

LISTEN.
THINK.
SOLVE.®



Digital Transformation in Process Distributed Control Systems (DCS)

Discover how our customers and some of your process skids builders realized significant benefits through digitalization of their production processes.

PlantPAx
Distributed Control System

www.rockwellautomation.com

**Rockwell
Automation**

 Allen-Bradley • Rockwell Software

Dear reader,



I'm inviting you to discover how we, at Rockwell Automation, are enabling the industry to realize the benefits from digitalizing their factories and process skids.

The need to adopt digitalization in the face of ever-changing consumer behaviour puts increased pressure on manufacturers of products and their suppliers.

A key market trend is that consumers demand greater variety and more intuitive tailored Product selection combined with instant delivery.

While in the past consumers would select only what they wanted based on what was available on the shelf, now we are seeing them check all the options online before getting confirmation on availability and then ordering from multiple sources – at the best available prices.

Indeed, our customers are telling us that demand for higher variability by consumers is accelerating the adoption of new technology for process control.

Therefore, we have assembled a mix of different examples in different industries showcasing how customers' issues turned into an improvements for their business.

To achieve our customers' goals, it's clear that a digital plant is no longer contained within the walls of the plant itself, but instead stretches to the complete supply chain – from raw materials to the shops where consumers can order or buy their products.

When looking at a digital plant, it is clear that a separate DCS system is no longer an option, instead an integrated digital DCS is required to not only quickly meet these flexible production demands, but also to play a much larger role in the digital factory of the future. This is backed up by one customer, who told us "doing the same we did five years ago would set us back 20 years, so we need to digitalize our plants tomorrow."

While we provide a better insight in some key industry trends, we trust you also find it beneficial to read through the different blogs highlighting our solutions to respond to market trends.

Thanks you for taking the time to read through our joint achievements and do not hesitate to contact me for any question.

Friendly yours

Alain Hermans

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Need to modernize aging systems



Anchor Glass

Food & Beverage



In addition to serving the beverage industry with a variety of shapes, colors and sizes of glass bottles, Anchor Glass also produces glass containers for jams, sauces and salsa for food and beverage companies around the world. Anchor Glass facility in Minnesota, US produces up to 600 bottles per minute.

Challenges

An aging furnace was causing energy inefficiencies and threatening productivity at a Minnesota Anchor Glass facility.

The inability to see more than two weeks' worth of production data limited monitoring and trending capabilities.

To read the full application story visit

Solutions

PlantPax® Modern DCS

- Single, scalable, plantwide process control system
- Process historian improves access to real-time and historical data, and automated reporting capabilities
- System tracks most frequent alarms and prioritizes for easier operator response
- Internal model control system improved management of furnace thermal operations
- Stone Technologies implemented virtualized PlantPax® modern DCS

Results

Improved Energy Efficiency

- Improved operator flexibility and ability to monitor temperature variables through PlantPax® system
- Better handle 18 changeovers each month
- Estimated reduced energy costs of over \$1 million

Azov Controls and Zaporizhstal

Metals



Zaporizhstal PJSC turned to Ukraine-based Rockwell Automation. Recognised System Integrator, Azov Controls LLC, to not only replace and build the control systems for its fifth and sixth sinter strands, but also design and populate a brand new central control room.

Challenge

Ageing control infrastructure at Ukrainian sinter plant unable to leverage modern data-driven process advances.

Read our process application stories here

Solutions

A Rockwell Automation Integrated Process control system was installed, which included:

- OWS stations
- EWS Stations with integrated design tools
- Industrial Ethernet switches
- Multiple EtherNet/IP-based device level rings (DLR)
- Integrated Safety
- Connected variable speed AC & DC drives

Results

- Modern connected automation solution for sinter plant
- Brand new central control room
- Greatly enhanced process data capture
- More efficient energy control
- Remote access
- Automated management of automation assets

College Station Water Services (CSWS)

Water & Wastewater



Pumping groundwater from wells around the county, the College Station Water Services (CSWS) cools the water and transports it through water lines to a second pump station for further treatment. From there, water is transported into the distribution system and two elevated storage tanks.

Challenge

Aging control system was putting a strain on staff and providing little to no access into real-time process data.

To read the full application story visit

Solutions

PlantPax® process automation system

- Virtualized solution provides improved access to process data, updated alarms and events, and easy-to-interpret production dashboards

Results

Improved process control

- Increased production from 8.1 million gallons per day to 11.8 million gallons

Reduced operations costs

- Reduced energy costs by \$65,000 annually
- Reduced spare parts inventory from \$250,000 to less than \$20,000 per year

Reduced downtime

- Standardized solution eased troubleshooting and maintenance
- Decreased downtime through remote troubleshooting capabilities and virtualized servers

Columbia Pipeline Group

Oil and Gas



Columbia Pipeline Group (CPG) recently modernized its operational environment by implementing a modern distributed control system to improve reliability, gain better insight into its production data, and ease maintenance.

Challenge

Modernize the operational environment to improve reliability, gain better insight into production data, and ease maintenance.

