Siemens elected as BASF’s global DCS supplier

Validated building control technology based on Simatic at Boehringer Ingelheim

Sipart positioners ensure liquid helium supply for superconducting magnets at CERN

Almost as Cold as it Gets
Siemens was officially elected as one of BASF’s global DCS suppliers in July this year. One important factor contributing to that decision was the life-cycle cost concept Siemens has developed for BASF.

Siemens has developed a special version of the Sitrans positioner that was installed in the Large Hadron Collider at CERN.

The description data-based concept Electronic Device Description is currently the best option for integrating intelligent process instrumentation devices.
Dear Readers!

What arguments will convince BASF – the world’s largest chemical company – that Siemens is the right partner for supplying distributed control systems? The International Corporate Account project team has found an answer to that question with continuous effort during the last two years and a lot of personal commitment and expertise. Listening to and understanding the client and his challenges, developing the right solutions that will help him in solving these challenges was the first step.

How can we support BASF in optimizing plant productivity and availability? How can we reliably ascertain life-cycle costs for an automation solution at a very early stage? Our answer to these questions was the development of a life-cycle cost concept.

The second step was proving these claims in real-life projects all over the world. It is a very important aspect for BASF that with Siemens, they can rely on established and stable design, engineering and service processes. That required an open collaboration and communication from both parties. The result was presented at the end of July this year: Siemens has been officially elected as one of BASF’s global DCS suppliers. Both the Account Management team and Siemens as a whole can be rightly proud of that achievement. You will find more on this story on page 6 of this issue of Process News.

Of course, we also provide information on topics and applications of Siemens services and solutions outside BASF that we hope you will find useful. One application is quite exotic – and posed some very specific challenges: More than 1000 valves of the new collider at CERN have been equipped with Sipart PS2 positioners that control the liquid helium supply of the Large Hadron Collider – at a temperature of a mere two degrees Kelvin. The article on page 10 gives more detailed information on this exciting case study.

Best regards,

Thomas Dieckhoff
Siemens Corporate Account Manager BASF
Siemens ranks number one as plant operations software provider

Siemens was ranked as the leading provider of software for plant operations on MSI Magazine’s Top 100 Software Providers List. Moreover, Siemens was able to secure a sixth place as a leading global provider on MSI’s Top 100 list of supply chain, enterprise, product life-cycle and plant operations software, next to renowned business software enterprises such as SAP, PeopleSoft and Oracle. MSI is a manufacturing and information technology magazine that uses company and license revenues as well as revenues outside of the Americas, to compile the list.

The impressive sales growth over the last year of Simatic IT contributed to edging out the competition in both categories of Plant Operations and Global Software Providers. Simatic IT revolutionizes plant operations by integrating all manufacturing-relevant applications, allowing enterprise-wide communications and coordination through a “component-based” approach. Simatic IT follows ISA-95 guidelines for MES functionality in its connection to enterprise and business systems.

Find out more:
www.siemens.com/simatic-it
E-mail: marketing.simatic-it@siemens.com

Siemens supplies equipment and engineering services for Inulin production in Chile

Orafti S.A has awarded a large contract for equipping a new Inulin extraction plant to Siemens. The plant is owned by Orafti S.A. in San Pedro, Chile. Siemens will provide the electrical power supply systems, as well as the process control system Simatic PCS 7 and the drive solutions based on Micromaster, including all related engineering and commissioning services.

Orafti, the leading worldwide producer of food ingredients such as Inulin, Oligofructose, fructose syrups or rice starch products, is part of the Raffinerie Tirlemontoise group that is a subsidiary of Südzucker, one of the world’s largest sugar manufacturers.

Find out more:
www.siemens.com/pcs7
E-mail: josef.scharvogel@siemens.com

InBev is the biggest South American beverage company, with subsidiaries in Brazil, Argentina, Paraguay, Peru, Guatemala, the Dominican Republic and Ecuador. For three plants located in Brazil, Siemens will supply the process control technology using the process control system Simatic PCS 7 and Simatic Batch.

The plants are located in Sao Luis, Goiana and Cuiaba. In Sao Luis, Simatic PCS 7 will be used for automating the brew house and filtration. In Goiana, Siemens will implement PCS 7 for the cellar automation, and in Cuiaba, brew house, silo and filtration units will be automated with PCS 7.

InBev contract is the first success story for Simatic PCS 7 and Simatic Batch in the Brazilian brewery business.

Find out more:
www.siemens.com/beverages
E-mail: fernando.oliveira@siemens.com
Added-value of specification management recognized by Unilever

In recognition of the strategic breakthrough achieved in terms of data accessibility and transparency, Unilever has presented its internal 2004 IT Award to its ambitious product specification management project, relying on Simatic IT Interspec technology. Simatic IT Interspec harmonizes Unilever’s material and product specifications, providing an enterprise-wide accessible single point of reference, enabling important cost savings, reduced time to market, and a faster global innovation rollout.

Unilever responds to everyday consumer needs with one of the most comprehensive brand portfolios. This wide gamut of products generated a massive quantity of specifications, increasingly demanding an efficient and comprehensive management approach.

Initiated in 1997, the Interspec project was linked into Unilever’s five year strategic plan that proposed a series of initiatives to narrow the company’s focus onto fewer strong brands and accelerate top-line growth, fueled by savings from organizational streamlining and simplification.

Simatic IT Interspec provided the ideal solution to ameliorate the access and transparency in one of Unilever’s most important intellectual property areas: material and product specifications. Simatic IT Interspec is making important contributions to Unilever’s strategic goal to reduce the total number of brands from 1200 to 400 and, as such, to fuel top line growth.

Find out more:
www.siemens.com/glass
e-mail: glass.team@siemens.com
Visit us: hall 15, booth B10

New challenges – new opportunities: glasstec 2004 in Düsseldorf

From November 9 to 13, the gates to glasstec will open again in Düsseldorf. Many exciting innovations around glass products and applications, new processing machines for flat and hollow glass as well as news from the supplier industry await international visitors. This year’s glasstec offers an additional highlight: the glass technology live special event. For the first time, interior finishing and decorating with glass is the focal theme. A symposium with well-known speakers will complement the special event.

Siemens will present its products, systems, and solutions for glass production and glass processing on the fair. The presentation focuses on integrated automation of the entire production process: With Totally Integrated Automation, the glass manufacturer can integrate production units supplied by OEMs (Original Equipment Manufacturer), EPC-Companies (Equipment Procurement and Construction) or system integrators into one uniform production process solution – from batch house to finished product.

Solutions for power transmission and distribution, IT integration and innovative process instrumentation and drive technology products complete the comprehensive solutions portfolio.

