

# eplanet special

EDITORIAL



Dear Readers,

The stock market recovery is in the news as well as full order books in the industry: the global economy is on the upswing again. What this means for the engineering departments is: speed, while maintaining quality is of utmost importance. What impact does this have for the workflow and engineering processes?

No repetitive tasks, no time-consuming data searches - just efficient engineering throughout the whole engineering process. Our consulting team is keen to help you standardize your workflow - resulting in greater automation and smoother processing. We would like to show you transparent and descriptive Best Practice examples of how EPLAN can add sustainable value to your engineering process - just see for yourself.

Come and see us at the Hanover Fair and other industry events around the globe. We are looking forward to your visit.

Maximilian Brandl  
President of the Management Board



## Solution expertise

### Performance in 3D: EPLAN Engineering Center meets mechanical engineering

If synergies are the glimmer of perfection, then the integration of mechanical design in the EPLAN Engineering Center (EEC) is looking at a radiant future. The new approach is solution expertise in its purest form. Why? Because the methodical procedure is convincing.

#### Mechanical engineering is easy

Integrating mechanical systems in EEC is primarily an answer to the pressure for action in mechanical engineering. Previous approaches such as creating PDM system variants or the design methods in the M-CAD system itself are limited, since a maximum concept is always required. Each variant must exist in advance; all dependencies must already be described. Even a good, standardized CAD department still copies 3D models and then manually implements order-specific changes. Production and manufacturing requirements that were not taken into account are often only discovered during assembly. To prevent this dilemma, new methods and ap-

proaches are needed. The EEC allows users to design variants as minimum concepts that still cover all characteristics.

#### Optimum reuse

An Inventor integration example shows: Production requirements and individual module dependencies can be described and stored as rule sets in modules. The integration not only supports Inventor functions such as iPart, iAssembly and iFeature, it also helps users find existing items and modules in the PDM system. The difficult problem of unproductive repetitive work is solved by linking M-CAD (AutoCAD Inventor, SolidWorks) and automation technology. Summary: targeted reuse - high degree of standardization - improved quality.

#### Intelligent workflow

Designers access intelligent module units over configuration interfaces. They have access to all rule sets covering manufacturing requirements and dependencies. Using subsequent generation mechanisms, order-specific mechanical models can be quickly and easily put together. Manufacturing-relevant requirements are taken into account so that the result is a fully automatic process between design and manufacturing:

- 3D models that always have the same structure
- Early error recognition / error prevention
- Faster order processing thanks

to intelligent modules and faster clarification of customer wishes

- Reduction in the proliferation of CAD variants through targeted reuse.

#### Mechatronic control center

Integration to diverse CAE and PLC programming systems allows rule sets and dependencies to be extended to other disciplines. Changes are made centrally and transferred to the integrated individual disciplines - the result is a continuous mechatronic engineering process. Using this method, the EEC is the mechatronic control center which accompanies the product life cycle from A to Z.

Pure energy: EPLAN Platform 2.0



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efficient engineering.



# Depth included

Stay cool with EPLAN P&ID: Integrative interaction in process automation

**E**PLAN P&ID has eliminated sequential working methods and media changes: EPLAN P&ID is a software solution with depth – it creates absolute consistency among all disciplines. With EPLAN P&ID, you can stay cool even when the project heats up. Because EPLAN P&ID generates comprehensive, consistent project documentation that is essential for a smooth engineering and commissioning process. Not only does the quality of the project as a whole improve, overall, you will be more effective and can make more efficient progress. Engineering is aiming for new goals – always consistent, always interdisciplinary, always fast.

**From the general to the details:** EPLAN P&ID lays the foundation for consistent engineering in process automation: from the initial general representation of a machine or plant process down to the detailed P&ID (plant overview). Basic process data such as loop and consumer data, and instrumentation requirements are stored directly in a common project database. Result: They are available during all the subsequent engineering phases. Naturally, revision management makes sure that changes are tracked so that later they are understood by all users. Actual creation of P&ID can be scaled as desired by graphically placing symbols, using macros, and using database-oriented management of the system data. This is a major factor for smooth migration: It's the way to progress from previously used CAD/table combinations to a truly continuous engineering solution.

**100 percent concentration** P&ID provides a design basis for subsequent departments and design tasks. EPLAN PPE is used in IC as a platform system that builds 1:1 on process engineering data. All the PCT loop information, and thus also the process requirements, are transparent. The IC technician simply adds the appropriate device technology to the PCT loops. The sen-

sors are then selected (if this has not already been done) and the connection or signal processing and acquisition. Changes and synchronized. If, for example, a loop number changes in the

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**EPLAN P&ID stands for consistent engineering – from the initial general representation of a machine or plant process down to the detailed P&ID.**

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automation technology is used to define their electrical inter- additions originating from process engineering are constantly P&ID, the correction is available directly at all points in the pro-

ject. The system also updates the loop and device lists and the loops and loop schematics. The user can concentrate 100% on engineering tasks.