To read the full application story visit

Solutions

Virtualization

- Virtualized PlantPax® process control system shares information across facilities and up to executive level

Information-Enabled

- Rockwell Software applications enable system control, monitoring, reporting and data recording over EtherNet/IP

Long-Term Maintenance

- FactoryTalk AssetCentre software helps securely control user access in the field.

Results

- Reached 99.5 percent reliability at 100 percent capacity
- Provided information to the Enterprise Analytics group to make business decisions based on real-time and historical data
- Saved approximately \$2.3 million in maintenance costs in 2014

Du Pont

Food & Beverage



The Du Pont plant in Brazilian city of Esteio, Rio Grande do Sul, founded in 1958, was the first to manufacture margarine in the country. Currently, it provides protein solutions for major players in two primary markets: meat (which uses it for processed meats, for example) and nutrition (shakes, juices, cereal bars, among others).

Challenge

Perform the migration of obsolete DCS and PLC systems, at the end of their service life and unsupported by the manufacturer, with large number of I/O points and within three weeks.

Read our process application stories here

Solutions

Deployment of the PlantPax® Distributed Control System (DCS) with support from technical consultants and Engineering from Rockwell Automation.

Results

Increased operational availability, faster maintenance agility, better control of operating costs, and gains in flexibility in the control system.

Energy Control Technologies (ECT)

Oil and Gas



Energy Control Technologies (ECT), an OEM member in the Rockwell Automation PartnerNetwork™ program, is one of the companies helping drive this relatively recent energy boom.

The Iowa-based company designs, builds and supports turbomachinery-plant control systems for oil and gas production.

Challenge

Replace multiple proprietary systems used in turbomachinery control with one open, integrated platform.

To read the full application story visit

Solutions

PlantPax® DCS

- Technology based on open-communications standards serves as common automation platform by connecting multiple control systems
- Integrated HMI gives workers visibility into all systems from one screen

AADvance Fault-Tolerant Control System

- Provides SIL-3 hardware process control for auxiliary systems; manages overall system trips, interlocks and permissives

Results

Reduced Costs

- Integrated platform speeds deployment, reduces spare-parts inventory and enables end user to keep maintenance activities in-house

Simplified Operations

- Workers can initiate operations with two button pushes and view all aspects of operations from single HMI

Gelatine production

Food & Beverage



Gelatine is a multitasking ingredient for countless applications. Gelatine manufacturers must adhere to stringent national and international food processing requirements. To help safeguard future production of a large-scaled gelatine manufacturing plant, an innovative risk management approach was undertaken to identify and subsequently replace legacy equipment with assistance from Rockwell Automation.

Challenge

To upgrade legacy DCS system to mitigate production risk with minimal disruption to production processes and output.

Solutions

- Integrated plant-wide control – PlantPAx® distributed system delivers integrated plant-wide control
- Innovative project execution – FEED mitigated project risks and reduced execution time
- FAT and operator training reduced project risks
- IO adaptor card significantly reduced integration time

Results

- Minimal downtime to A-grade product – Careful planning, operator input, FEED and FAT prior to commissioning minimised downtime at the plant during changeover
- Safeguarding production – New system helps secure gelatine production for many years to come

To read the full application story visit

Kraft Heinz

Food & Beverage



Since 1952, Ore-Ida, a part of the Kraft Heinz Company brand, has appealed to people's appetites with dozens of frozen-potato varieties. Its production operations are based in Ontario, Oregon, where Ore-Ida was founded. The facility produces all of Ore-Ida's frozen potato products, about 800 million pounds every year.

Challenge

Identify cost-saving opportunities to justify cost of upgrading aging control infrastructure.

Solutions

Model Predictive Control

- Rockwell Automation team identified innovative solution to identify process improvements and maximize production using data analytics
- Pavilion8 MPC software assesses current and predicted operational data, compares it to desired results, and optimizes process control

Results

Increased Production Capacity

- Process integration and optimization led to 10 percent increase in production capacity on production line – more than doubling project's goal

Prepared for Long-Term Growth

- Savings provided opportunity to upgrade aging control system infrastructure and modernize plant automation

Reduced Product Variability

- Variability issues are detected and addressed throughout production to help produce consistent food products

To read the full application story visit

Optima Control Solutions

Food & Beverage



The dangers of obsolescence were identified early on at a leading British biscuit manufacturer in its mixing plant, where older hardware was showing its age in terms of performance and failures. To address this issue, the biscuit manufacturer approached Rockwell Automation, the manufacturer of the ageing legacy system, who collaborated with Optima Control Solutions Limited.

Challenge

Optima Control Solutions was tasked with replacing an ageing recipe-control system with a modern batch control solution.

To read the full application story visit

Solutions

A Rockwell Automation solution was installed, which included:

- Allen-Bradley ControlLogix programmable automation controllers
- Migration/conversion solution
- Batch servers
- Rockwell Automation integrated-display computer running FactoryTalk View Site Edition (SE)
- Rockwell Software FactoryTalk Batch software solution
- EtherNet/IP device-level ring network topology
- Technical implementation from a Rockwell Automation batch specialist

Results

- Reduced obsolescence risk
- Reduced downtime
- Quicker and easier migration

Tata Steel

Mining, Metals & Cement



Tata Steel's limestone quarry and lime kilns, located in Cumbria in the UK, have been producing quicklime and limestone products since 1962. At the plant in Shapfell, the company produces high-performance lime products created to meet the requirements of a wide range of applications. Lime products include CE-marked fine lime, other size grades and ground limestone in flexible quantities and at short notice.