Find out more:
www.siemens.com/simatic-it
e-mail: marketing.simatic-it@siemens.com
In recent years, the market for automation systems and the technologies they are based on has changed considerably. In the field of process automation, this change has primarily affected the proprietary process-control systems of the past, which were tailor-made (with all their components) to meet the requirements of the chemical industry and its demands for long-term availability and stability. Demand for the implementation of standard components in hardware and software has led to the extensive use of PC-based hardware and software by automation technology suppliers. This technology is produced in high quantities, primarily for the office environment and for consumer electronics. The high volume leads to relatively low prices for these systems. The rapid innovation cycles in these markets, however, reduce the life cycle of the individual components – considerably, in some cases. In industrial plants, with their much longer life cycles, this rapid innovation leads to a notable increase in technological complexity and creates considerable additional costs over the plant’s life cycle. Moreover, there is no long-term experience with the stability and safety aspects of the individual components, so problems could potentially arise in those areas as well.

BASF selects Siemens as a global DCS supplier

Life-Cycle Approach

Technological change, progressive innovation, and the metamorphosis of the market for process automation have prompted BASF to reassess its suppliers based on a newly developed and globally applicable user requirement specification. The result of the reevaluation: due to its convincing performance, Siemens has been one of BASF’s global DCS suppliers since August 2004.

Life-Cycle Solution for BASF

Above and beyond normal service contracts, customers such as BASF expect a distributed control system (DCS) supplier to make a statement about the future maximum upgrade costs over a period of 10 to 15 years. To be able to make a reliable and acceptable estimate of these costs over such a long period, the supplier must meet the following conditions:

1) The process control system must be stable and mature.
2) The DCS supplier must invest continuously in further development of the product.
3) The problems created by rapid IT innovation when using open standards should not affect the owner, but must be solved by the provider (mastery of the interface problems).
4) All key components of the DCS (such as OS, AS, bus systems, and I/O modules) must originate from the company’s own development and production.
5) The DCS must be part of an integrated automation platform that includes PLC, DCS, motion control, and MES functions. Such a life-cycle contract increases security of investment because the provider is then obliged to supply DCS spare parts and associated know-how for the life of the contract, and assumes the responsibility for interface problems, especially at the HMI level, where systems are based on PC components. This enables the system to remain state-of-the-art for its whole life cycle, which positively influences the cost-effectiveness and productivity of the entire plant.
In response to the rapid changes in technology and implementation methods, BASF decided to place special emphasis on the consideration of life-cycle costs as a major factor in the total costs of the process control system within the scope of BASF’s corporate strategy and the reassessment of the company’s suppliers in 2004.

**Totally Integrated Automation reduces complexity**
Siemens is the only supplier of automation solutions that offers an integrated automation platform with Totally Integrated Automation (TIA), which includes PLC, DCS, motion control, and MES functions. All the major components have standardized, open interfaces and are developed and produced by Siemens itself. This also means that, ultimately, the release of the components and their compatibility and interoperability is tuned to each other. Users can automate their processes with this extensive, uniform portfolio without having to confront the complexity of integrating various components based on different technologies. TIA allows effective, long-term optimization of production, process, and plant procedures and keeps life-cycle costs under control.

The result of the re-evaluation: Siemens was able to convince BASF with both the new version of Simatic PCS 7 and the potential for reducing the life-cycle costs with an integrated approach. The company was officially nominated as one of BASF’s “Global DCS Suppliers” this past August.

**Clear development**
Dr. Dirk Reinelt, spokesman for the DCS/Instrumentation Procurement Team at BASF, stresses the great progress made by the Simatic PCS 7 process control system and Siemens in recent years: “This progress was a prerequisite for us to be able to choose Siemens – with Simatic PCS 7 – as a global DCS supplier.

“We examined the current version 6.0 of Simatic PCS 7 in the reevaluation of our DCS strategy. The technological progress, system availability, and quality control system of the supplier were evaluated in addition to the system properties. Simatic PCS 7 meets the requirements of the BASF user requirement specification for DCS on all accounts.

“Since life-cycle costs and system availability have a major influence on the operating costs of a process-control system, we also evaluated those aspects. We will continue to examine these life-cycle costs in the future when awarding contracts for process-control systems, in order to achieve greater security of investment.

“A BASF-wide standardization will be established, as a means of cost reduction, with the introduction of a tool kit for Simatic PCS 7. We will specify and develop this tool kit jointly with Siemens, one of our global DCS suppliers.”

**Standardization helps cut costs**
In addition to the complexity of the implemented control system, speed of innovation and local service availability at the customer site are important factors affecting life-cycle costs. These factors can be influenced positively by using standardized solutions. When emphasis is placed on high system stability in the choice of components, and sources of error – for example, in a PC operating system – are eliminated as early as possible during development, the reliability of the entire solution can be considerably increased, and the necessity of using hotfixes or service packs is reduced. Open, future-safe standards and preemptive asset management are other factors that can influence the life-cycle costs of a plant.

Within the scope of the reevaluation of global DCS suppliers at BASF, Siemens presented a life-cycle solution based on these principles. The company is currently working on refining the process and transferring it to other branches and customers.

**Find out more:**
[www.siemens.de/tia](http://www.siemens.de/tia)
E-mail: ernst-dieter.keller@siemens.com

**Find out more:**
[www.siemens.com/tia](http://www.siemens.com/tia)
E-mail: matthias.forkel@siemens.com
Standards are crucial in order to use field devices as efficiently as possible in process automation. Dr. Wilfried Hartmann, level-monitoring technology officer at BASF, underlined the importance of standards in field instrumentation in a recent interview.

Prior to being accepted in the harsh ambient conditions of the chemical industry, a process instrument has to pass a number of different tests – beginning with the manufacturer and continuing to the end customer or certified institutions.

Dr. Wilfried Hartmann explained the development of a standard as it is practiced by many member companies of NAMUR. Devices are chosen by the technical committees of the respective companies and subjected to testing in the laboratory. The tests are conducted in close cooperation with the device manufacturers on the basis of manufacturer specifications, and in accordance with current standards and regulations such as those of the IEC or NAMUR. The results of the field tests are added to these standards to make the required statements about suitability for operation. The results are published in an information exchange between the member companies of NAMUR. Depending on the individual requirements of the various members, the suitable devices tested in this way may be declared as company standards.

The benefits for the user from the process of selection, testing, and standardization include the high quality of the devices, the application possibilities in quality-relevant applications (e.g., SIL), lower susceptibility to repairs (failure frequency and costs), and the cost advantage of purchasing greater quantities of each device type.