**Integrated fluid power and electrical engineering** With the focus on instrumentation and control technology, fluid power and electrical engineers work, parallel to IC technology, with systems that are also based on the platform – and therefore have the same data basis. EPLAN Fluid and EPLAN Electric P8 are used to add drives and their power supplies to the project, and to generate the corresponding documentation. Here too, the flow of information into the system overview is ensured. If, for example, local circumstances require the electrical designer to change the device tag of a drive, this change is adopted automatically in P&ID. All associated reports and documents are therefore always up to date. PLC and PLS assignments that enter the project through the automation technology as new information are now always transparent for process and IC technology and can be shown in the documents upon request. Summary: The interdisciplinary documentation is also an ideal basis for a consistent maintenance process that always ensures that the machine is in its „as built“ state.





# Full power

## EPLAN Platform 2.0: Structured plant planning for power engineering

**H**ydroelectric power plants, coal-fired power plants, diesel power plants, nuclear power plants, wind power stations, block-type thermal power stations, solar energy, geothermal energy, biomass, and more. People appear to have an insatiable appetite for energy. The reliability of supply is being dealt with by rapidly adding new sources of capacity. As the speed of innovation increases, the top priority remains continuous availability and full performance of technical plants. That's why high-quality, interdisciplinary, consistent plant documentation plays a central role, even during development and engineering.

### Trendsetter

EPLAN Software & Service offers engineering in energy production and distribution a unique complete solution based on the EPLAN platform and its powerful special modules: electrical engineering, instrumentation and control technology, process automation, fluid power engineering, enclosure design and innovative methods for functional engineering.

### Source of inspiration

Professional planning and design of I&C systems for process

with exact, detailed instructions for enclosure production are documented.

### Pacemaker

Engineering software is the one factor. The other is the workflow and adjusting the organizational structure in the engineering departments. Both factors play a key role in process optimization. Synergy effects can only be put to optimum use if routine and standard tasks are reduced to a minimum - for everyone involved in the engineering process. Standardization is used to



**High quality. Interdisciplinary. Consistent.**  
**EPLAN perfects plant documentation in power engineering.**

automation starts with creating the plant overviews and P&ID drawings. This data flows smoothly into subsequent engineering phases.

I&C, electrical and fluid power engineering have access to pre-planning and basic planning information. Single-line representations of power circuit breakers, fuse switches, earthing switches, transformers and voltage transformers as well as 2D/3D enclosure structures

create a smooth workflow between commissioners, suppliers and manufacturing operations. Precisely specified supplier requirements ensure a uniform documentation format and consistent data so that commissioning and maintaining plants runs smoothly. Thanks to advanced engineering solutions, the entire plant documentation can be integrated into the existing PDM/PLM workflow. The result: maximum efficiency.

### EPLAN Platform 2.0 – Get ready for Power Engineering!

- Automatic creation of device tag lists (Z pages) for detailed documentation of switching and protection devices
- New master data for symbols and forms – perfectly tailored to power engineering
- Component management and engineering methods for drag & drop designing of complex switching and protection devices
- Secure, complete long-term archiving via PDF/A
- International documentation at the click of a button through multilanguage translation
- EPLAN P&ID for creation of process-specific plant overviews
- EPLAN Pro Panel for 3D mounting panel layout

**C**ontinuity from ECAD to MCAD, from PDM to ERP: This is the objective that Baumann GmbH in Amberg realized, thereby considerably improving efficiency. This objective was achieved with EPLAN Electric P8 and the interfaces between the various CAx systems and Productstream Professional. Now, both the mechanical and electrical bills of materials flow into the PDM system.



# Allround solution

**Mechatronic bill of materials: PDM connects E-CAD/M-CAD and ERP**

## Modular automation

Modular, turn-key automation: This is the common denominator for the core expertise of Baumann GmbH located in Amberg, Bavaria. The company, with 230 employees, develops and manufactures complex production systems such as those used for the production of mobile phones, blood glucose meters, automobile control units and solar cells. No matter how different these products are – they can be manufactured with the same process steps that are used for loading and unloading, equipping, mounting, designating, contacting and testing. Baumann has developed modules for each of these steps that can be combined with other modules and robot-supported handling units to make complex cells.

## feedback – robox – sembox

In previous years, Baumann pushed the modularization of individual automation steps so far that there are now standard products for individual tasks, such as loading and unloading machine tools and injection molding machines (feedback), robot-supported handling (robox), and pick-and-place applications (sembox). Other process steps were added to these

standardized cell modules to form complete production lines. With these types of modularized products designed using mechatronic modules, it makes even more sense to modularize and standardize the development processes.

## One system – one set of data

The basis for optimization was laid at the beginning of 2009 with the migration to EPLAN Electric P8. Hubert Grill: „We created all macros from scratch and completely reworked the parts master data. The basic diagrams were also revised. This did take a considerable amount of time, but experience had taught us that it would be time well invested. And now we save a substantial amount of time on each individual project, for example, when generating bills of materials.“

## Productstream Professional

As early as the end of 2008,

the Productstream Professional (PSP) product data management (PDM) system was implemented. This is a system that always provides designers with the latest version of whatever drawing

**“The connection from M-CAD and E-CAD to the PDM system and ERP system eliminates duplicate work.”**

Graduate engineer Hubert Grill, head of electrical engineering design

they need. Hubert Grill: „Our mechanical designers who work with AutoCAD Inventor provided the impetus to purchase the system. Very quickly, it was clear that

a connection from M-CAD and E-CAD to the PDM system and the ERP system would open up even more opportunities for improving efficiency and that many manual and duplicate tasks could be

eliminated, especially when processing orders.“ Therefore, the EPLAN consulting team developed an interface from EPLAN to Productstream Professional. In

addition, an interface was created between the APplus ERP system and the PDM system.