Challenge

Tata Steel needed to upgrade the control solution on four of its kilns in Shapfell, but the window for replacement per kiln was just 16 hours.

To read the full application story visit

Solutions

A Rockwell Automation solution was installed, which included:

- Dual redundant Allen-Bradley ControlLogix PACs
- 5,000+ Allen-Bradley POINT I/O nodes
- FactoryTalk View site edition (SE) SCADA
- FactoryTalk Historian
- FactoryTalk VantagePoint
- EtherNet/IP Network
- VMware-based virtualisation

Results

- Far less risk of failure
- Full off-line virtual testing prior to install
- Off-line virtual training prior to install
- Modern communication network enabling data capabilities in The Connected Enterprise
- Real time visibility of manufacturing/process data
- Connectivity with other site activities

Tereos France

Food & Beverage



Tereos France is a leading company in the French sugar industry with nine sugar factories, five distilleries and four packaging facilities, producing an annual total of 1.5 million tonnes of sugar and 500,000 cubic metres of alcohol and bioethanol from beet.

Challenge

Tereos' objective: to modernize and optimize control of boilers and integrate these within a single control and command system for the whole factory.

To read the full application story visit

Solutions

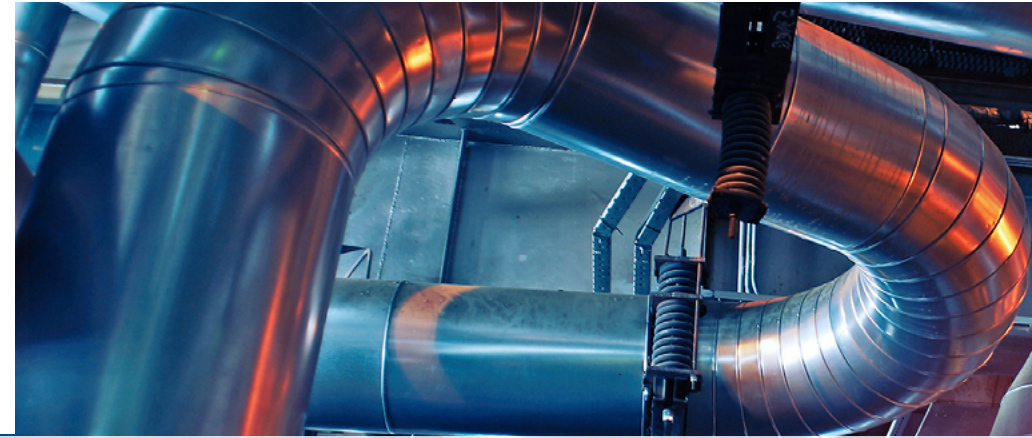
A Rockwell Automation solution was installed, which included: PlantPAx® Process Automation System

- The solution, based on the Logix Control Platform with Control Logix PAC, replaced an outdated DCS and provides a flexible process control system with excellent reliability
- New I/O platform eases system upgrades
- Services
- Turnkey project approach managed by Global Solutions team

Results

- Boiler control has been improved, in particular in terms of monitoring reheating; it has been possible to link the boilers together, and power matching is now carried out automatically
- Increased reliability of boiler operations
- The boiler control and command system is now totally integrated with the other factory units, allowing traceability to be centralised for the entire production site.

Time to Move Beyond Aging Assets



Chemical producers face many business challenges – from stiff competition and reduced margins, to limited human capital, regulatory compliance and supply chain digitization. While trying to juggle these challenges they also face the day-to-day realities of dealing with aging assets and growing support costs.

Decades-old chemical plants across the U.S. are working to address a wide range of equipment challenges, including obsolete equipment and unplanned downtime, and limited visibility into critical-asset performance.

With the digital landscape changing rapidly, chemical producers are looking to technology to help solve their issues with a quick ROI. That's why it's important to rethink business decisions and consider technology investments that will deliver both incremental and long-term ROI.

The connected production technologies available today are far beyond what was available just 10 years ago. Advanced technology gives chemical producers immediate relief from the constraints of obsolete equipment and limited human capital and domain expertise. It can also help merge IT and OT systems to provide seamless connectivity to manage production and supply chain data into actionable real-time information.

This connected, information-driven approach to chemical production can be called a connected chemical plant.

Building a connected chemical plant doesn't have to be daunting. Think of it like this: By strategically prioritizing investments around smarter technologies, a connected chemical plant offers nearly unlimited opportunities to monitor and improve production performance. So, what does this mean for you in everyday operation?



Need for open, scalable and secure solution that meets all the requirements

Increased asset utilization: Optimizing asset utilization begins with being able to measure asset performance and identify production problems in real time. A modern DCS can integrate all aspects of automation and information into a single, plant-wide infrastructure. Simultaneously, integrated power control systems can capture the electrical data from aging production assets to monitor their performance and help minimize unexpected downtime and predict equipment issues. It's a win-win for chemical producers.

