



## No limits!

Engineering with your choice of automation system - with no limits in terms of depth, scope or structuring

### Saving several weeks of work with the plant design - who wouldn't want that?

The question is, how?! It is well-known that AUCOTEC and Engineering Base continuously pave the way to facilitate work and save time in electrical hardware design. In this edition, we illustrate the extraordinary integration ability of the platform using the example of automation engineering. Whether for PCS7 from Siemens, ABB 800xA or Emerson's Ovation, EB also plays an important role today in the engineering of control system software.

Due to its openness, EB is able to adapt to any automation structure, any required scope and any predefined structural depth of the most diverse control systems and thus save weeks of work. The connection is so close that the system boundaries disappear, as Martin Knabenhans, Product Manager for 800xA at ABB Switzerland, con-

firms. Thus operators can navigate between the two systems at all times and open the electrical diagram for each function, for example, by simply clicking from 800xA. The device engineering is initially defined with EB based on the already defined tags and loads. Using the infrastructure of the plant developed in parallel, the cabling as well as the signal flow are designed up to the control system. "The two systems complement each other ideally and allow much more efficient project management with far greater consistency and thus higher quality of the data", says Knabenhans. "That doesn't work with every ECAE tool."

### Unique freedom

In actual fact, EB is the only system worldwide that offers the freedom to integrate the engineering of all standard process control system software. When connecting PCS7, for example, the values which were entered

in different phases in EB are written automatically in software modules of PCS7. On the basis of modules thus altered, EB automatically creates in turn the program codes that are then imported using the IE Wizard of PCS7. EB also supports the transfer of information via the AdvES interface. Even pure logic functions can be provided with software modules. Since the parameterization and group assignment are carried out in EB, the connections in PCS7 are updated automatically. Thus a large plant operator substituted four weeks of planned work in a pilot project with half a day's work for the data input in EB.

EB can also link closely with the Ovation control system from Emerson. This has led Emerson to now sell the AUCOTEC system globally as the "Ovation Documentation Builder". (Related interview on page 3)

### Harmony helps operators

EB is not only able to link closely with the various control systems, but these various links can easily coexist next to each other in the same database. The platform is so flexible that the control system can vary not only from project to project, but different automation structures can even harmonise within a project.

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## Learning-by-doing

Dear readers,

"Learning-by-doing" is one of the most well-known concepts. This is not only true for people, but also for companies, especially in the high-tech sector where growth and future viability largely depend on product innovation and greater process efficiency.

In order to meet these challenges, we have recently in particular developed highly successful solutions together with our customers. These were mainly highly complex projects in plant engineering and in the process industry, where we not only considered the engineering process, but also integrated

other business processes. AUCOTEC solutions are used here continuously from the tendering stage via engineering to maintenance tasks. With our focus on growing technological challenges, we have been awarded major projects even in the difficult economic environment of the energy industry.

In the first half of this fiscal year, AUCOTEC in Germany as well as in Austria and China have reported their highest ever turnover in the company's history. Our customers' faith in us has led during this period to a 30% boost in the level of orders and double-digit growth in turnover once again. This success

also continues to allow major investments in the development of our technology leadership.

Thus we are looking forward to your challenges and future tasks for greater efficiency and faster innovation. We can continue to grow together!

Yours faithfully,  
**Markus Bochynek**  
Executive Officer



We are looking forward to meeting you!

**sps ipc drives**



Nuremberg,  
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# No limits!

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Very few operators come into contact with only one control system over the course of a plant's history. There are usually two or three control systems, especially for older plants. "The fact that, in such cases, the entire plant can be kept in a project with full logic tracking assists operators hugely and provides an impressive demonstration of the efficiency and flexibility of the system", says Martin Imbusch, Product Manager at AUCOTEC.

## Automating automation

The ability to generate program code via certain parameters of objects is a requirement that plant engineers reiterate repeatedly. With the relevant engineering data, the quantities of the required inputs and outputs (I/O lists) can be determined in a fairly straightforward manner and can then be transferred in a neutral format to the control system. It

is the "supreme discipline", however, if the source code and I/O quantity can be generated in the workflow directly from the engineering system, while the hardware structure can then be defined in the control system based on this data and the information can be returned from there to the engineering tool. In this manner, the cabinets and card supply can sometimes be generated completely automatically, depending on the degree of standardisation of information. Thus from cabinet design up to wiring, savings can be made in terms of the following: time, errors and coordination effort. This workflow has already been repeatedly realised with EB.