## Up-to-date data

Since it has gone live, engineers, purchasing and sales alike reap the benefits of a mechatronic, integrated information and communication platform. The mechanical and electrical bills of materials both flow into the PDM system. The PDM system forms the basis for design. Hubert Grill: „All the basic settings in Product Professional are transferred to P8 and Inventor – including the customer’s address. We have implemented a very deep interface.“ Advantage: „Via the PDM system, information which is stored in the ERP system, such as inventory and price, can be output directly to EPLAN. Last but not least, Service also uses the Productstream Professional PDM system when on site. The result: consistent data that is always up to date.“

## The platform continues to grow

Conversely, via Productstream, Electric P8 can see the commercial data stored in the ERP system, such as stock data and prices. It is clear to the Baumann engineers that this integrated information platform simplifies the design process. Which is why preparations are being made for the next step: EPLAN Fluid will be used to integrate pneumatic and hydraulic design into the platform.



It had its debut at the 2010 Hanover Fair – and now it's conquering the "eplanet" from A as in Australia to Z as in Zimbabwe: The new EPLAN Platform 2.0 which adds the last practical finishing touches didn't only rouse the enthusiasm of the around 1000 beta testers. Companies from all markets around the world appreciate the new, consistent, time and cost saving engineering with EPLAN Electric P8, especially during this economic upswing. More power means more value with this newcomer of the year. The new major release of EPLAN Electric P8 is full of enhancements. But the new power package for electrical engineering which is completely based on continuity has a lot more to offer than that.



# Practically everywhere

16 languages – 50 countries – 1 system: EPLAN Platform 2.0

## Under lock and key

EPLAN Platform 2.0 makes no compromises when it comes to quality. The bar has now been raised even higher: With the new 'Prevent errors' check type, users actively protect their projects from input errors thereby ensuring the continuing quality of machine and plant documentation. If required, the check is carried out online directly during designing. In combination with the new 'Protected device' function, EPLAN Platform 2.0 offers reliable and at the same time flexible protection of all the project data from preplanning through to the project completion.

## Single-line is simply better

Users are simply becoming faster in designing multi-line connections with single-line display. In particular in the case of standard interconnections the 'EPLAN Single Line' module saves precious design time. All detailed connections can now also be defined in a table in the single-line display. The system generates 100% detailed production information consistent in the EPLAN project at any time at the click of a button. If the user stores the single-line display plus the table-defined interconnection as a macro (possibly with diverse variants and value sets), it is possible to quickly and easily create complete, high-quality project documentation by simply

placing these macros. A decisive advantage when using function modules that are interconnected via plug-cable-plug connections.

## Parts management at its best

The new full-text search in parts management helps users work efficiently, even when the parts master is extensive. The new options for managing parts accessories provide additional optimization. The company's internal ERP number, barcode information directly in the EPLAN parts record, and the increased number of available language documents assure two things: comprehensive data acquisition and high design quality.

## One life-long document

Key word sustainability: During maintenance and servicing, the new PDF/A format ensures long-term access to interdisciplinary project documentation. This format is a standard for the long-term archiving of electronic documents in accordance with the ISO 19005-1 standard. Reliable archiving is also indispensable in light of the requirements of the Machinery Directive 2006/42/EC that requires complete documentation for at least 10 years. PDF/A supports paperless workflow – the complexity of large projects is simplified.

## Symbolic or realistic?

New symbols simplify the dis-



play of multi-level terminals. Multi-level terminals can be defined in detail in parts management, thereby ensuring a smooth and

such as the 'Terminal category' allow individual control of symbolic and photo-realistic representation in the terminal diagram

maintenance and servicing. This also applies for the reporting of the individual terminal connections, making it much easier to

**EPLAN Single Line – at the click of a button the system generates 100% detailed production information that is always consistent in the EPLAN project.**

accelerated engineering process through the EPLAN device concept. In combination with the report functions, new features

directly at the terminal. This saves time in the engineering process and prevents misinterpretation during commissioning,

recognize free connections – a decisive advantage when existing systems are being retrofitted or extended.



# VERSION 2.0



# A methodical approach

Well-rounded: Intelligent interaction optimizes the product development process

**T**his is more the rule than the exception: Evolved hierarchies and organization separated according to disciplines cause delays in the product development process. Costly change loops are the immediate consequence. On the other hand, interdisciplinary product development processes lead to sustainable improvement in engineering efficiency. Therefore, working methods need to be consistently changed. Because a lot of good minds with a lot of expertise in just as many good departments need a methodically perfect organization in order to act as a whole in a successful, consistent manner.

## More success with decentralization

If you focus on the process of developing new products, the first thing that you notice is: There isn't enough consistency. One explanation is that interaction among various engineering disciplines is often neglected. The product development process is very sequential and usually controlled and limited by thinking along departmental lines.