Improved operations flexibility: A connected chemical plant can make batch production more agile and flexible by allowing operators to more easily make changes and bring new products online faster. Difficult to measure batch variability causing quality and throughput issues? No problem.

Reduced risks: Operational and regulatory risk facing producers can be easily understood and managed with a connected chemical plant. Scalable safety instrumented systems (SIS) allow chemical producers to apply various levels of risk mitigation as required by their

specific needs. Additionally, pre-engineered SIS solutions are also available to fill capability gaps and address specific business challenges in older plants in the most cost-effective manner.

Improved maintenance and support: Many producers struggle to support the mix of automation technologies that they accumulated from multiple vendors over many years. Standardizing and consolidating technologies in a connected chemical plant reduces the number of systems with which maintenance technicians and support teams must support and stock spares.

With these capabilities in place, chemical producers can better monitor and upgrade aging assets as needed. You can reduce the support costs associated with unplanned downtime and myriad systems. Then, you can focus newfound opportunities to improve operations and boost production.



AB electric

Water & Wastewater



In a recent green field clean water treatment project in Denmark, Danish system integrator AB Electric A/S was tasked with developing and installing a comprehensive control and monitoring solution for a facility spread over several sites and locations that are kilometres apart.

Challenge

AB Electric was tasked with developing and deploying a state-of-the-art PlantPax® solution at a four-site Greenfield water treatment plant in Denmark, with connection to a central control room.

Power consumption optimisation was another important part of the brief.

To read the full application story visit

Solutions

A Rockwell Automation PlantPax® solution was installed, which included:

- PlantPax® operator workstations with advance diagnostics
- Process automation controllers
- Distributed I/O
- Variable-Frequency Drives
- EtherNet/IP, fibre-optic, internet and integration of 3rd party devices/protocols
- Stratix switches and routers
- 19 inch integrated stainless steel panel computers
- WIN-911 remote alarming platform

Results

- Robust process control solution exploiting off-the-shelf hardware
- Highly scalable and highly flexible for future expansion
- Strong scalable foundation for other water industry projects

Liquid Petroleum Distributor

Oil and Gas



One of the largest, independent liquid petroleum distributors in the United States operates a marine oil terminal that occupies 250 acres on the East Coast. The tanks at the acquired terminal can hold more than 4 million barrels of petroleum products, and are strategically located in a major U.S. harbor for easy transportation access.

Challenge

United States liquid petroleum distributor needed to automate a newly acquired major oil tank farm.

To read the full application story visit

Solutions

- Virtualized PlantPax® System With Production Intelligence – Intuitive modern DCS platform that integrates with simulation software for pre-testing and training
- Pre-configured objects and faceplates for easy integration
- System provides production intelligence by collecting and reporting plant-wide data
- MAVERICK Technologies, a Rockwell Automation company, designed and implemented the system

Results

- Decreased Implementation Costs – PlantPax® DCS and the Rockwell Automation library of process objects eased implementation, cutting costs in half
- Rapid Operator Training – The intuitive system platform and simulation software reduced operator training to one day
- Eased Troubleshooting

Prodesa

Power generation



Prodesa, an engineering company based in Zaragoza (Spain), improves biofuel production technologies with innovative processes by providing comprehensive solutions for solid biofuels production and environmental protection. Prodesa is committed to the development based on knowledge and technology with the aim of contributing solutions that aid in resolving social and environmental problems and improving the quality of life.

Challenge

Automate all systems, equipment and processes in the world's second biggest pellet production plant.

Solutions

Rockwell Automation PlantPAx® distributed control system

- Library of Process Objects
- EtherNet/IP network
- Allen-Bradley GuardLogix SIL 3 safety controller
- Distributed I/O over EtherNet/IP
- Operator Stations (OWS), Engineering Stations (EWS)

Results

- Straightforward installation and commissioning of more than 6,000 I/O points
- Time savings in design, engineering and simulation
- Remote management and maintenance
- Reduce training time for the operators
- Higher productivity and high energy efficiency

To read the full application story visit

Petroecuador

Oil and Gas



Supervisors of the EP Petroecuador Balao terminal decided to carry out a complete renewal and updating project of the pumping station operations, which included the development of an automatic control system for the management of the maritime terminal.

Challenge

Development of an automatic control system to optimize management at the EP Petroecuador Balao terminal.

Solutions

- PlantPAx® modern distributed control system
- PowerFlex 7000 medium voltage AC drives

Results

- Tripled their capability of loading and unloading ships
- Reduced the down time of a freighter, which means significant cost savings for the company
- Optimized delivery to the Esmeraldas refinery for processing and distribution of fuel

To read the full application story visit

Tradebe

Waste Management



Tradebe is a leading international company on industrial waste management with annual turnover of €400 million in 2014. The company operates more than 60 fixed plants in Europe (Spain, United Kingdom, France) and in the United States. Tradebe employs 2,130 people worldwide.

Challenge

Tradebe needed an open, scalable and secure process control solution for a new hydrocarbon terminal near Barcelona.