## Increased added value for the EPCs

In the development phase, data has to be exchanged constantly between automation engineering and the engineer-

ing tool. "Manual" control may still be effective in smaller projects where only a few persons are involved, but there are always plenty of inefficiencies: time spent on consultations and feedback, transmission errors or overlooked changes.

Engineering Base eliminates this extra work because it consistently maps all development processes - also those of the control systems - at all times and provides highly transparent change management. Thus all work is performed much faster and nothing is lost in the process.

EPC (Engineering, Procurement and Construction) providers who deal with many sub-contractors benefit in particular from EB due to the consistency of data on the one hand. While, on the other hand, the ability to freely choose the control system also gives them security for the future!

## Accessible for all

### Bilfinger's integrated data management with Engineering Base (EB) presented at the Digital Plant Conference

At the Digital Plant Conference (Digital Plant-Kongress) of Vogel Verlag in Würzburg, Thomas Wiest, Manager of the Augsburg branch of Bilfinger GreyLogix, and AUCOTEC's Product Manager Martin Imbusch gave a joint presentation on how cooperative engineering optimises interdisciplinary processes. They used practical examples to illustrate EB's extraordinary ability in seamlessly connecting process and electrical engineering. In addition to the central consoli-

dation of all supplier documents in EB, it is very important for the globally operating automation specialists to have the freedom to respond easily to customers' wishes and requirements in terms of process control systems since EB is equally accessible for all customers. (For more information on this topic, see page 1/2, and for more information on Bilfinger, see page 4)



Photo: from left to right: Martin Imbusch, AUCOTEC, Thomas Wiest, Bilfinger GL

## AUCOTEC as software and technology partner within "Siemens PLM Software Solution Partner Program" with immediate effect



Photo: Siemens PLM Software

AUCOTEC has recently started to use Siemens PLM Software technology for an improved connection of its "Engineering Base" (EB) system to the Teamcenter® portfolio. Siemens PLM Software is one of the leading providers of PLM software and services worldwide.

With the solution resulting from the partnership with the company, all information about a plant, machine or mobile system can be securely managed throughout its entire life cycle. Thus the management and

forwarding of released engineering documents is possible with access control and revision management for rapid availability of all current project data from EB. You can also easily create and update order or production lists to provide correct data at all times to all departments involved. The new solution automatically synchronises the catalogue information with the article master data. This prevents multiple entries and unnecessary errors. In addition, each workflow can be customised.

"Siemens PLM Software is delighted with the cooperation with Aucotec. Teamcenter benefits from a successful partner programme. This agreement is an important step in the development of an integrated solution, which means real added value for our mutual customers", says Eric Sterling,

Senior Vice President of Lifecycle Collaboration Software at Siemens PLM Software.

According to Executive Officer of Aucotec Markus Bochynek: "This partnership allows us to offer our customers one of the best open CAE solutions currently available on the market. Customers want technology with an open data model that will also support them in the future. We are very happy to cooperate with Siemens because we can thus provide them with the leading industrial PLM technology."

## Tracking for an overview

### Versioning and revisioning for collaborative engineering

At SPS IPC Drives in Nuremberg, Aucotec will be introducing for the first time the new versioning and revisioning concept of their collaborative software platform Engineering Base (EB), which is a focus of the latest version 6.5.0. Thus changes can be made in the planning process and later in operation, which can be tracked in a highly transparent and time-saving manner by all those involved in the project. The central data storage in EB thus enables unique consistency for interdisciplinary work performed by process, measurement and control engineers, automation engineers, hydraulic/pneumatic experts, electrical engineers and external suppliers.

## Advanced data tracking

The new advanced data tracking is not only of benefit to the company in an interdisciplinary manner, but also to EPCs who have to deal with many different suppliers in plant construction. EB generates a list by setting "tracking points" on the objects in the tree, which are then to be checked for

changes. By clicking on the points in the list, you can see exactly for each attribute whether something was changed and, if so, when this was done.

