STANDARDIZATION OF PROCESSES AND DATA HANDLING

Flexibility is Our Future

BY HANS HEGER

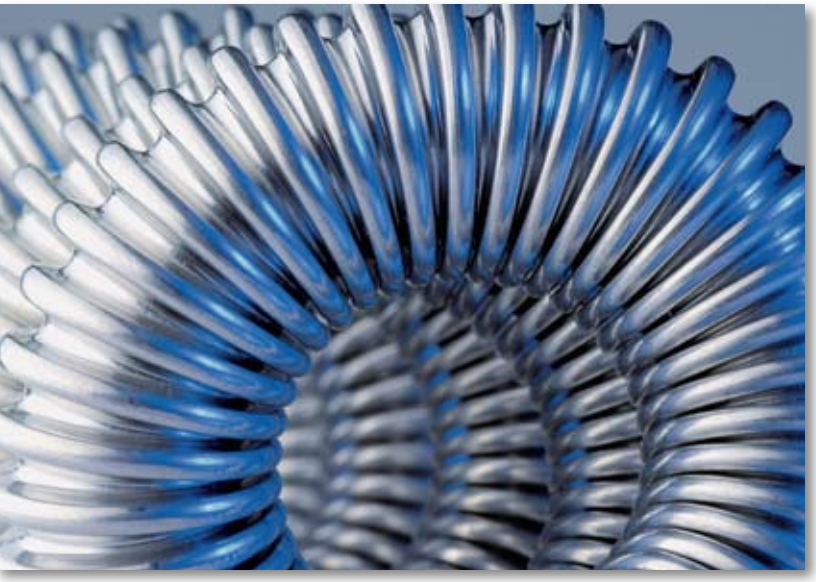
SAP PLM integrates CAD systems and manages scanned drawings as well as documents that are relevant for technical processes. Engineering Control Center (ECTR) structures the documents and facilitates the processes. Based on these characteristics, the solution establishes a dedicated authorization concept that permits access to the data only for authorized SAP users. The benefits of this approach also include the system integration of technical and commercial data as well as the integrated and accelerated processing of master data.

Witzenmann Group is the European market leader in the metal hose and compensator industry. The company is headquartered in Pforzheim, Germany and manufactures flexible metal elements, for instance metal hoses, compensators, metal bellows and automotive components. Its products address problems such as vibration absorption, expansion absorption in pipelines and those regarding the flexible installation and piping of media. As a development partner of the automotive industry, technical building equipment suppliers and other markets, including the aircraft and aerospace industries, Witzenmann operates its own machine, tooling and model engineering departments and also possesses a large contingent of testing and inspection equipment.

SAP PLM Replaces the PDM System

The company develops and engineers its products in NX and ME10. In the past, product data was managed in a separate product data management system, referred to as PDM. The unique advantage of this PDM system was that it was able to jointly manage the existing 2D-CAD data originating in ME10 and the associated 3D-CAD product structures from NX. The pertinent material numbers of the documents were obtained by the users from the SAP system – manually. Five business units and two centralized departments were using this method and each one utilized the PDM system for its specific requirements. The enterprise decided to replace the PDM system so that the two system worlds of SAP and CAD could be connected with each other. SAP PLM was implemented as the replacement. The decision in favor of SAP PLM resulted in the management of the NX and ME10 CAD data in SAP. As a result, the ERP system has been extended to include the development and engineering departments and the CAD world, which had been separate until then, has been integrated into SAP. This integration was possible thanks to the „SAP PLM Integration for NX" – a solution developed by DSC Software AG.

Witzenmann implemented the Engineering Control Center (ECTR) solution with the objective of optimizing its processes. This DSC Software AG application offers CAD users functions that simplify the use of SAP. It also integrates NX drawings and models as well as documents. All are now displayed in an organized and well structured fashion. CAD users have at their disposal folder and project structures to organize their daily assignments. For instance, the software does depict the Witzenmann standard parts concept. Hence, all parts are available as complete parts families and can be broken down into individual parts for processing, which is also possible within the solution. Consequently, ECTR enables a particularly deep integration of CAD and SAP.



HYDRA flexible hoses are absolutely seal tight and are used to pip liquids and gases under pressure or for vacuum lines.

Project Rollout with Hurdles

The first and foremost step of the project, which began in 2007, required the analysis of the needs of the business units with regard to the new system so that the respective specifications could be accommodated perfectly. Business units auto-

motive components, manufacturing and machine engineering as well as tooling had the most profound impact on the layout and progression of the project. The reason: Very different business processes that had to be accommodated by the integrated system, such as a product engineering unit with downstream production planning and series production at multiple manufacturing facilities; product engineering with a high volume of drawings and downstream customized production as well as large CAD assemblies with downstream process planning and in-house tool shop with CNC machinery. The project was managed via a steering committee consisting of the senior management of the company and the heads of the respective business units. At the same time, project groups were established, which comprised key users from the business units, from production and process planning.

Over the course of the project it became evident that document data access would have to be as simple and fast as possible while keeping it absolutely secure. Consequently, one eventually arrived at the conclusion to program a solution called PLM Informer. This tool makes it easier for SAP users to access released documents and parts lists, because it enables searches via material and drawing numbers. This was important especially for the user groups in sales, process planning, production and purchasing. The process planning and production planning and control staff received step-by-step on the job training from the SAP and PLM Informer key users.

Authorization Concept Established

The authorization concept turned out to be a slightly more complex challenge. Witzenmann expanded its concept in such a manner that the company can allocate drawings in its global network of users to the various work teams at the respective locations. This restricted access allows the company to boost the security of its data. One critical milestone for the migration was the cleansing of the existing data. Some of the about 500,000 documents and 300,000 drawings were already 16 years old at the time. In order to bring all of them into compliance with a uniform status, dedicated migration rules were defined for each business unit. The experiment proved successful: While some business unit migrated all of their drawings, others limited themselves to the migration of the meta data and TIFF drawings. Witzenmann mastered this challenge as well and converted all data in such a manner that it is available for continued use in any event.

ECTR and Add-on Modules

Besides its „SAP PLM Integration for NX“ and the implementation of ECTR, DSC Software AG also installed ECTR add-on modules ++convert and ++dataExchange. At Witzenmann, ++convert generates neutral formats PDF-A and JT automatically. As a result, it is now possible to access CAD drawings and models independent from the respective CAD application. The conversion runs automatically in the background on a special server after the data has been saved. Consequently, the engineers are now in a position to continue their work without having to wait. ++dataExchange enables the key users to import and export individual files and entire assemblies into and from SAP PLM and to thus control their data exchanges or the external access via SAP PLM. Moreover, Witzenmann is now utilizing ECTR to complete drawing headers automatically. During this process, the latest status of the document is also assigned to the drawing. Hence, Witzenmann has been able to accelerate its procedures and processes.

Metal forming processes make it possible to manufacture premium flexible metal components with absolute precision.
Photos: Witzenmann

Project Goals Attained

Thanks to the combination of SAP PLM and ECTR, Witzenmann has attained the full system integration of its technical and commercial data. Engineering, process planning and production are now in a position to process even master data more expeditiously. Moreover, all departments involved in the process have simple and direct access to drawings, models and other documents. The master model concept has been established in engineering. Henceforth, all business units are working with a uniform method. Furthermore, the master model concept has improved the performance with regard to large assemblies.

Last, but not least, the status network has been implemented for the master data. Consequently, the release of drawings and models is now following firmly defined processes and methods while SAP consistently documents the progress. A worldwide rollout is planned in order to allow the SAP ERP connected locations to fully profit from the new PLM solution. bw ■

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