Solutions

A Rockwell Automation PlantPAx® process control solution was installed, which included:

- High performance controllers
- Low density distributed I/O
- Virtualized servers and operation workstations in a centralized control room
- Integrated safety systems
- Communication backbone based on EtherNet/IP
- Transaction management with ERP

Results

- Scalable and flexible system that adapts to the plant structure
- SIL safety level accomplished
- Easily integrated with different terminal subsystems
- Connectivity with Terminal ERP system

To read the full application story visit

Peace of Mind



Some decisions are incredibly easy to make, like which restaurant to go to, or which movie to watch. Others, which attract greater – for want of a better word – risk, can take a little longer, such as which car to buy. If you scale this up to a new house purchase the risks become commensurately larger.

Now imagine this decision is based on you making the best possible use of your company's money for a new asset purchase or a revised operational approach. Here the challenge requires an incredible amount of investigation and due diligence.

In all of the personal instances, there is one common factor – peace of mind. A restaurant or movie may have five stars, a car might be Car of the Year and the new house is in a popular up-and-coming area. The question is, how do you attach this type of perception and, of course, peace of mind, to an industrial environment?

A couple of years ago, my company Alfasigma made a decision to evolve its operations, to give us the capabilities to address upcoming legislation and more stringent pharmaceutical industry demands. The questions were, where do we start and who do we get to help us? This is where peace of mind and capabilities come into play.

We knew we needed a package that covered every facet of our operations – from HVAC, through batch control and onto serialisation across our supply chain – and delivered the data we needed for dissemination both internally and externally. This all-in-one technical solution is something in demand all across the industry but, surprisingly, is not offered by too many companies.

To compound the complexity of the decision-making process we also identified the need for a supplier that already had a significant pedigree in this market and understood



Need to address growing customer demands

international demands. And, just to make them work really hard, we modular and scalable solution – we weren't going to jump in with both feet, we wanted to see a pilot project that could be scaled up and migrated across our existing infrastructure. We needed an organisation that would hold our hand and lead us towards an optimum solution.

Each stage of this planning process saw more and more suppliers falling by the wayside as we culled the list of potential suitors down to a select few. I am pleased to say that we eventually opted for one that said the right things, had the right solutions, knew precisely what we wanted and knew the pharmaceutical industry inside out. More importantly, they give us the all-important peace of mind.

So, where are we now? This process started two years ago and we have made huge strides. From the very first step of knowing the best time to start the evolution, we have since developed a pilot project based in a new development at one of our plants, which is running in parallel with an existing line, so we can compare results.

In terms of deliverables we are expecting efficiency gains, far greater data integrity, more stringent adherence to industry and legislative requirements, better process control and, of course, better quality levels. We can now show our customers and the industry in general that we are in line with GMP guidelines and that we can offer traceability and serialisation for all production parameters.

There aren't many suppliers that could offer what we needed, even fewer had the necessary industry experience and only one gave us the peace of mind we were looking for all along. This is a complicated process and, sure, it has its risks, but find the right supplier and life becomes immeasurably easier.



Food & Beverage



corosys Prozeßsysteme und Sensoren GmbH (corosys Process Systems and Sensors plc) is a manufacturer and supplier of sensors, components and complete process systems for the worldwide brewing, beverage, chemical/ pharmaceutical and biotechnology industries.

Challenge

corosys needed to adopt a new control system for the US brewing industry, which entailed a complete redesign of its existing architecture.

To read the full application story visit

Solutions

A Rockwell Automation solution was installed, which included:

- Integrated Architecture
- Allen-Bradley CompactLogix programmable automation controller (PAC)
- Allen-Bradley PanelView HMI

Results

- Engineering time cut from four to two days
- Simpler deployment and integration due to hardware and software running in a single platform
- Single, open communication protocol offers more streamlined access to wider control infrastructure and remote maintenance channels
- All hardware already certified for US market
- Simpler programming than incumbent supplier
- Ability to offer remote maintenance for customers (already put into practice)

Oil and Gas



DELIN Elettronica is a system integrator headquartered in Modena, Italy. Established in 1983 as a distributor of electronics systems for industrial automation, the company has since moved its focus from sales to engineering and now offers its system integration capabilities in both automation and process control applications.

Challenge

Technical specifications imposed by the end-customer demanded a considerable evolution of the control system architecture, with safety management at SIL 2 Level, full redundancy and smart equipment management on Foundation Fieldbus.

To read the full application story visit

Solutions

A PlantPAX® distributed control solution from Rockwell Automation has been installed.

This includes:

- High End process controllers in standard and SIL2 configuration
- Rockwell Automation Library of Process Objects
- Remote I/O in redundant configuration
- EtherNet/IP Infrastructure with DLR technology
- Foundation Fieldbus
- HART protocol
- Redundant OPC interface

Results

- Project standardisation
- Availability of real-time information on equipment diagnostics
- Smart equipment management on Fieldbus Foundation

Chemical



For over half a century, KCC has been a technology innovation in building materials such as glass windows, doors, exterior/interior materials and flooring. They moved into the silicone business, an area ripe for the creation of high-value products in the fields of specialized paints and next-generation precision chemical engineering. In April 2014, KCC was named the No. 1 brand in the windows and doors material segment.

Challenge

Increased market demand required new line at new facility.

Increased engineering development time and cost.

Unplanned downtime and increased maintenance.