## The documentation challenge

In view of this, it becomes a challenge to implement the Machine Directive which requires clear, traceable, proven solutions in-

cluding quality management and 10-year documentation availability. Another problem: Standardization is usually only implemented within a department or

## Mechatronic – modular

An interdisciplinary working method is indispensable when it comes to making the product development process more efficient

then does it pay off. Initially you might think that a systematic approach is an obstacle to day-to-day activities. After all, order processing is sometimes subject

to interdisciplinary working methods. But practical experience shows: A well-structured interaction between organization, software and working methods is the key to long-term process improvements and therefore the entire product development process in terms of time, cost and quality.

The new working method is systematic, mechatronic and modular – it is the key to improving efficiency in the engineering process.

## Modified working methods increase effectiveness

The solution for more efficiency in the engineering process is in mechatronic organization combined with interdepartmental standardization which is consistently represented in a modular

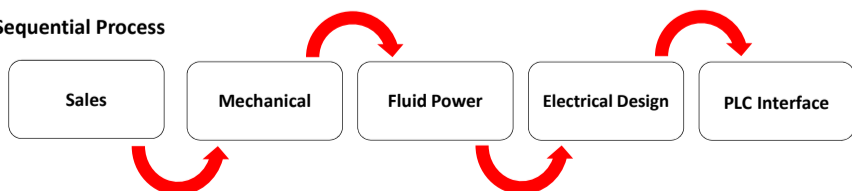
discipline. Companies also don't take advantage of the high-end functionality their often top-notch software systems offer – the applications' depth is rarely used.

overall. The new working method is systematic, mechatronic and modular – it is considered to be the key to improving efficiency in the engineering process. Only

to framework agreements. Often, specifications, time frames, resource availability and priorities change after the order is placed. At this point many start to ques-

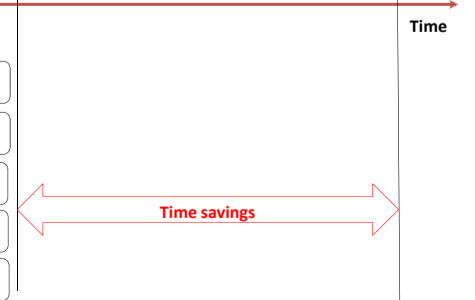
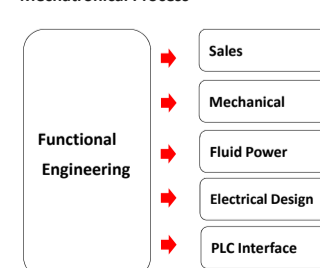
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Sequential Process



A clear advantage: The mechatronic approach is far superior to sequential product development processes with respect to time, costs and quality.

Mechatrical Process



software solution. In the end, it is the consistent, long-term implementation of a simple method that is anything but trivial. Because this method means abandoning existing working methods that developed over decades and have worked until now. Working methods will undergo a dramatic change - from discipline-specific to interdisciplinary.

**30% to 50% improvement in efficiency**

Administrative departments and engineering areas such as mechanical, electrical and fluid power engineering, software programming, etc. must be involved at the very beginning of the project. Design and organizational decisions have to be made together from now on. Work processes need to be parallelized at an early point in time, which makes it possible to accelerate process times and achieve a 30% to 50% improvement in efficiency.

**Administratively and technically better with structure**

The general idea is that a module is the reference source for any type of engineering solution. The decisive factor is the detailed level of the stored modules. The less is known about customer requirements, the more structured a module needs to be. The logical result is that each functional component has to contain all administrative and technical information from the very beginning. Through the stored framework of possible functional variations, every customer requirement can be fulfilled using the configuration function.

**Configuring instead of designing**

The changed workflow will be based on input from experts who implement company know-how as a modular, proven and approved solution, and on order processing configured to the desired result based on customer requirements. At the time of the configuration, the engineering work has already been done through the defined module; therefore the result is a generic derivative of the required documentation. Configuring instead of designing is the motto. The complete subsequent engineering documentation from the offer to the costing, mechanical design, electrical schematics, PLC programming to the operating and maintenance instructions



can then be created at the click of a button. The data is stored centrally in one system, and all generated documents are perfectly coordinated with each other. Downstream processes such as commissioning now entail few or no further changes. As a result, the processing time for an order is significantly reduced while quality is improved.

**Know-how secured for the life cycle of the system**

This consistent design systematic, which ranges from ordering to design, project planning and commissioning to maintenance, supports the entire life cycle of the system. Companies achieve a significant boost in productivity thanks to the well structured, efficient engineering processes.

Existing media changes are eliminated - component and process knowledge is available at all times and not tied to a specific person. The new method fulfills all the requirements of the Machinery Directive which demands traceable documentation to be available for at least 10 years. Clearly defined, parallelized processes based on imple-

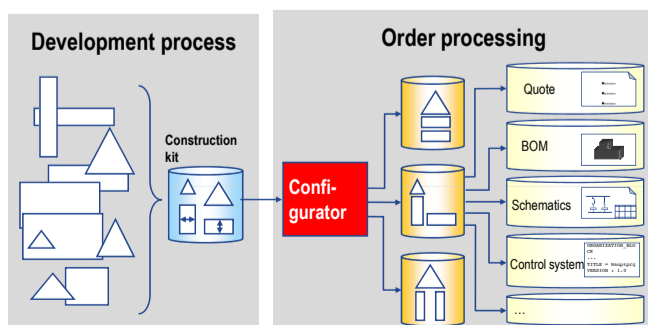
mented company standards are the result.

