

ePLAN[®]
*electric***B**

ePLAN[®]
fluid

DÖRRIES

Scharmann Technologie
Promoting interdisciplinary collaboration

Data-sharing on the EPLAN Platform

An aircraft manufacturer wants to have a five-axis machining centre to fabricate complex structural components. A manufacturer of wind turbines wants to more accurately and flexibly machine turbine parts. These are typical orders for Dörries Scharmann Technologie GmbH (DST). DST produces machine tooling systems under its Dörries, Droop + Rein, Scharmann, Berthiez and Mecof brands that satisfy customers' special requirements for both precision and speed.

Some are enormous machines. DST's plant in Mönchengladbach, west of Dusseldorf, Germany, has built systems capable of machining metal sections as long as 25 meters. One order involved seven high-performance ECO-SPEED F machining centres for KAI Korea Aerospace Industries Ltd. for building wing ribs for the A350 XWB passenger jetliner being developed by Europe's Airbus. DST is using what it calls the most productive solution for high-performance cutting of aluminum components: parallel kinematic Sprint Z3 machining heads that are standard in ECOSPEED machines. The main spindle is equipped with drives up to 120 kW and achieves rotation speeds up to 30,000 per minute.

efficient engineering.

ALLOWING

engineering disciplines
to collaborate in real time

// DST has considerable experience with designing in EPLAN, having migrated from EPLAN 5.70 to EPLAN Electric P8 for the opportunities the latter offered to improve productivity with its new database-centric architecture. One of the most intriguing of these enhancements was the ability to integrate electrical and fluid power engineering on that EPLAN Electric P8 database, also known as the EPLAN Platform. //



Data inconsistencies eliminated by upgrading to EPLAN Platform

Fluid power engineering plays a significant role at DST. Many machines are equipped with hydrostatic bearings or hydraulic chucks. Compressed air is needed to blow off chips, to operate pneumatic axes (e.g. in tool changers), and as sealing air in measuring systems. These and similar fluid power functions are electrically controlled. Since electrical and fluid power are integrated at the functional level, it always made sense they should be integrated during project design so electrical and fluid power engineers could collaborate more effectively. Only that wasn't possible before the migration to EPLAN Electric P8; the CAD tools employed by the two engineering disciplines could not be synchronized.

"In the case of these very complex electrohydraulic and electropneumatic design parts, the two groups were producing data that was not consistent," says engineer Christian Nientimp, head of electrical hardware design. "Automatic data synchronization was not possible. Despite excellent and intensive cooperation, inconsistencies could not be avoided, causing extra work. Time loss was unavoidable."

Large time savings with integration on EPLAN Platform

Since the EPLAN Platform supports all EPLAN design software tools, DST was able to add EPLAN Fluid for hydraulic and pneumatic design. Now, its two fluid power and eight electrical designers share data and collaborate in real time. The result: Large time savings, more comprehensive design packages with significantly greater accuracy without the need to manually adjust data to eliminate inconsistencies, because there aren't any.

Platform diagnostics eliminate both electrical, fluid errors

"Many dimension parameterizations are now stored in the system, available to both electrical and fluid power designers," says Christian Nientimp. Both disciplines are always using the same version of a drawing. The hydraulic and pneumatic standard designations as well as the electrical identifiers are stored in the schematics, making cross-referencing immediately visible in both directions. "If an error should occur, it is usually found by the EPLAN Platform diagnostics function," says Christian Nientimp.



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STREAMLINES

enclosure
design

Data has many uses

EPLAN Electric P8 allows data to be freely parameterized. DST uses this feature for pricing and order data as well as for product-specific data such as dimension, weight, distances, heat dissipation and electrical consumption. EPLAN is not only used in design but as a project information tool throughout the company. “We have around 100 workplaces equipped with a viewing function that is used extensively – in sales and software development as well as in assembly and commissioning,” says Christian Nientimp.

EPLAN is used to keep the component database current. Data for new parts is entered immediately, providing up-to-date content for automatic generation of bills of material that can be transferred directly to DST’s enclosure manufacturer, Siemens WKC. Siemens engineers use EPLAN Cabinet for enclosure design and manufacturing, another product supported by the EPLAN Platform so data can be readily shared. Prior to upgrading to EPLAN Electric P8, DST used add-on applications to generate device and price lists. Now these lists are created instantly by EPLAN and transferred to enclosure production. “We have a continuous flow of information and because Siemens component prices are stored in our system, we know what the enclosure costs will be as soon as the design has been completed. This enables us to quickly and accurately cost projects,” says Christian Nientimp.

Building up macro archive

DST is looking to make greater use of archived content that can be inserted into projects as macros. The company’s EPLAN macro library has grown and will grow a great deal more, as will the time savings. DST machines are usually developed or adapted to meet specific customer requirements, so design modularization – employing more standard, pre-validated content elements – offers very important productivity enhancements. “We are currently preparing the macro structure we will use in the future and are very carefully planning the optimum module size while striving to have a common basis for all product areas and machine sizes,” says Christian Nientimp.

“Everyone feels well-prepared for future requirements since CAD technology has been brought up-to-date and engineers across all disciplines cooperate more closely.”



Integrating
electrical, fluid design

SUMMARY

Data sharing made easy

Dörries Scharmann Technologie GmbH used the migration to EPLAN Electric P8 to add EPLAN Fluid so it could integrate electrical and fluid power engineering using the EPLAN Platform concept. Now, electrical designers work more effectively with their colleagues in hydraulic and pneumatic design – sharing the same data in real time. At the design level it means huge time savings and consistency between the two disciplines' work the first time through. Using the EPLAN Platform also facilitates information sharing within the company and between DST and its enclosure manufacturer.

Find out more about Dörries Scharmann Technologie on www.ds-technologie.de

efficient engineering.



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