When cooperating with suppliers, the tracking points are set in a recipient-specific manner so that a list is associated with a particular supplier. It contains all data relevant to the suppliers for a particular customer project with version number and date of issue. The client can thus track at any time the specific version which each supplier has received and the date of receipt. The supplier only receives the data that is of interest to him. He also does not have to search for changes for a long time. The work involved, sources of error and costs can be significantly reduced on all sides.

## Graphic revision management

Furthermore, the graphic revision is now much clearer with the new automatic detection and marking of relevant

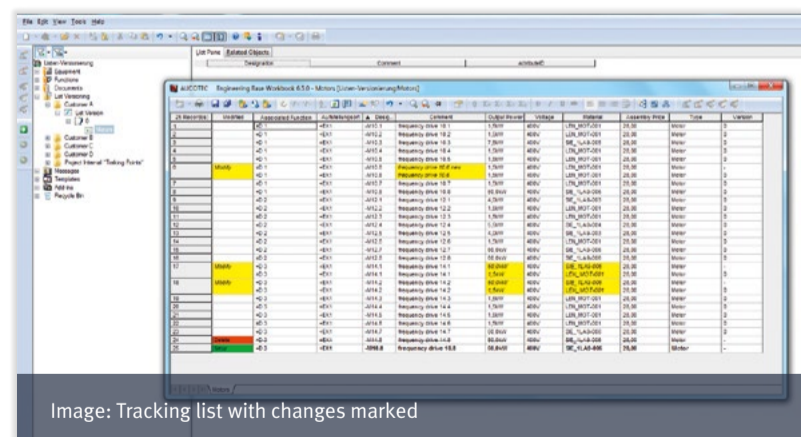


Image: Tracking list with changes marked

changes in selected diagrams. Project managers can thus very quickly detect and forward modified diagrams without time-consuming and erroneous manual recording of modifications. Even without opening the diagram, the system reliably detects relevant changes simply from the data of the stored objects. To prevent EB from creating unnecessary revisions of a diagram, for example, switching languages and the frequent simple moving of symbols in the diagram are not considered relevant.

# The next level

## Configuring with exceptionally clear variant handling

**Configuring and generating belong in mechanical and plant engineering as a fish belongs in water.** However, designers are faced today with simply insurmountable mountains of variants and options due to the rapidly growing complexity. Instead of using quality-tested modules, "copying & pasting" from previous projects is still widespread. The lack of standardisation, configurability and quality control of such "old" modules means that time-consuming adjustments are usually required after copying. Since the corrections are often qualitatively inadequate, commissioning is delayed. Thus there is great potential for savings in configuring "correctly"!

### Functions as modules

AUCOTEC already offers several very useful tools here. Programmers are now going a major step further. They are working relentlessly on a "Project Builder", which will take advantage of the very convenient functional engineering with Engineering Base (EB) ([Info Paper 2/13](#)) to significantly accelerate the configuration of machinery and plants. Experience has shown that it becomes increasingly difficult to retain an overview of modules without a functional context are maintained.

EB's mechatronic modules will not be individual motors or sensors, but will consist of complete functions such as grip-

ping or heating. Thus the configuration will be based on a level higher than the sheet level.

### Configuring instead of generating

The documentation of such a function, which can be experienced and ordered, consists of one or more quality-tested templates (typicals). These sheets are handled "as a whole" in their functional context. Such units significantly facilitate an overview and handling because they save you from copying a project consisting of thousands of independent single sheets which cannot be continuously maintained. In addition, unavoidable changes which arise while constructing the plant, even when nearing completion, can be incorporated without having to undo the individual customisations that were already created up to that point.

The traditional manner of working whereby the entire project would be regenerated in the event of subsequent changes - thus requiring the customisation to be done again - or creating everything "manually" as of the change request requires too much time.

In the future "Project Builder", options such as brakes or sensors will be defined separately as circuit components in EB. Numerous variants of sheets with all possible combinations of options for one motor will thus be a thing of the

past. In the event of changes, you swap only the optional circuit component instead of "drowning" in variants and options as in the past.

### Simple dimensioning

An intelligent solution is in progress, even for different dimensions. In many variants, only the item references change and not the representation in the circuit diagram if, for example, terminals or wires are changed for capacity reasons or a different manufacturer is named. The dimension-oriented data in EB is stored in quality-tested modules for this purpose. By choosing a motor dimension, the system automatically assigns the correct item references to the appropriate components.