**The future is mechatronic engineering**

Consistently rule-based, functional, mechatronic engineering is the key factor today in radically reducing costs and processing times and significantly improving quality.

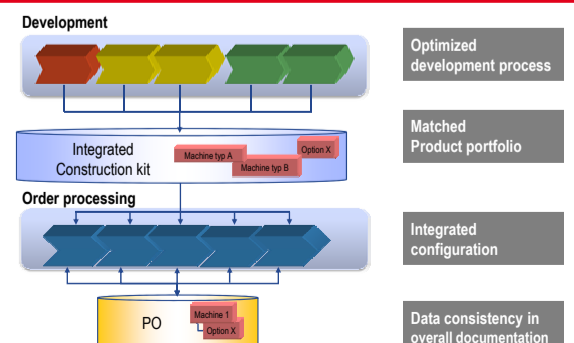
**Modular processes**

The modular engineering method accelerates processes. All the documentation is configured using functional modules.



**Process optimization objective**

A well-structured interaction between organization, software and working methods is the key to long-term improvements in the product development process.





Hans-Peter Kasparick (left), head of process engineering and systems engineering, and Olaf Günther (right), head of system solutions and industrial equipment, at Siemens WKC

**C**ustomized production around the world. Including mass production when required. There is no fixed equation for this, but there is the Siemens Combination Engineering Plant (WKC) in Chemnitz. The vast majority of the enclosures that leave the plant are manufactured in small quantities. Consequently, highly efficient, meticulously organized planning and production processes are more important than ever. It is the only way to guarantee reliable delivery and a high standard of quality. Siemens has achieved just that for the past 18 years with the integrated system solutions from Rittal: from the Hessian-based high tech company's TS 8 modular enclosure system to cooling and power distribution components to its innovate 3D development tools.

# State-of-the-art workflow

Enclosure manufacturing: Siemens WKC prefers "Rittal – The System"

## Go-to supplier of customized solutions

Siemens WKC develops and manufactures high-quality individual enclosures for numerous customers, predominantly manufacturers of production and machine tools as well as industrial transport systems. „We see ourselves, not as enclosure manufacturers, but as engineering partners and providers of system solutions,” says Olaf Günther, Head of System Solutions and Industrial Equipment at Siemens WKC. As such, the Chemnitz factory is not a mass production plant, but a supplier of customized solutions. Despite manufacturing to order, Siemens WKC's short delivery times and uncompromising quality standards set it apart from its competitors. To this end however, throughput times must be minimized and all op-

tool is also integrated, enabling Siemens to perfectly dimension the cooling unit technology for the 3D enclosure at a virtual level. Computer-assisted engineering allows a wide range of parameters to be efficiently tested in advance. All aspects requiring clarification are resolved in the development phase. The entire assembly can be digitally simulated and checked for plausibility. In this way, Siemens WKC not only saves on development costs, but also shortens process throughput time, while at the same time ensuring that all components are installed in line with the relevant standards.

## TopTherm cooling units

As soon as the virtual enclosure is complete, machining and routing follow. TS 8 enclosures from Rittal are supplied just in time by the



**“Why Rittal? Because of the availability of 3D data, the excellent link to EPLAN Cabinet and Electric P8, and the reliable climate control using programs such as Therm”.**

Graduate engineer Hans-Peter Kasparick, head of process engineering and systems engineering

erations must dovetail seamlessly with one another. For this reason, Siemens WKC uses integrated system solutions from Rittal & EPLAN throughout every phase of development and production.

## RiCAD-3D component library

This even applies to the engineering of switchgear, which are designed with the Rittal RiCAD3D components library using EPLAN Cabinet. Consistency throughout every development phase is guaranteed by Rittal software solutions, including their interfaces to EPLAN engineering tools. The Rittal Therm climate calculation

distribution and logistics center (VLC) in Gera, with premachining where required. NC files supplied by EPLAN Cabinet allow the machines at VLC to drill, punch or laser automatically at the correct positions. In a subsequent stage, preassembled cable harnesses are created using the routing module from EPLAN. This means that precut and labeled cables are already available in the correct lengths at the time of assembly, leading to significant production savings. Now the engineers are ready for seamless assembly of the TS 8 enclosures with TopTherm cooling units.

**F**ounded in 1977, Autrial built its reputation on providing electrical controls for commercial and industrial refrigeration and air conditioning. As they grew and diversified into new sectors such as power generation, alternative energy, ship-borne climate-control and more, management saw the need to standardize content in electrical design on a large scale. Autrial replaced another vendor's ordinary design software with the state-of-the-art EPLAN Electric P8 because it offered precisely what they needed and more: an electrical design platform with strong automation capabilities including the ability to create, archive and scale time-saving macros for simple or complex circuits and components.



