dinner tables around the world with smart machines

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