Outdated machines, devices and components.

To read the full application story visit

Solutions

- Standardized system enabled by PlantPAX®, The Modern DCS
- Integrated Architecture based on ControlLogix L7x, Motion and EOI
- PlantPAX® library and pre-designed faceplates

Results

- Improved efficiency 20% for consistent cost savings
- Reduced engineering time from 14 months to 11 months (through simultaneous electrical design and program development)
- Reduced two-hour downtime to one-hour recovery; with 50% cost savings for maintenance

Oil and Gas



ProLabNL, located in Arnhem in The Netherlands, is an independent test facility for oil and gas process equipment. The company offers state of the art, large-scale test facilities that operate with live hydrocarbons (natural gas and crude oil) at high pressures in order to simulate real oilfield conditions. Its flow loops have been used extensively for subsea technology qualification programs of major oil and gas companies.

Challenge

ProMotion BV was tasked with finding a replacement process control system that could address multiple technical- and time-related engineering issues coupled with stringent customer demands.

To read the full application story visit

Solutions

A Rockwell Automation PlantPAX® DCS was installed, which included:

- Rockwell Automation Library of Process Objects
- High-level process automation controller
- SCADA software
- Historian software
- Asset-management software
- Data collation and trend presentation software
- TechConnect support contract
- Knowledge and support resources

Results

- 50% reduction in set up
- Significantly reduced engineering effort
- Easier-to-use software
- Better information presentation using multiple displays
- Far more flexible system

Quimikao

Household & Personal Care



Quimikao was established in Mexico more than 35 years ago. Today Quimikao produces products for the North and South American, Asian and Australian markets. The company primarily produces cationic surfactant derivatives of fatty acids for use in a wide range of products, from fabric softeners and fragrance compounds to asphalt emulsifiers and corrosion inhibitors used in petroleum.

Challenge

Construct a greenfield facility in Mexico to meet growing production demand.

Model design of new facility after a chemical plant in Japan, but use a North America-based control system supplier to reduce language and time-zone barriers.

To read the full application story visit

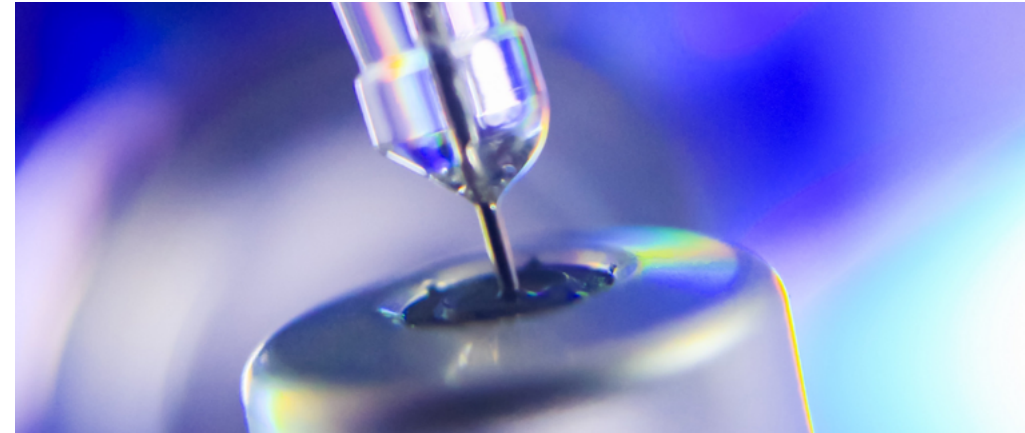
Solutions

- PlantPAX® Process Automation System
- Single platform controls every phase of the nitrile production process.
- Advanced networking, monitoring and diagnostics help increase preventive maintenance and reduce repair costs.
- Virtualized Infrastructure
- The higher availability and faster disaster recovery compared to conventional infrastructures reduces equipment downtime.

Results

- Successful Technology Transfer
- Increased redundant control and visibility into all aspects of processing
- Performance Improvements
- Increased production efficiency, and improved product quality and consistency

Stemming the Next Pandemic



At the iBio plant in College Station, Texas, living plants are used as bioreactors to produce vaccine-grade protein.

They grow 330,000 kg of plants in one year, and the biopharmaceutical company's facility is more than 100,000 sq. ft., stands more than five stories high and sits on a 21-acre site.

The iBio Vertical Pharming manufacturing process involves three steps — plant production, plant infiltration and downstream purification in autonomous cleanrooms. Everything is automated— they don't allow people to touch the plants.

The process was originally developed in a challenge from the Defense Advanced Research Projects Agency (DARPA) and involved being emailed gene sequence and a request to make 50 million doses in 12 weeks. It's what stops a pandemic in America.

Some 1,200 plants of vacuum-infiltrated *Nicotiana benthamiana* (an Australian tobacco

plant) are seeded per tray and sent to one of two grow rooms. The 55-ft-high laminar air-flow room where germination takes place was designed using computational flow dynamics and temperature-controlled within 2 °F. The second, larger growth room stands 14 layers high with a capacity of 1.2 million plants.