# Driving standardization

**EPLAN Electric P8: Integrating design with planning and production**

## Powerful design tool to support growth

"We changed software because we had to begin developing standard modules and to generate complete electrical documentation directly from the program," says Alejandro Estrela. Autrial wanted to improve engineering productivity, reduce project errors (and error-checking), generate more comprehensive and accurate documentation automatically and integrate its design software with other Autrial enterprise systems so departments could collaborate more effectively in planning and scheduling production and streamlining order turnaround time.

## Errors reduced in all areas

Right after the implementation of EPLAN Electric P8, design time decreased by an average of 20%. Design errors are down 30%, wire errors 10% and component errors 50%. Designers insert parts into their project from a database of authorized components. Autrial designers also use the EPLAN Data Portal to access the online catalogues of major parts vendors and import specific parts, with data pre-validated by EPLAN, directly into their project. When a component is inserted, all lists and schematics are automatically updated and cross-referenced by EPLAN Electric P8.



## Streamlined inventory management

EPLAN has helped Autrial streamline purchasing and inventory management. Components are ordered on an as-needed basis, cutting down on duplicate orders, over-stocking

## Building a library of standardized content

The same component data is stored in an archive of recurrent content Autrial is building up in the EPLAN database. The content archive holds macros for basically anything that reoccurs

says Alejandro Estrela. "One of the things we appreciate the most about EPLAN is the ease with which one can configure macros. The designer chooses the model, configures the parameters and the drawing is finished." "These efforts to standardize content

## Dynamic document-sharing adds value

The upgrade to EPLAN took Autrial to a much higher level of automation in the preparation and sharing of documentation internally and externally. EPLAN quickly and accurately generates a complete dynamic PDF documentation package including all lists and schematics. All electrical drawings are converted to PDFs for the PLC programmers, production and inspection departments. "The PDF is sent to customers; some of them integrate our documentation into theirs. We can include in that one PDF all electrical specifications, certificates, user manuals and product manuals," says Alejandro Estrela. Customers highly rate Autrial's EPLAN design output as a most competitive engineering process.

**"EPLAN allows us to reach a new level of design efficiency, standardization and new model development.**

**EPLAN is the platform that is enabling us to integrate electrical design content with other systems and departments."**

*Francisco Requena, head of the technical department*

and shortages. When design work is complete, all wire lists and bills of materials are transferred electronically from EPLAN to the purchasing department.

in designs. "We have developed standard modules, and when the designer selects and parameterizes it and inserts it into the schematic, EPLAN does the rest,"

are only a start," says Alejandro Estrela. Standardization is being expanded because it greatly accelerates new product development and order fulfillment.

# Manufacturing savings model

EPLAN Engineering Center: A lot of freedom thanks to functional modules

**T**he 100 meter dash. A time of 10.0 seconds is phenomenal. 7.0 seconds would be practically unbelievable. They are worlds apart. Expressed in figures: 30 percent. This is exactly the difference that resulted from a test run at engineering service provider Hörmann Industrietechnik GmbH. Team I planned a small project using the EPLAN Engineering Center (EEC) modular system while Team II worked without EEC. Final result: The win went to the EEC team.

