ePLAN® cabinet

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VOITH

Industrial Services

Streamlining projects with modular design

Designing faster with greater flexibility

The trend among engineering service suppliers is to use all means to shorten project planning and turnaround times. At the same time, at Voith Industrial Services the automotive engineering group (formerly Hörmann Industrietechnik GmbH) wants to better serve existing customers and break into new markets. It's addressing all of these goals by employing the EPLAN Engineering Center (EEC) to build up a modular engineering toolbox to improve design quality and accelerate projects.

"We wanted to respond to this trend aggressively by optimizing our processes so we can turn around projects faster," says Business Operations Manager Franz Fehlner. "We also wanted to be more flexible in reacting to the growing frequency of customer demands for 'last-minute changes'."

efficient engineering.

FRIEDHELM LOH GROUP

SAVING TIME
using modular toolkit
in electrical design

Modules represent specific functions

A specialized engineering service provider, the Voith automotive engineering group does the electrical design of entire production facilities from its 22 locations. One recent project included planning control systems and all electrical engineering for a German carmaker's body-assembly shop. The installation included 21 robots with multi-docking stations, six turntables, two additional work stations as well as automated hemming processes for the welding and attaching of car body components. The electrical systems were built at Voith automotive's enclosure manufacturing site – and installed at the customer's location.

The automotive group already was using the EPLAN Platform to great advantage. The next logical step to shorten turnaround times was to adopt the EPLAN Engineering Center (EEC), with its mechatronic approach and unique design methodology. The automotive group is using the EEC to create a component library where machines or entire production lines are broken down into small, functional modules, representing functions such as robot grippers or welding guns that are assigned specific features and performance data.

Modular library took advanced planning

Creating these functional modules required extensive upfront planning, says engineer Christian Hennerfeind: Prior to implementation, "you make a central and very far-reaching preliminary decision on the future benefits of the engineering center. We have carefully examined the structure of all installations built by us to define a level at which we structure these modules representing components and interfaces." The group created an EEC Competence Center in Ingolstadt, Bavaria (where automobile manufacturer Audi has its headquarters) to develop the modular toolbox and provide colleagues at other locations with support.

Test suggests EEC cuts design time by 30%

The concept adopted has been dubbed "signal-wiring" and has worked well with initial EEC projects. The engineers were able to execute their tasks faster working with the EEC. A test organized by team leader Bernd Mandlmeier helped quantify the savings. "We took a small project and had engineers design it, some using EEC, some not. The group working with the EEC was 30% faster."

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DESIGN flexibility

to meet customers' changing needs

"Since we now use identical modules – and proven designs – for all installations, overall quality is improved," says Christian Hennerfeind. "We are much more flexible, able to react to last minute changes that occur more and more often in our business. Until we build the physical enclosure, nothing is set, it's just a model."

EEC serves PLC designers

Another advantage of the EEC for Voith is the ability for other engineering disciplines to benefit from it. PLC programming is done in the EEC using the same modular principle and the EEC is used for the visualization and configuration of safety technology in combination with Sistema software. Data for manufacturing enclosures, including automated cable assemblies, is transferred to the enclosure designers, working in EPLAN Cabinet. "The Engineering Center enabled us to create an integrated workflow that includes all calculations and documentation," adds Franz Fehlner.

Calculations simplified

The EEC also makes it possible to give the customer a more comprehensive cost estimate prior to design commencing. "We can do a more detailed planning in the bid phase," says Franz Fehlner. "We have a better basis for discussion with the customer. And if we get the order, we have already performed some of the prep work, which accelerates the actual project." The EEC, via a link with the automotive group's ERP system, supplies the Bills of Materials and cable lists to the administrative departments for purchasing and billing.

The decision to create an EEC design toolbox also catered to a desire to broaden the group's customer base and markets, inside and outside Voith. "For example, we can use it to solve interesting challenges that exist at other Voith companies," says Franz Fehlner. Already, Voith Paper has given his group a mandate to upgrade the electrical design for a paper machine. The group's intermediate goal is to get 30% of sales from such new customers.

> "With the EEC we have of a tool which promises to shorten development time, improve quality and increase flexibility," says Franz Fehlner. "We want to take these strengths and use them to broaden our appeal to new customers and new industries."

Automation

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Electrical design, one-third faster

SUMMARY

When Voith Industrial Services' automotive automation group (formerly known as Hörmann Industrietechnik) began using the EPLAN Engineering Center with its modular building kit concept to shorten project turnaround times, it found it could complete the design phase of projects up to 30% faster than by conventional design practices. The benefits weren't limited to boosting productivity. There have been quality improvements. Project cost estimates are more comprehensive. Voith engineers have increased flexibility to accommodate customers' last minute changes, and by linking the EPLAN database with the company's ERP system, the business departments have real time access to Bills of Materials and other project details for purchasing and billing.

Find out more about Voith Industrial Services on www.voithindustrialservices.de

efficient engineering.

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