Other advantages are faster commissioning and more economic maintenance and repair routines due to in-house knowledge of the device. The stocking of spare parts is also simplified by fixed standards.

Because of these many advantages, BASF insists on standardization. The percentage of standard devices procured by BASF is currently about 90 percent – a clear success.

Siemens has been introduced at BASF as a standard supplier for various equipment types in the field of process instrumentation, and the equipment portfolio in the field device sector is a good basis for extending the cooperation between Siemens and BASF.

As a provider of process instrumentation, Siemens will continue to maintain intensive contacts in the chemical industry, both with users and with NAMUR teams (such as those focusing on filling level and flow). Siemens devices will therefore be oriented to future standards, giving customers both investment security and a reliable and safe production process.

Find out more:
www.siemens.com/processinstrumentation
E-mail: hans-juergen.huber@siemens.com

Always ready to listen
The forum for users of process instruments and analytics will answer your questions about these and other topics.
E-Mail: forumchemical.pia@siemens.com
Dunkerque in France, is the most important steel production site for the Arcelor company. The coal for operating the blast furnaces is delivered by ship and stored temporarily in huge bunkers before finding its way to the furnaces. Each bunker is 30 meters high, with a diameter of 8 meters.

Every bunker must be equipped with a special monitoring technology for the early detection and prevention of uncontrolled ignition of coal dust. This equipment is installed in the upper section of the bunker and continuously measures the carbon monoxide (CO) content in the silo. If CO levels exceed a threshold value, this is a clear sign of a beginning combustion process.

Low-maintenance analysis

Previously, Arcelor, the leading steel producer on site, had relied on the conventional extraction method of analysis. However, this method entails a relatively high level of maintenance work: there is an extremely high concentration of coal dust, especially when the bunkers are filled with fresh coal, which soon clogs the filters of the extraction line and makes measurement impossible. As an alternative, Arcelor has recently started using the LDS 3000 in-situ gas analyzer.

The analyzer sends a laser beam from a transmitter on one side of the bunker to a receiver on the other side. The optics are located in a housing that is explosion-proof according to ATEX II G, D Zone 20. The optics are permanently flushed with nitrogen so that they are effectively protected against dust. The laser light itself is fed in through a fiber-optic cable, and the central unit with the laser generator is in a safe area.

Laser-supported detection of CO content has a number of decisive advantages in comparison with the conventional extraction method. The entire system needs very little maintenance and consumables. One central unit also allows the monitoring of three bunkers, which further reduces costs. Because the laser beam passes through the entire diameter of the bunker, critical CO concentrations are representative for the whole bunker, and not only measured in one spot.

The system is also quick to react to alarms. The coal bunker can be flooded with nitrogen with a response time of less than one second, rendering the bunker atmosphere inert, and preventing a conflagration almost before it has started.

Find out more:
www.siemens.com/processanalytics
E-mail: michel.kolb@siemens.com

Wherever coal is stored, there is always coal dust and, therefore, the danger of ignition and even explosion – a fact that has prompted the company Arcelor to play it safe in the monitoring of its coal bunkers.
Searching for mass

Why do particles have mass? This question still represents one of the unsolved secrets of physics. The Large Hadron Collider (LHC) may perhaps provide the answer. An attempt is being made to prove the existence of the Higgs boson with one of the LHC’s five detectors, the ATLAS – a giant with a length of 45 meters and a height of 22 meters.

The Higgs boson is allegedly responsible for the mass of particles – at least according to the English physicist Peter Higgs, who formulated the theory named after him about 30 years ago. According to this theory, the whole of space is ruled by a so-called Higgs field, which gives particles their mass. Since a corresponding particle is allocated to every interaction in the standard model of particle physics, the effect of the Higgs field is transferred from the so-called Higgs boson to the other particles, depending on the strength of the interaction. The stronger the interaction with the Higgs field, the greater the mass of the elementary particle.

The catch to this theory is that it has not yet been possible to prove the existence of the Higgs boson, because it has not yet been possible to produce sufficiently high energies in accelerators. The LHC, however, is now penetrating the necessary energy ranges – and could soon greatly extend our knowledge of the nature of matter.
The Large Hadron Collider (LHC) is the first representative of a new generation of accelerators where the magnets must be cooled with liquid helium in order to achieve the required force fields. A total of 1,382 cryo-valves, controlled by a special version of the Sipart PS2 positioner, are used to distribute the refrigerated helium over the entire circuit to the individual magnets for the LHC accumulator circuit.

The world’s largest and most powerful particle accelerator is currently being built about 110 meters below the ground in a tunnel stretching more than 27 kilometers at the CERN Research Center on the border between France and Switzerland. The accelerator reaches energy levels that were previously out of range for experimentation. To do so, however, the LHC operates with superconducting magnets that must be cooled with liquid helium to a temperature of approximately 2 Kelvin – that is, -271 degrees Celsius, close to absolute zero.

At such extremely low temperatures, pipes, valves, and fittings must be made of special extremely cold-resistant materials. Never before has a superconducting...
The cryo-valves with Sipart PS2 positioners

The system been built on such a giant scale, and the coolant supply turned out to be one of the greatest challenges of the LHC project.

**Extreme demands on mechanics and electronics**

The flow distribution in the helium circuit is regulated over the entire length of the accumulator circuit by a control system using special cryo-valves, i.e. valves specifically developed for application in low-temperature conditions. These valves must be highly insulated so that they do not ice over when exposed to extreme temperature gradients. They are operated by pneumatic actuators whose position is regulated by electropneumatic positioners from the Sipart PS2 series.

The high radiation load in the immediate vicinity of the accumulator circuit due to the synchrotron radiation from the deflection effects and collisions of the accelerated particles in the vacuum tube prevents the use of highly integrated electronics in this area. The fine structures of the accumulator and microprocessor components would be destroyed by the high-energy radiation quanta. For this reason, a special “split version” of the intelligent Sipart PS2 positioner had to be developed in which the highly integrated electronics of all positioners were placed in special radiation-protected sections of the tunnel (alcoves) at some distance from the accumulator circuit. The largely radiation-resistant components for position measurement and the pneumatic output stages of the positioners in the original housing were mounted as usual on the pneumatic actuators.

To ensure trouble-free functioning of the signal transmission from the alcoves to the field devices, a simulation test was necessary; this test took place under laboratory conditions with cable reels weighing several tons, such as the cables later to be laid in the tunnel. The maximum distance between the processor boards and the field positioners on the circuit is about one kilometer.