### Documentation at the press of a button

If all functions which can be ordered are preconfigured in the EB database, the "Project Builder" will provide yet another level of configuration: the documentation of the entire plant or machine at the press of a button! As a result of import, EB simply compiles a list that contains all functions to be used in the customer project, including the selected variants and dimensioning from the predefined typical. It is expected that the configurator will be available from mid-2015.

## "Everything from a single source"

### Interview with Ernst Jäger (50), Marketing Manager Germany at Emerson Process Management (Germany)



Energy is the lifeblood of an industrial plant and usually constitutes the largest percentage of operating costs after the raw materials. The technologies and expertise of Emerson are used in the industry to raise energy efficiency to a new level. Emerson's solutions can be used by industrial sites to effectively manage high energy costs and additional emission restrictions. These solutions enable a reduction in waste, better use of low-cost and waste-derived fuels and improved efficiency based on smarter operational decisions in real time.

#### What challenges does your industry face today, Mr Jäger?

From an international perspective, process automation has continued to grow in recent years and further growth is expected in the coming year. This is certainly positive, but not every industry is participating in this trend. This trend is essentially driven by the "shale gas boom" in North America and by the oil & gas industry. From my perspective, the German energy industry is nowhere near experiencing an upward trend because new concepts and solutions are required due to the German Renewable Energies Act (EEG). Emerson must also meet these challenges.

#### And what challenge does Emerson face in particular?

As a global company, we naturally have to meet the challenges of various industries and geographic regions. However, these may vary greatly in terms of the implementation of new technologies, operating costs and availability of a plant, product quality, safety, demographic factors and

shorter project periods with increased scope of supply and performance at the same time. Emerson is always striving to provide innovative solutions for the benefit of its customers over the entire life cycle of a plant.

#### What motivated Emerson to look for a new engineering system?

Customer and market requirements are always the driving force for Emerson. In this particular case, the requirements of a particular project were the trigger which called for a complete solution for the power plant control and engineering systems. It should be noted that this demand was mainly driven by the European market.

#### Why EB?

Prior to this decision, we also established our own requirements of course and evaluated the most diverse systems. Our top priorities were quick and easy integration into our power plant control system Ovation, manufacturer independence, and of course the functional requirements of the energy industry. EB met all these requirements and a relatively small European team realised this implementation in a very short time. This decision was made at European level in coordination with the head office of the Power and Water Solutions division in Pittsburgh.

#### How much practical experience have you gained in the meantime in your area of responsibility?

We have had only very positive experiences so far in several projects. The successes in Europe led us to globally standardise EB and now sell it as the "Ovation Documentation Builder".

#### How does this work in practice?

It is of course geared to the market and project scope in practice. Unless otherwise requested, we supply all documentation from the cabinet design to on-site planning with EB/Ovation Documentation Builder.

#### How did your employees react to this change?

From my point of view, our employees reacted very positively to this change. A standard is now in place and project management can be organised in a more efficient and standardised manner as a result.

#### What do you think is the most notable change since the introduction of EB?

The degree of integration is the most notable change in my opinion. Whether the automatic generation of cabinet diagrams, reserve space management, version control and synchronisation with the database of the power plant control system Ovation are involved - everything is from a single source.

#### What potential do you see in EB for the future?

There is no easy answer to this question. It depends, on the one hand, on the developments in EB, but also on the market requirements of the various industries on the other hand. I'm sure that we made the right choice with EB and that we'll be able to meet the future requirements of all our customers.

Thank you very much for this interview, Mr Jäger!

## “Icing on the cake” with EB

### State-of-the-art engineering at Europe’s second largest sugar manufacturer

**Nordzucker AG has been manufacturing top quality sugar since 1838 and is now Europe’s second largest sugar manufacturer.** The approximately 3,300 employees of the company, which is based in Braunschweig, Germany, supply the food industry, retailers and consumers from 18 European sites. In addition to sugar, the Group also produces bioethanol and animal feed from sugar beets.

#### Common basis

By 2004, Nordzucker had thoroughly researched its specific engineering requirements on the CAE market. The company opted for AUCOTEC which, with AUCOPLAN, already combined P&IDs and electrical engineering in a common database - one of Nordzucker’s basic requirements. “When

we were offered the option of upgrading to the more advanced Engineering Base (EB), we tested it in a pilot project. The users were very satisfied. They appreciated in particular the more intuitive method of working with EB”, recount Frank Weishäupl and Jürgen Stock of the Industrial Engineering Division at Nordzucker. “Most employees have prior experience anyway with the integrated drawing tool Visio”, Weishäupl adds.