Agroinfiltration is where the magic happens. It's where iBio infects the plant with the vector for a transient expression of new protein. The plants are placed upside down in an infecting liquid, evacuated to one-third of atmosphere, and brought back to atmospheric. All of their protein-synthesizing DNA is hijacked.

Once the plants are fully grown, their proteins are extracted in one of the seven autonomous clean rooms. Built as portable pods, each clean room has 100% redundancy, are fully moveable via air bearings and are controlled using the PlantPAX® distributed control system.

They used some very advanced techniques.



Process skid solutions

And now, they're currently working in Brazil and South Africa to transfer the technology to other countries.

Their strategy is that improvement should be iterative, not retrospective. For iBio, that means starting with baseline equipment and software, then improving on it. With the initial layers of automation already in place, the next step will be to add the manufacturing execution system (MES) to the top layer.

In the pharmaceutical industry, the final customer is the patient. Mistakes are not allowed.

They have to be 100% correct each time, which is a daunting task. Quality by Design includes assessment, quality target product profile, risk analysis, process development and validation.

As one of the most regulated industries on the planet, iBio is thinking inside the box. And they must have a constantly improvable environment.

Find out more about the PlantPax® modern DCS from Rockwell Automation.



Bausch+Ströbel

OEM



Bausch+Ströbel, from Baden-Württemberg, has been focusing on special-purpose machines for the global pharmaceutical industry for the last 51 years. Its product offering ranges from semi-automatic machines for labs, through fully automated single machines, on to highly complex facilities for the industrial processing.

Challenge

Development of VarioSys a maximum flexibility, user-friendly modular system, in which a SKAN standardized isolator system manufactured by the company can be combined with a wide range of machine modules from Bausch+Ströbel on the basis of a lock-and-key principle.

Solutions

- Allen-Bradley ControlLogix® programmable automation controller (PAC)
- Allen-Bradley Kinetix® 5700 servo drives
- Allen-Bradley servo motors
- EtherNet/IP™ network

Results

- Nested vials can now be processed with 100% in-process control (IPC) at full machine output
- Maximum flexibility
- Seamlessness

To read the full application story visit

Dinnissen Process Technology

OEM



Dinnissen Process Technology was founded in 1948 as a machine specialist for the compound feed industry. Rapid regional growth and development of this sector continually challenged the company to apply all of its innovative talent and expertise. The company's customer list now includes many of the world's leading foodstuffs, chemical, pharmaceutical and feed manufacturers.

Challenge

Catering for all customer demands, including those enforced by local, national or international legislation and developing new, tailor made solutions.

Solutions

- An Allen-Bradley GuardLogix® programmable automation and safety controller
- Allen-Bradley PowerFlex® 525 variable-speed drives
- Allen-Bradley PanelView™ HMI
- Allen-Bradley POINT I/O™
- Stratix® 2000 Unmanaged Ethernet Switch
- EtherNet/IP™ network

Results

- Designing of a new mixing concept that is as lean as possible
- Addressed specific customer demands
- Easy programming

To read the full application story visit

Feluwa

OEM



FELUWA Pumpen GmbH originally focused on the manufacturing of combustion, air and water technology equipment, but soon switched to concentrating on pump technology. In the meantime it joined the ranks of the leading suppliers of technology in this field. In this context, the company covers the entire spectrum, starting with their development, construction and manufacturing, right up to global sales and encompassing services.

Challenge

Continuously changing requirements regarding modern pump systems.

Solutions

- Allen-Bradley PowerFlex 525 variable-speed drives
- Allen-Bradley PowerFlex 753 variable-speed drive

Results

- Major efficiency
- High degree of availability
- Low wear and tear

To read the full application story visit

Frames

OEM



The Frames Group describes itself as providing the vital link between the well and the pipeline in the international oil and gas industry. It designs, builds and delivers separation technology, oil and gas treatment, flow control and safeguarding systems and modules and integrated solutions, such as total plants, working directly with its customers to optimize upstream, onshore and offshore processes.

Challenge

Frames Flow Control & Safeguarding was challenged with constructing nine autonomous well-site control and safety skids that could operate effectively in a remote location with minimal operator interaction.

Solutions

A Rockwell Automation PlantPAx® DCS solution was installed, which included:

- ATEX-certified Controllers & I/O
- ATEX-certified managed Ethernet switches
- ATEX-certified panel PCs and OWS
- AADvance safety controllers and software
- In depth industry and application knowledge

Results

- Fully autonomous, solar-powered well-site control and safety skids
- Fully integrated control and safety solution
- Simpler integration with ESD and third-party equipment
- Easier programming due to the Rockwell Automation Library of Process Objects I
- Simpler installation due to open integrated environment
- All on single skid – real estate and cost savings
- Low power demands suitable for solar power

To read the full application story visit

FrymaKoruma

OEM



FrymaKoruma is among the world's leading suppliers of process engineering machines and process facilities for the cosmetics, chemical and pharmaceutical industries, as well as for food manufacturing.

Challenge

Development of Dinex machine, which is an all-rounder, capable of manufacturing everything from pharmaceuticals to toothpaste.