The transfer of the positioning commands for the pneumatic output stage and the feedback of the position values is ensured inside the Sipart PS2 housing by a specially developed module that also contains the interference-suppression components for the line-bound remote transmission to the main board. The positioners are connected to the master control system via Profibus PA.

**Detectors like buildings**

Unlike most detectors used in everyday analytics, the detectors of the LHC are made up of several million components and weigh many thousands of tons. The ATLAS detector, for example, at 22 meters, is as high as a five-story office building. Its individual components must be joined with a precision of a hundredth of a millimeter. An optical monitoring device is installed for all important components, in order to detect later misadjustments or shifts. There are ten billion transistors alone in the innermost zone of the detector.

Accuracy and sensitivity play a central role in all the measurements – both in the design of the detector and in the enormous superconducting magnet combination inside the ATLAS detector in which the pulse and polarity of the charged particles created by the collision are determined. As in the rest of the LHC circuit, superconducting magnets are also used here, and the coolant flow is kept precisely at the values prescribed by the control system by 130 split-version Sipart positioners.
Just a small part – but still a contribution

In such a gigantic project as the LHC, most individual products and services play a minor role. But every part of the immense accelerator must work perfectly so that the treasure hunt for the Higgs boson can be successfully completed and a further step taken toward confirming the standard model of particle physics. And the Sipart positioners are set to make their contribution.

The Large Hadron Collider

The Large Hadron Collider (LHC) is scheduled to start operation in 2007 and collide particles at energies of up to 14 tera-electron volts – that is, 14 trillion electron volts. In addition, particle beams consisting, for example, of lead ions can be accelerated to 1,150 tera-electron volts. The LHC replaces the old Large Electron-Positron Collider (LEP), which has been disassembled to make way for the LHC. One electron volt is equivalent to the energy that an electron receives when it is accelerated with a voltage of one volt. A tera-electron volt is one billion times more – yet only comparable to the kinetic energy of a flying mosquito. However, the LHC concentrates this energy in a space that is one billion times smaller than a mosquito.

Force field created by superconducting magnets

In order to be able to keep the particle beam on track throughout the 27-kilometer circuit, the LHC needs extremely strong magnetic fields, which can only be generated today by superconducting magnets. The magnets of the LHC operate at about 2 degrees Kelvin – that is, just two degrees above absolute zero – and are cooled by liquid helium. Altogether, 1,232 dipole magnets and 392 quadrupole magnets are used. The LHC can accelerate two particle beams in opposite directions and therefore actually consists of two accelerator circuits. The magnets for both circuits are installed in a common housing for space and cost reasons.

Not only does the LHC operate with the highest energy ever produced in an accelerator, but it is also operated with the highest particle density. The collisions happen so rapidly – about 800 million times per second – that the particles from one collision are still racing through the detector when the next collision is already taking place. Every collision generates about 200 million measured values that are recorded and evaluated.

Dedicated computer grid

Five different experiments with the appropriate detectors (ATLAS, CMS, ALICE, LHCb, and TOTEM) will analyze the results of the collisions between the particles and create more information than the European telephone network transfers at the moment: about 12 to 14 petabytes of information per year – equivalent to a storage capacity of 20 million CDs. A specially designated internationally networked computer grid has been created to handle these data.

Find out more:
www.siemens.com/processinstrumentation
www.cern.ch
E-mail: achim.heim@siemens.com

Construction work on the 45-meter-long and 22-meter-high ATLAS detector
For applications where sterile conditions have to be maintained, one of the most critical tasks of the HVAC system is to prevent “outside air” from entering. That is why a clean room must be kept in overflow conditions by the HVAC system. In contrast, in areas where active or potentially toxic or pathogenic substances are being handled, the air must not be allowed to escape to other rooms. An underflow must therefore always be maintained by removing more air than the HVAC system supplies.

These flow patterns are extremely important because even the slightest interruption in the supply and extraction of air could be enough to cause errors in the flow and contamination risk. This is in contrast to, for instance, climate-controlled office areas, where maintaining the exact predefined conditions is not nearly as critical.

Janssen Pharmaceutica N.V. and Siemens develop HVAC system based on Simatic

Standardized Control

Controls for heating, ventilation, and air conditioning (HVAC) traditionally mostly consist of dedicated systems that are limited to standard functions. In the pharmaceutical sector, however, HVAC is a critical factor affecting the reliability of analysis results, experiments, and production systems. Pharmaceutical manufacturers require precise, critical control over temperature, humidity levels, and air-flow patterns. The flexibility and level of customization required to achieve this cannot be found in traditional HVAC control systems but requires an industry-specific approach such as that developed by Siemens and Janssen using Simatic technology.
A new approach for a new building

Janssen Pharmaceutica N.V. and Siemens have together implemented a set of models for standard function modules so that in the future, Simatic-compatible HVAC applications can be created more rapidly and more reliably. The motivation for this project was a significant investment by Janssen in the expansion of an existing production plant and the construction of two new research facilities housing various laboratories.

The company had already standardized on Simatic controllers for tasks such as the automation of building functions and water purification. Janssen Pharmaceutica N.V. was aware of the absence of a systematic approach for HVAC reports, and made an active decision to break with tradition in terms of HVAC controls. The objective was to get the best of both worlds: working with standard modules as in the case of traditional HVAC controls and making use of the flexibility offered by PLC control.

Standard modules offer a high level of functionality. Controlling the pressure and flow for a particular subunit, or controlling the mixing ratios between fresh and return air, for example, can be encapsulated in one module. A complete standard was developed based on the requirements for the three buildings concerned, taking into account other aspects that did not need to be implemented immediately but could be necessary later, such as additional control options for fresh air supply based on carbon dioxide measurements. The function modules themselves are documented in detail and in a standardized manner so that they can be extended later without affecting the rest of the software.

Models encapsulate functions

Siemens had already created a library with standard components for HVAC applications using Simatic S7 controllers. Thus, it was not necessary to start from scratch at Janssen, because functions such as pump regulators, fans, and Mollier diagrams could immediately be used. The components offered were suitable for compliance with cGxP (any current good practices environment), which is important because the PLC software is used for controlling as well as monitoring the climate. Janssen could therefore concentrate on testing the additional software and customizing the components.

The newly developed HVAC system consists of four layers. The lowest layer is the hardware platform with a Simatic S7 PLC. On top of that is the CFC layer with the graphical programming environment for S7 and the layer with the standard Siemens HVAC function modules. Finally, Siemens and Janssen created a layer of additional models – standard function modules specifically developed for Janssen. An example of these models is the mixture control that determines the ratio between fresh outside air and return air. The mixed air is further acclimatized in the installation and transported to the rooms. This air must comply with specific requirements in terms of pressure, temperature, and humidity. The function module also takes into account the requirement for a minimum percentage of fresh air (oxygen) inflow into the rooms.