## A change in methods creates new perspectives

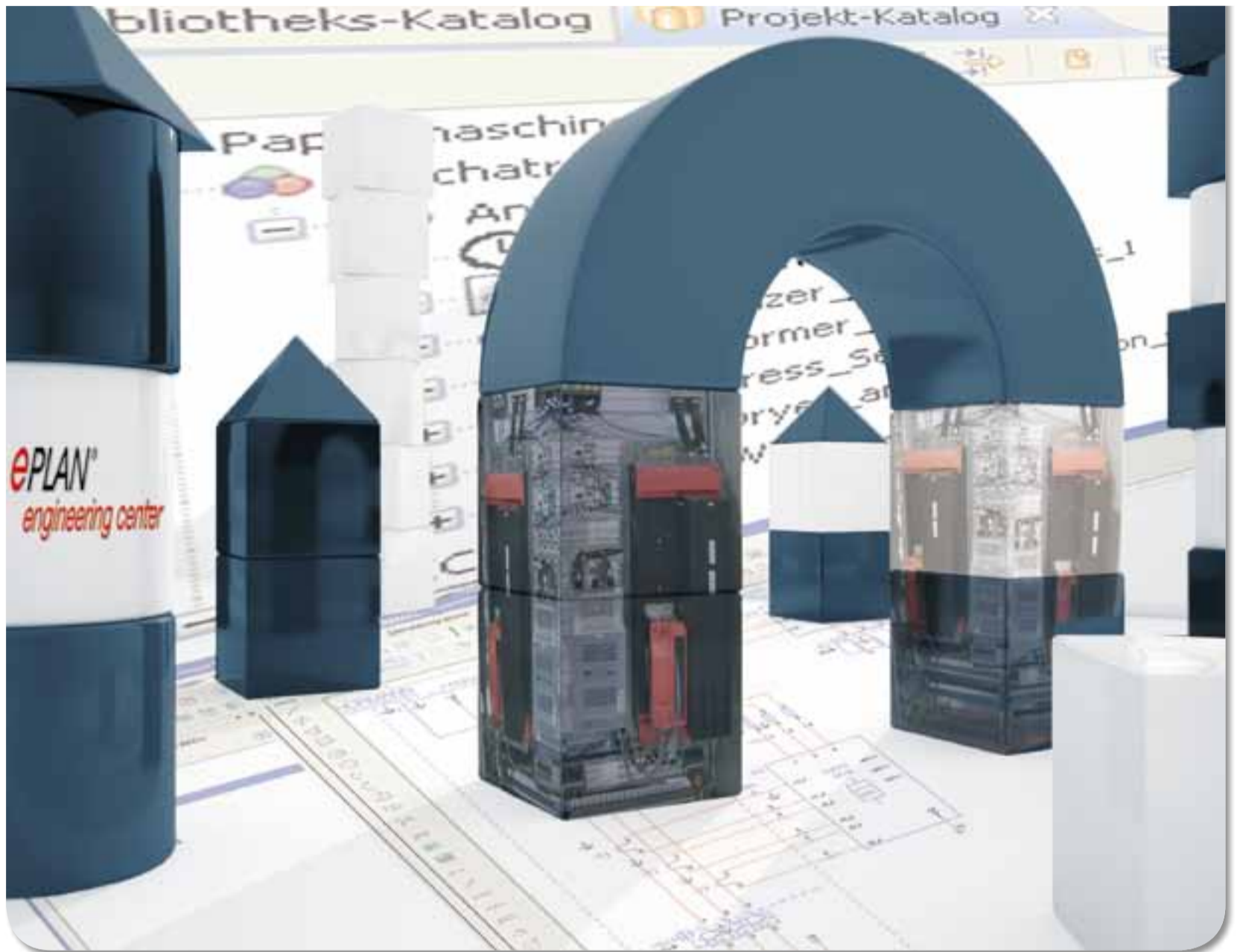
The market dictates the question: How can an engineering service provider create a decisive competitive advantage? Hörmann Industrietechnik GmbH was able to answer this question itself with EEC; an internal company comparison took away any lingering doubts. The Voith Industrial Services company is using the EPLAN Engineering Center to build up a modular engineering toolbox in order to improve design quality, be more flexible and, as always, significantly accelerate projects.

## Electrical engineering for the most demanding requirements

Hörmann Industrietechnik GmbH, an engineering service provider, takes on the electrical design of entire production facilities. One recent project included planning control systems and all electrical engineering for a German automobile manufacturer's body-building plant. It doesn't get any more demanding. After engineering was completed and approved by the customer, the electrical systems were built at Voith automotive's enclosure manufacturing site – and installed at the customer's location.

## Simply faster: Accelerating the planning process

Hörmann is aware of the trend among engineering service providers to continually shorten project planning times and manage more and more processes in parallel. Franz Fehlner, Senior Vice President at Hörmann Industrietechnik GmbH: „In general, we want to respond to this trend and optimize our processes so that we can act



and respond more quickly.“ We were already using the EPLAN Platform – the next logical step was to adopt the EPLAN Engineering Center (EEC), with its mechatronic approach and unique design methodology. We are using the EEC to create

pers or welding guns that are assigned specific features and performance data.

## Last-minute changes are no longer a problem

Initial projects completed using the EEC worked quite well: The

was only one of many benefits. Graduate engineer Christian Hennerfeind: „Improved quality and greater flexibility were two important factors for us. Since we now use identical modules and proven designs for all installations, overall quality has

just a model.“ Now, Hörmann is able to accommodate customer's last minute changes, even in the latter phases of the project.

## Hand in hand to PLC, enclosures, and more.

PLC programming is done in the EEC using the same modular principle. Hörmann uses the EEC for the visualization and configuration of safety technology in combination with Sistema software. Enclosure designers working in EPLAN Cabinet also receive their data, including automatic cable preparation, from the EEC. The link to the ERP systems maintains consistency between technical and administrative tasks.

## Optimized workflow – early integration of calculation

Franz Fehlner: „The Engineering Center enabled us to create an integrated workflow that includes all calculations and documentation.“ According to Mr. Fehlner, the EEC makes calculating easier even before the order is placed. „We can plan in more detail in the bid phase. We can calculate more precisely which our customers appreciate. And if we get the order, we have already performed some of the prep work, which accelerates the actual project.“

**“We took a small project and had engineers design it, some using EEC, some not. The group working with the EEC was 30% faster.”**

Bernd Mandlmeier, team leader at Hörmann Industrietechnik GmbH

a component library where machines or entire production lines are broken down into small, functional modules, representing functions such as robot grip-

designers were able to complete their tasks significantly faster when working with the EEC rather than with conventional methods. And the time savings

improved. We are much more flexible in our ability to respond to last minute changes. Until we build the physical enclosure, nothing is set in stone, there's



Franz Fehlner



Christian Hennerfeind



# Control center

**EPLAN Pro Panel: 3D mounting layout in electrical and fluid power engineering.**

**F**ully integrated into the EPLAN Platform: The new EPLAN Pro Panel makes working as simple as 2D, but better in 3D. 3D engineering is the innovative solution building block in automation technology. The software supports detailed project planning in an integrated, interdisciplinary project.