#### Secure data exchange

In addition to the linking of P&I and electrical engineering, Nordzucker attaches major importance to the ability to consistently exchange and reuse multi-site information, shapes and diagrams. EB offers the best conditions for this purpose with its openness, easy handling and convenient

change management. “EB’s database is perfect for a higher level of standardisation”, says Jürgen Stock who also emphasises the practical support provided by AUCOTEC.

“The EB experts moderate our regular forum during which representatives from all sites discuss solutions and optimisation options”, says the Head of Engineering. Individual plants are over 100 years old and their documentation is accordingly diverse. AUCOTEC also assists in the analysis of the quality of the data and its processing. “Almost all of the old diagrams have been migrated in the meantime, and EB was able to adopt even AutoCAD P&IDs with a sufficient density of information”, reports Weishäupl.

#### Consistent data flow

Nordzucker also wants to transfer its xls tag lists to the EB database. The desired combination of process engineering and electrical engineering will soon become a reality. “EB supports the flow of data from P&I via the tags to detail engineering and even up to our automation systems Siemens PCS 7 and ABB 800xA. We have continuously increased the number of EB licenses in recent years so that everyone involved, from mechanics to control room, and all sites can benefit from it”, explains Frank Weishäupl.

## “Not just faster but better too”

### Bilfinger Greylogix clients reap the EB benefit

**Bilfinger Greylogix is a globally operating specialist for automation solutions in energy and utility plants, and in the chemical, food and beverage industries.** In its capacity as a Siemens Solution Partner, Bilfinger Greylogix is, among other things, one of the biggest PCS 7 system integrators. Since its founding in 2000, the company has developed rapidly to become a medium-sized enterprise with around 600 employees at eight sites in Germany and two abroad. At

the company headquarters in Flensburg, there is even an in-house production line for switchgear. Greylogix has been a part of the Bilfinger engineering and service company since 2013.

In a process engineering plant, a great many suppliers from widely differing sectors and trades are represented, each with their own challenges for engineering documentation. “We wanted a central system that captures documents from all suppliers in a consistent way and combines them within a common structure,” explains Stephan Gaerisch, Sales Director at Bilfinger Greylogix.

#### Seamless: Process and electrical engineering

The decision was thus made in favour of Engineering Base (EB), whose object-oriented mode of operation minimises the time required for the overall project engineering: “For instance, different teams in the areas of instrumentation engineering, software and hardware can work together using the same database, eliminating the duplication of work,” according to Gaerisch. A second important reason for the decision: EB has both the process and electrical engineering components covered. “That is a considerable benefit,” he says, “both technical disciplines can interact seamlessly.”

In addition, Stephan Gaerisch enthuses about the interface that was developed by AUCOTEC for exchange between EB and the Greylogix data management system: “From this system, we can also directly access manufacturers’ documents that were not created within EB, for example, approval documents.” According to Gaerisch, access to documents and content of all disciplines involved is significantly accelerated overall due to EB’s object-oriented, central storage.

#### Changes: Just once for every location

For the same reason, data changes can also be managed via lists without the user having to modify a diagram. “That not only makes us faster, it also boosts the quality of the documentation,” says the plant expert. Changes appear automatically in every other graphical representation of the object, without the transmission errors that can arise so easily during manual processing. “The very first plant engineer and operator to whom we showed EB was highly impressed,” says Stephan Gaerisch. “Now all our customers can profit from the benefits of the solution.”



Photo: Bilfinger Greylogix

And furthermore ... the following companies, among others, have recently opted for AUCOTEC:



Trakcja PRKIL S.A.,  
Warsaw, Poland



Fastron Hungária Kft.,  
Tolna, Hungary



EUROTEC s.r.l. - Divisione COLGED,  
Badia Pozzeveri, Italy



BAIC Motor Corporation Ltd.,  
Chaoyang District, Beijing, China



Haas Food Equipment GmbH,  
Leobendorf, Austria



Momentive Specialty Chemicals GmbH,  
Duisburg, Germany



HowdenCKD Compressors s.r.o.,  
Prague, Czech Republic

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