Extension for controlling flow patterns

Another extension covers the problem of overflow and underflow. With traditional controls, a switch can be made at a particular point from 100 percent ambient air to 100 percent return air, or vice versa. The movement of the valves, however, may cause a brief negative flow that can disrupt the flow pattern. An additional condition has been provided for in the new function module to spread the switching from one regime to another over a specified period. Thus, any negative effect is gradual and can be compensated for by the flow control of pulse or extraction fans.

Some of the I/Os of the system are centralized and some are installed as distributed systems in the buildings. Profibus DP guarantees communication for the programming and monitoring of the decentralized I/Os. The necessary HMI operating panels are linked via individual DP loops for each PLC. A new element for this project is a built-in module that creates the link between Profibus and the EIB bus, which operates the HVAC system in the office areas – creating even more transparency and additional control options.

First systems already in operation

The first systems were rolled out at the end of last year in the CSU (Clinical Supply Unit) building. Since then, three HVAC control systems have been implemented and tested successfully.
Validated building control technology for Boehringer Ingelheim

Absolute Control

Maintaining the past, introducing the future, and integrating both future and present in a flexible and at the same time uniform concept that meets both the strict requirements of the FDA and the demands of the plant operator for maximum cost-effectiveness...The wish list for the new building control technology for the Biberach/Riss site of the German pharmaceutical company Boehringer Ingelheim was long. Nevertheless, the Siemens solution provider GiA was able to meet all the requirements with an integrated solution based on Simatic technology.

Boehringer Ingelheim researches, develops, produces, and markets drugs. With more than 32,000 employees in about 150 enterprises on all continents, Boehringer Ingelheim is one of the most research-intensive companies in the world today. The company is further expanding its key activities at both its German sites – Ingelheim and Biberach/Riss – and invested more than one billion euros here between 1999 and 2002.

Research and development activities are concentrated at the Biberach site in southern Germany, where one of the world’s largest and most modern cell culture production plants for biopharmaceuticals is also located. Boehringer Ingelheim, the leading complete supplier to this industry, provides the whole process chain, from development to production and licensing to other companies.

A new concept for greater reliability and efficiency

The investments made by Boehringer in Biberach included the modernization of the building control technology. The focus was on optimizing climate control and energy efficiency for a total of 40 buildings on the site, including the research center and a production plant for biopharmaceuticals.

Dr. Dietmar Kohn, who is responsible for building management in Biberach, stresses that the reliability and availability of the system were key aspects of the new building control technology. In addition, the new control technology also had to satisfy the pertinent regulations governing pharmaceutical plants. “The system is designed for high reliability, and includes a fast and effective alarm and information system,” said Kohn. “In addition, the nucleus of the building control technology had to be qualifiable (that is, designed to comply with GMP), reliable, and cost-effective. We also insisted that only standard components be used.”

The automation concept was implemented in close cooperation with the Association for Industrial Automation (GiA) in Leverkusen. GiA already had a wealth of experience in the pharmaceutical indu-
try, and had been responsible for the introduction of similar solutions for Bayer and Akzo Nobel Intervet.

At the Boehringer Ingelheim plant in Biberach, room temperature, humidity, fresh air and exhaust air, process ventilation, heat recovery, process cooling, hot water, waste water, and drinking water in all buildings were to be controlled by one system and joined in an overall energy optimization concept. In the new biopharmaceuticals plant alone, 600,000 cubic meters of air must be conditioned every hour. “In view of such a large volume of parameters and measuring points, optimum cost-effective operation of the plant could only be enabled by introducing a control system covering all buildings,” explains Ralf Naseband, GiA managing director and project manager for this project.

A client/server network with 50,000 measuring points is used for central operation and monitoring of the existing heating, air-conditioning and ventilation systems of all buildings at the Biberach plant. For this system, GiA developed a concept based on Simatic IT that enables central access and a secure data storage of the relevant measuring points, and that meets the high system availability requirements. A common algorithm that enables rapid readout of the controllers was developed for the gradual transition from Simatic S5 to S7. According to Ralf Naseband, “This enabled the new system to be integrated smoothly with the existing hardware. At the same time, it was possible to easily integrate the new buildings equipped with S7 controllers into the system.”

### Safe system architecture throughout the plant

The heart of the plantwide building control technology is a redundant central server that records process data and logs all the operating processes. The server also provides graphic representation of the individual buildings, and can access all the actual values of the air-conditioning and heating systems through the network.

The user interface developed by GiA ensures that the application has the look and feel of a native Windows application. The front end of the building control technology therefore offers the advantages of a user interface with clearly understandable instructions, buttons, and selection menus. The application also provides a transparent overview of the whole system, with versatile inspection and comparison capabilities. All in all, it is an important step beyond previous individual solutions. A graduated administration of the system with different user groups ensures that only authorized access to the system is possible.

### Qualification and validation for the world market

The entire system has been IQ/FQ qualified in order to meet the high demands of the international pharmaceutical industry. Since the U.S. market is especially important for sales in the biopharmaceutical industry, the control technology has also been validated according to the regulations of the American Food and Drug Administration. The new control technology architecture is now in operation throughout the entire site in Biberach, and is generating a good working atmosphere.

---

**GiA mbH**

*Gesellschaft für Industrielle Automatisierung*

- **Process automation**, IT services, qualification/validation

**Founded:** 1989

**Address:**

GiA mbH
Gesellschaft für Industrielle Automatisierung
Dönhoffstr. 39
D-51373 Leverkusen
Germany

**Contact:**

Ralf Naseband
Phone: +49(0) 214/83067-0
Fax: +49(0) 214/83067-97
www.gia.de
E-mail: info@gia.de

---

Find out more:

- [www.siemens.com/pharmaceuticals](http://www.siemens.com/pharmaceuticals)
- [www.siemens.com/solution-provider](http://www.siemens.com/solution-provider)
- E-mail: bruno.glutsch@siemens.com
Siemens optimizes printing plate production at Kodak

Faster to Print

It all began with an intensive process analysis – and ended with a more than 10 percent increase in plant productivity. The Siemens project team that developed and implemented a continuous improvement project for Kodak Polychrome Graphics in Leeds left an impressive calling card for Siemens Customized Solutions. And because of this project, Siemens won a follow-up order for a new Kodak plant in China.