## Accelerated processes

Why the latest EPLAN platform building block advanced to become the innovation of the year is quickly clear. Layout and mounting drawings based on two-dimensional views quickly reach their limits when it comes to planning complex mounting layouts. Systematic support is what is needed when creating mounting layouts in order to reliably detect possible collisions between components. Long-term software solutions such as EPLAN Pro Panel are required to design an integrated product development process, to parallelize engineering process and to accelerate the process as a whole.

## Fully integrated into the Platform

EPLAN Pro Panel, the new EPLAN Platform add-on module, offers efficient 3D layout planning, including placement aids. The system is fully integrated in the platform and interacts directly with the 2D schematic, providing high-quality documentation for manufacturing, mounting and operation. Technical drawings with legends can be generated from the 3D model. They will be automatically updated if there are any changes to the mount-



ing layout. These drawings are an indispensable tool for smooth manufacturing and assembly.

schematic designing and 3D assembly layout can be performed sequentially or in parallel -

shown: 3D layout drawings make mounting and production easier for fluid engineers. Mount-

**With EPLAN Pro Panel, 3D mounting layouts and standardized production drawings can be quickly and easily produced using associated model views.**

## Two disciplines – one process

EPLAN Pro Panel eliminates the separation that existed between designing the schematic in electrical or fluid power engineering and creating the mechanical mounting layout of e.g. mounting panels in mechanical engineering. In an integrated project,

by several users and interdisciplinary. Where to start designing is up to the user: start either with the schematic or with the layout of the mounting panel in 3D

## The advantage for fluid engineers

Day-to-day experience has

ing panels for complex fluid systems can be virtually equipped early on. Openings and holes resulting from placement can be machined earlier using the derived assembly diagrams. It is also easier to integrate supplier documentation: mounting dimensions of delivered subsystems

(e.g. hydraulic power units) can be taken into account in the design. Sub-suppliers have a new way to separate themselves from the competition in the presales phase. They can optimize their bid by including 3D documentation created with EPLAN Pro Panel.

## Collision checking included

The 3D mounting layout description and associatively linked drawings and reports form the foundation. Combined, they significantly reduce the number of steps needed to create and maintain documentation. The realistic representation improves communications with your customers and specialist departments - in the earliest possible phase of product development and over the long term. Intelligent placement aids, collision checking and the consideration of manufacturer specifications guarantee planning reliability, perfect space utilization and early availability of precise data for production and mounting. The advantage:

The intuitive user interface ensures that both occasional users and experts can create detailed documentation using EPLAN Pro Panel.



# INTERNATIONAL EXPANSION

Totally global: Strong presence of EPLAN in China & the USA



**E**PLAN Software & Service laid the foundation for consistent internationalization years ago. Not only is the software at home in all languages around the world, local presence also continues to get stronger. With bases in China and the expansion in the USA, EPLAN's global business is in the fast lane – supported by synergies and the logistical performance of parent company Rittal.

**China: From zero to hundred**  
In September 2005, EPLAN Software & Service set up operations in Shanghai – now there are four bases in China. In addition to the center in Shanghai, EPLAN is present with its own personnel in Beijing, Chengdu and Shenzhen centers. In addition, several distributors located in Beijing, Shenyang and Shanghai cover the market around the country. Just like global players in the European market, Chinese companies such as China Tobacco, Brilliance and Guodian

accelerating from zero to hundred. Interdisciplinary projects have been efficiently realized in growth segments such as steel engineering, regenerative energies and infrastructure. Consultants with mechatronic expertise assist the integration in existing PLM landscapes, following the motto of maximum automation.

**Expansion in North America**  
EPLAN has been thriving in the U.S. market as well. The EPLAN Platform is considered to be the technologically leading system

**Efficient engineering**  
In addition to traditional classroom training, a state-of-the-art training and help desk center is establishing virtual training courses offering webinars and remote data maintenance.

EPLAN always takes part in major industry events such as the Rockwell Automation Fair and ABB Automation & Power World, and also attends conferences and road shows for automation technology and mechatronic engineering.

**“Asia and North America are major markets for us. We are represented in China and the USA by top teams that we are intensively developing.”**

Hans Hässig, Managing Director of EPLAN Software & Service

United Power Wind count on EPLAN's expertise in providing solutions.

EPLAN's international presence is a convincing argument, as is the globally-oriented software technology which covers local standards and languages. The general market in the People's Republic of China is evolving at a dizzying pace: Records are not only being broken in building skyscrapers, express trains and IT – engineering is also

and it was able to make great strides against the competition according to a market survey published in the U.S. magazine 'Control Design'.

About presence: The North American market has been opened up with locations in Detroit, Atlanta and Chicago – another Houston base is currently being designed and built. Market rollout in Mexico and Canada (Montreal, Mexico City and San Luis Potosi) is also underway.

Companies in the USA realize: Time to market can only be minimized by with continuous data consistency and data networking. Efficient engineering – the EPLAN-Motto – is also practiced intensively in the USA.

And expansion with perspective continues: China and the USA are crucial growth markets and will be expanded in the future, as will the network of branch offices in Eastern Europe and Southeast Asia.

www.eplan-your-engineering.com



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