Solutions

- Allen-Bradley® CompactLogix™ programmable automation controllers
- Allen-Bradley® FLEX™ I/O modules
- Allen-Bradley PowerFlex® AC drives
- Allen-Bradley PanelView™ graphics terminal
- Allen-Bradley VersaView® industrial computer

Results

- Highly diverse scope of functions
- Increased flexibility – machines are easily adapted to customer's requirements
- Fast support from Rockwell Automation

To read the full application story visit

IMA Automation

OEM



IMA Automation comprises leading companies in the assembly industry. This group has proven itself as one of the most innovative world leaders in the field of assembly solutions. IMA's philosophy is based on research and innovation and, as a result, owns more than 1,700 patents and patent applications.

Challenge

Design of the newest modular platform for the automation industry, which had to meet the need for speed and flexibility in manufacturing.

Solutions

- MagneMotion independent cart technology
- Allen-Bradley® ControlLogix programmable automation controller
- Allen-Bradley PowerFlex® variable-speed drives
- Allen-Bradley Kinetix® servo drives
- Allen-Bradley PanelView™ Plus HMI's
- FactoryTalk® View
- EtherNet/IP™ network
- Stratix™ switches

Results

- Streamlined design and programming times
- Reduced wiring
- Easier troubleshooting, testing and validation
- Lower TCO
- Incredible machine flexibility
- Reduced maintenance, changeover and training times
- Minimized installation and start up times

To read the full application story visit

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Challenge

Development of EVO FLEX ROTARY, an assembly-indexed rotary platform based on space-saving design, which is ideal for the assembly of large quantities of complex, market-ready products, such as medical devices and caps & closures.

To read the full application story visit

Solutions

- Allen-Bradley® ControlLogix™ programmable automation controllers
- Allen-Bradley GuardLogix® safety controller
- EtherNet/IP network
- Allen-Bradley POINT I/O™
- Allen-Bradley PowerFlex® 525 variable-speed drives
- Allen-Bradley Kinetix 5700 servo drives

Results

- Increased flexibility
- Streamlined design and programming times
- Reduced wiring
- Easier troubleshooting
- Reduced maintenance and training times
- Enhanced safety

Zellwag

OEM



Based in Frauenfeld, Switzerland, Zellwag AG was founded in 1990 as Engineering & Sales company. In 2015 Zellwag Pharmtech AG was founded and became part of Rychiger a world leader in filling and sealing solutions. The company focuses on machines and customised solutions that deliver affordable Swiss quality, high flexibility and striking simplicity.

Challenge

Design of a fully automated robot-based filling and closing machine which complies with pharmaceutical and biotech manufacturers' regulations.

To read the full application story visit

Solutions

- Allen-Bradley® Compact GuardLogix™ programmable automation and safety controller
- Studio 5000® programming environment
- Allen-Bradley Kinetix® 5700 servo drives
- Allen-Bradley VersaView 5400 IPC Panel PC
- EtherNet/IP™ network

Results

- Fast product change,
- Easy cleaning of the machine
- Compact design and high flexibility
- Easier maintenance and troubleshooting
- Reduced training time
- Quicker changeovers
- Reduced format costs

Zeton

OEM



As the world's leading designer and builder of innovative lab scale systems, pilot plants, demonstration plants and small modular commercial plants, Zeton BV helps its customers bring new technology and processes to market, faster, with less risk and lower cost.

Challenge

Zeton works hard to understand specific customer requirements and its unique solutions at the laboratory, pilot plant and demonstration plant scale provide exceptional value in the most challenging process development niches.

Solutions

- Allen-Bradley ControlLogix
- programmable automation controller (PAC)
- Allen-Bradley PanelView Plus HMI
- FactoryTalk® View Site edition (SE)
- EtherNet/IP™ alongside Modbus and Profibus

Results

- Engineering time for software developments reduced by 30%
- Hardware and software are easy to learn, operate and maintain

To read the full application story visit

Zippe

OEM



Within the international glass industry, ZIPPE is renowned as THE contact of choice for batch and cullet plants. Owner-operated in its fourth generation, the company was formed in 1920 and supplies everything from one source – from planning up to commissioning. 45 experienced individuals are responsible for the realization of modern, high-performance automation and control systems at ZIPPE.

Challenge

Erection and commissioning of a high-availability and extremely powerful batch plant within the timespan of only one year.

Connection of external systems such as a special electronic weighing system and bar code readers.

Setting up of a fully redundant system.

Read our process application stories here

Solutions

A Rockwell Automation solution was installed, which included:

- PlantPAX® ready system from Rockwell
- Allen-Bradley PowerFlex AC drives
- EtherNet/IP Network

Results

- Cross-discipline solution
- Integration
- Simple and quick implementation of external systems
- High availability
- Simple scalability
- Uniform look and feel for users
- Visibility of ongoing processes
- Simple fault diagnostics

LISTEN.
THINK.
SOLVE.®



Facility of the Future

Achieve a new level of efficiency and flexibility

Biotech solutions from Rockwell Automation are built on a scalable automation platform, delivering fully integrated, flexible systems.

Built-in plug & play technology allows you to easily configure and control mobile or disposable equipment.

Combined with our Manufacturing Intelligence and MES solutions, the solution provides flexible multi-product manufacturing with real-time visibility and traceability.

Learn more
about our
Biotech solutions

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Distributed Control System

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