Despite the magazine crisis and the price slump in the printing industry, there is a segment of the market that is exhibiting 10 percent annual growth worldwide: the computer-to-plate process, where printing templates for magazines are transferred directly to a roll-offset plate coated with photosensitive substances. This method allows printing plates to be made much more rapidly – and enables editors to add last-minute reports before printing.

One of the leading manufacturers of such computer-to-plate printing plates is U.S.-based Kodak Polychrome Graphics, which develops and produces innovative solutions – both digital and conventional – for the printing industry.

Prize-winning innovation

The production facility in Leeds is one of the most progressive in the entire corporate group and is always supplying valuable ideas for new developments. For instance, the Elektra Excel thermo plate – one of the most innovative plates for the thermal computer-to-plate process – was developed in Leeds. Kodak Polychrome Graphics Leeds even received an innovation award from the Queen of England for this plate in 2003.

The printing plates are made in a multi-stage process. A high-quality aluminum strip is first roughened electrolytically and coated with photosensitive chemicals. The coated aluminum strip is then dried and cut to size. The exhaust gases produced during production are cleaned in the downstream utilities.

Continuous improvement

Siemens conducted a process analysis for the production facility in Leeds to identify and exploit hidden rationalization potential. This led to a continuous improvement project in which Siemens was able to improve the plant availability considerably so that productivity rose by more than 10 percent.

The project executives at Kodak Polychrome Graphics were so impressed by this excellent result that they immediately placed another order with Siemens: Siemens created a new basic design package, including an investment cost estimate for a new production plant in Tianjin in China. This project has been successfully completed, and Siemens is now working on a bid for the automation and electrical installations for the plant in Tianjin.

Find out more:

www.siemens.com/chemicals
E-mail: geiss@siemens.com
E-mail: steffen.smischek@siemens.com
Simatic controls isolators for pharmaceutics production

A Pocket-sized Pharmaceutics Factory

The fully air-conditioned isolators from M+W Zander Products GmbH are not only of interest as stand-alone solutions for individual tasks in pharmaceutics production; they can also be combined in compact, reliably isolated production and test systems. A Simatic S7-300 controller ensures reliable control of ambient conditions.

Isolators have been among the most interesting and innovative technologies for many years and are being deployed increasingly in the production of pharmaceutics and drugs. Their use has advantages in the compartmentalization of sensitive processes such as ensuring sterility, avoiding contamination, or providing personal protection. Closed-process plants can be set up with isolators that make clean-room zoning much easier. Highly active substances that create a strong effect in the organism in even the smallest of quantities can then be produced and processed under absolutely controlled conditions.

M+W Zander develops and produces standard and process-optimized isolators for the international pharmaceutical industry. Recently, one of these process-optimized plants with two isolators was produced and commissioned for a large pharmaceutical company. Because highly active and toxic substances will be produced in this plant, the company insisted on the strictest requirements regarding the sterility of the conditions, the impenetrability of the containment system, and the operating reliability of the entire plant.

The whole system had to satisfy European and U.S. health regulation standards for the manufacture of pharmaceutical products, and was planned according to the appropriate requirement profiles. Special emphasis was placed on the measured value recording, which had to be designed in accordance with 21 CFR Part 11.

The first isolator was equipped with a process plant for manufacturing active ingredients, and the second isolator was equipped with the necessary analyzing equipment to examine and test the relevant parameters with regard to quality assurance. Here, regulation of the continuous ambient temperature of 4 degrees Celsius that was necessary in the analysis section took on special significance.

Regulations regarding product and personal protection also had to be observed during transport between the isolators. Transport therefore takes place using special transport containers and appropriately secured and monitored gates.

The implemented controller also had to perform an automatic leak test, and monitor the process values that must be maintained under all circumstances within the whole plant. And because the production process extends over a period of several months, long-term stability and availability were additional important criteria in the selection of the components used.

Reliable with Simatic

The nucleus of the automation and isolators is in each case a Simatic S7-300 with CPU314 and the corresponding I/O modules. The controller has been integrated together with all the assemblies necessary for operation in the technical section on top of the isolator. In addition to the basic functions for operating and monitoring the isolator, all the relevant process values are recorded and monitored. An OP170 graphic operator panel with a clear text display is used for operation. The values are entered and changed on the touchscreen.

Frank Lehmann, product manager at M+W Zander, explains the choice of Simatic as a PLC platform for isolators: “We rely on Siemens for robust and mature technology to meet the high requirements of pharmaceutical plants. The worldwide acceptance of Simatic by our customers was also instrumental in the decision.”
The networking of intelligent field devices from different manufacturers via an open communication interface offers users great advantages. Process and plant data and status information are available to the control system at all times, and the process instrumentation devices can also be managed, parameterized, commissioned, and serviced via fieldbus. The prerequisite for this approach is an open field device management system that supports the appropriate management, service, and engineering functions.

Open engineering is key

In the past, each individual device usually had its own engineering tool with which the device parameters could be adapted and modified – in other words, as many tools could exist as there were field device types.

To simplify this increasingly complex situation, the first solutions offering open, manufacturer-neutral device management tools were introduced a few years ago. The user can now choose between two methods: the established description data–based method and the new driver component–based method.

Driver component–based concept

The driver component–based solution was published by the PNO as a directive under the name Field Device Tool (FDT). The parameterization tool is based on an ActiveX program supplied by the manufacturer as a driver for the respective device. This Device Type Manager (DTM) is installed in a master frame application. The concept is similar to that of printer drivers in a Windows environment. The control system supplier responsible for the integration of the various driver programs provides the frame application with an FDT interface in the engineering system.

The number of driver programs to be installed increases with the number of field device types in the system. Manufacturers can use the DTM Style Guide for orientation to ensure that the HMI of the various driver programs is as uniform as possible for the various process instruments. At the moment, there is no standard apart from the PNO directive that defines the content and form of the DTM interface.

With the DTM approach, the revision of a process instrument usually also involves the revision of the driver program and its reinstallation or update in the control system. On average, one change is made per device per year, so the driver programs must be modified and installed that often as well. In addition, cross influences or compatibility problems between different driver programs or with the control system software in which the DTM drivers are integrated cannot always be completely ruled out.

Comparing open device-management concepts

Finding the Right Solution

There are two basic solutions for manufacturer-independent integration of field devices in asset management and control systems: driver-based concepts such as field device tool / device type manager (FDT/DTM) technology, which represents a relatively new method, or description data–based solutions such as Electronic Device Description (EDD), which has been established on the market for quite some time. Either technology will succeed only if it has economic advantages. Siemens shares the opinion of the Profibus User Organization (PNO). According to PNO guidelines, DTM technology should be used in complex distributed devices. The description data–based variant is the more robust and lower-cost solution for regular process instrumentation devices.
Description data–based concept

In the description data–based solution, the concept of descriptive (product) data sets – the so-called Electronic Device Description (EDD) – is used. This EDD is read and interpreted by a browser, similar to an Internet browser that interprets and displays HTML pages.

The device manufacturer creates the EDD in the internationally standard Electronic Device Description Language (EDDL), which contains the static product data necessary for parameterization of, among other things, the device’s context and the manipulation instructions for these data. If the manufacturer modifies its field device, it supplies the control system’s browser tool with a new EDD. The EDD is independent of the operating system, so no Windows-specific programs need to be created.

The similarly standardized browser tool is provided by the control system manufacturer. For EDD interpretation, Siemens has developed the Simatic PDM process device manager, with which more than a thousand different Profibus and Hart field device types can be managed. Since the appropriate device descriptions for all Hart field devices are available, the IEC-compliant Simatic PDM can provide immediate access to all the 14 million Hart and Profibus devices installed over the last 12 years.

Advantages in industrial applications

The considerable maintenance effort required under some circumstances for FDT/DTM technology must be taken into account in the assessment of both solutions. For this reason, FDT/DTM technology is recommended for parameterization only in complex devices in which other available and tested technologies are insufficient. For less complex process instrumentation, the description data-based concept is a more robust and reliable solution that has proven itself in a widely installed device base. EDD is the technically optimum and best-proven solution for instruments in the process industry.

Find out more:
www.siemens.com/processinstrumentation
E-mail: hartmut.flamig@siemens.com
Siemens implements first Braumat system in China for Tsingtao

Teamwork Guarantees Success

The automation of production processes in a brewery is a job for specialists. With Braumat, a process control system developed for breweries based on the Simatic technology already proven in many other industries and applications, Siemens was able to demonstrate its extensive experience in this field – winning a contract with one of the largest beer breweries in the world and installing the first system of this kind in China.

Tsingtao, by far the oldest brewery in China, is an institution that has become firmly anchored in people’s minds over more than 100 years. The history of the company founded by German merchant Heinrich Siefert in 1903 began with brewery technology supplied by the former machine manufacturer Germania in Chemnitz. Tsingtao has since become well known internationally and is fast becoming one of the ten largest breweries in the world. Today the Tsingtao Brewery Company is represented by more than 40 subsidiaries in more than 70 countries.

Tsingtao’s relations with Siemens are almost as old as the brewery itself. The partnership recently achieved another success: the conversion of the process automation of the brewery house in the Tsingtao Works 2 to the latest version of the Braumat Classic process control system. For Siemens, the Tsingtao project was significant not only as a continuation of the company’s relations with the traditional Chinese brewery; it was also the first time the new Braumat system had been installed in China.

Integrated and transparent system

The brewery’s new process control system consists of a Simatic S7 controller and seven Simatic ET 200M distributed systems connected to the controller via Profibus DP. Two redundant servers collect and manage the information from the system and send it to the brewery’s operator stations and the MES and ERP systems. The system is also already configured to enable easy integration of the tank farm and the filter cellar with the existing Braumat system. Other production sectors, such as the utilities and filling areas, can also be integrated with the control system if required.

All the operating functions at Tsingtao now take place within Braumat. The previous mimic panel has been replaced by a graphical user interface that runs on conventional PCs and offers extensive user support through numerous reports, diagrams, and trend analyses. In addition, the system automatically indicates any deviations from the set points. It makes the
entire production process more transparent and allows immediate, specific response to problems and changes in requirements. The integrated recipe functions of Braumat 5.3 offer Tsingtao flexible job management and support fast, easy conversion to different recipes and new product variants. Tsingtao now has a proven system at its disposal that is distinguished by a high degree of integration and a redundant system design.

Success as a team

Critical to the success of the project was unrestricted knowledge transfer between Siemens, the Chinese system partner SIAS in Shanghai, and Tsingtao. One of the special challenges of this project was the limited time available for converting the plants to Braumat. Together, the brewing industry specialists at Siemens, the local project team, and the people responsible at Tsingtao were able to overcome all the difficulties. The excellent team performance also greatly impressed Zhaoping Wang, works manager at Tsingtao, as he confirmed in an official letter to Siemens: “In the four months between the beginning of the project and final completion, the project team has performed all its tasks – from the system design to the on-site test – exactly on schedule. The excellent team spirit and the great commitment were a decisive factor in the trouble-free completion of the project.”

In Zhaoping Wang’s opinion, the intercontinental and intercultural collaboration proved a total success. “Braumat 5.3 has had immediate positive effects on our production,” he said. “This system upgrade has not only improved the control and processes of our brewery, but has also brought new knowledge in terms of project management, installation, and system tests. We were very impressed by the close cooperation and look forward to continuing the partnership.”

More projects to follow

Tsingtao is very pleased with the new process control system. Since the scheduled commissioning in March 2004, Braumat has met all the company’s requirements for the production process and the associated quality assurance. Modernization of the automation solution in the tank farm and the filter cellar is already planned, and the other plant sections are to be integrated gradually with Braumat. After the successful completion of this significant first step, nothing stands in the way of further cooperation between Tsingtao and Siemens.

Find out more:
www.siemens.com/beverages
E-mail: konrad.thomann@siemens.com
Siemens implements integrated automation solution for Bayer Thailand

Think Global – Act Local

Global companies are increasingly relying on standardized processes and systems in order to exploit rationalization potential for spare parts, training, and service across all their locations. Bayer is no exception. The company-wide specifications were recently implemented with the Simatic PCS 7 process control system in the modernization of a small batch line in Thailand.

Bayer operates a styrene production facility in Map Ta Phut in Thailand that supplies base materials for a number of polymers and plastics. The company wished to equip a small-lot compounding line that produces colored thermoplastics resin with an automation system that was state of the art and also fit Bayer’s worldwide technology standards.

The aim was an integrated solution for the automation of the entire production process – a task that was completed through close cooperation between Bayer and Siemens directly on-site in Thailand. The Simatic PCS 7 process control system provided the basis.

Innovative technology

Simatic PCS 7 and the Bayer toolkit control all processes in the plant. The compounding line is one of the first in the world to use the latest version 6.0 of PCS 7. Simocode and Simoreg (DC Drives), linked to the control system by Profibus, were used as well. The feeders are also integrated with the control system via a gateway.

The front end is a graphical user interface that is now being used in all Bayer plants throughout the world. It is characterized by a flowchart that displays the entire production process so that the operating personnel have a complete overview of the current production steps at all times. New recipes can be created using a PC in the lab sector and then simply up- or downloaded to the control system in the form of Excel tables. After completion of a batch, all the production-related data are returned for documentation, and can also be displayed as an Excel table.

Concept based on standards

The automation concept was implemented jointly with local partners and uses standard routines developed by Bayer and Siemens Thailand. The application is a typical example of a company-wide strategy encountered today in more and more globally active companies: exploiting rationalization potential in production through the standardization of processes and systems. With the company’s unique combination of a local presence and global know-how, Siemens is able to optimally support this strategy.

Find out more:
www.siemens.com/chemicals
E-mail: WiboonT@siemens.com
Fifth anniversary of the Munich Airport hydrogen project

Clean Energy for the Future

Whether in a 7-series BMW with hydrogen propulsion, a hydrogen-driven forklift, or a bus that draws its energy from fuel cells, hydrogen is conquering more and more areas of application as a clean, practically CO₂-neutral energy source. The increasingly widespread application of hydrogen is due in part to the hydrogen project at Munich Airport.

Munich Airport is considered a technology pioneer in Germany. The airport continually attempts to improve efficiency by using new technologies and concepts. One high-tech application at Munich Airport is the hydrogen project, which includes the first public hydrogen fuel station in the world. This project is extremely important in preparing the way for hydrogen technology, as the Bavarian minister Dr. Otto Wiesheu stressed during the celebrations commemorating the project’s five-year existence.

Twelve leading technology companies in Bavaria – including the process and gas specialist Linde, BMW, and Siemens as automation supplier – are collaborating on this project to enable widespread commercial use of hydrogen as an energy source.

New directions in pilot applications

The project is being financed in equal parts by the Bavarian Ministry of Economy, Infrastructure, Traffic, and Technology, and the companies involved. The project team presented a number of new technologies on the occasion of the five-year anniversary, including a new extremely compact steam cracker from Linde that can be used for distributed hydrogen recovery from natural gas, and a new filling system with which the hydrogen-driven airport buses can be refueled at 350 bar. Siemens supplied the automation technology for these new system components, as it has already done for existing systems such as a fully automatic filling arm and an electrolyzer for hydrogen recovery by electrolysis.

Another highlight is a bus that is supplied with energy by a new proton-exchange-membrane fuel cell. The new bus, which was developed and built by MAN in cooperation with Ballard Power Systems, combines the fuel cell with an efficient energy store and a modern electric drive system. Siemens supplied the electric drive system for this bus with two three-phase current asynchronous 1PV5135-type motors.

Ideas become reality

The general consensus of those involved is that the results after five years are very promising. What was long considered a dream – namely, utilizing hydrogen as a low-pollution, environmentally friendly, and inexhaustible source of energy for industry, traffic, and the private sector – could become a reality within the next 10 years. The hydrogen project at Munich Airport will certainly make its own contribution toward this goal.

Find out more:
E-mail: robert.oppelt@siemens.com
Sitrans Probe increases level monitoring options

Double Score

With experience of over a million wide-ranging field applications and nineteen patents, Sitrans Probe level transmitters provide greater functionality and superior performance in two level technologies. Using either ultrasonic or radar detection, Sitrans Probe is suited for a broad spectrum of applications.

Sitrans Probe is the award-winning Siemens Compact device “The Probe” taken to a higher level. It offers a longer measurement range and an improved signal-to-noise ratio that enhances echo-processing features such as Sonic Intelligence and Auto False-Echo Suppression for greater accuracy and reliability.

Sitrans Probe LR is a 2-wire, loop powered, 5.8 Gigahertz (6.3 Gigahertz in North America) radar transmitter, ideal for level and volume monitoring in applications with chemical vapors, temperature gradients, vacuum or high pressure. The measurement range is 0.3 to 20 meters (1–65 ft.). It has a patented Uni-Construction polypropylene rod antenna that offers excellent chemical resistance and is hermetically sealed. The Uni-Construction antenna includes an internal, integrated shield that eliminates vessel nozzle interference.

Two versions for greater versatility

Sitrans Probe LU is a 2-wire, loop-powered ultrasonic transmitter ideal for continuous level, volume, and flow monitoring in food storage applications, chemical storage vessels and open channels. The measurement range is up to 12 meters (40 ft.) on liquids and slurries. New echo-processing features include a Low Noise transmitter and patented Noise Shield. The transducer is available as ETFE or PVDF to suit varying chemical and temperature conditions.

Innovative design and easy set-up

Sitrans Probe LU and Sitrans Probe LR combine innovative transducer and antenna designs, as well as remote communication using Simatic PDM and HART. Set-up is simple without opening the lid, even in hazardous areas, using the patented intrinsically safe infrared handheld programming device.

Find out more:
www.siemens.com/processinstrumentation
E-mail: rob.niezen@siemens.com
Do you want to know more about the systems and solutions for the process industry from Siemens Automation and Drives? Simply visit our information portal on the Internet:

www.siemens.com/processautomation

www.siemens.com/processnews

Here you can download the current issue and past issues of Process News in PDF format, or search directly for articles about specific topics, technologies or systems in the Reference Center.

On the occasion of the K and Glasstec industry fairs this fall, Siemens is presenting two special magazine editions: “spectrum plastics” for the plastics industry and “GlassFocus” for glass production and glass processing. The two magazines provide information on products, solutions and services dedicated to the specific industry.

Both specials are available in English and German. Interested? Just order your free issue from October (spectrum plastics) or November (GlassFocus) via e-mail:

glass.team@siemens.com

The new manual dealing with guidelines for implementing automation projects in a GMP environment is available now. It describes the required software and procedures for configuring Simatic PCS 7 in accordance with GAMP 4 and 21 CFR Part 11. It lists the prerequisites for configuring control systems as well as the requirements for control systems in a GMP environment. Moreover, it contains guidelines for configuration in a GMP environment with standard Simatic PCS 7 software and additional hardware and software components.

You can order the manual in German and English through your local Siemens sales person. More information on the Internet:

www.siemens.com/pharmaceuticals
Synchronize your production
SIMATIC IT – standard based and modular MES by Siemens

SIMATIC® IT – the Manufacturing Execution System (MES) by Siemens – helps you to continuously coordinate and optimize all manufacturing relevant applications and resources. The result is a sustainable increase in quality, efficiency and flexibility leading to higher profitability and competitiveness. With its unique and fully ISA-95 compliant modeling approach SIMATIC IT dramatically reduces the solution’s TCO (Total Cost of Ownership) by offering an unrivalled degree of transparency, flexibility, scalability and compatibility.

www.siemens.com/simatic-it