Customer Success Story

> „The XPLM connector for Altium Designer to SAP PLM is really intuitive to use. Within a few hours, we got to grips with it thanks to the excellently prepared training documents."
>
> **MICHAEL WAGNER,**
> **HEAD OF RESEARCH &**
> **DEVELOPMENT,**
> **KUKA DEUTSCHLAND GMBH**

© KUKA Group

THE PROJECT

- Migration from the existing PDM system to SAP PLM
- Extension of the ECAD environment with further design tools
- Integration of the ECAD environment via SAP ECTR into SAP PLM
- Data integration into SAP ERP processes for purchasing, logistics, etc.

THE CUSTOMER

KUKA is a global automation corporation with sales of around 2.6 billion euro and roughly 14,000 employees. The company is headquartered in Augsburg, Germany. As one of the world's leading suppliers of intelligent automation solutions, KUKA offers customers everything they need from a single source: from robots and cells to fully automated systems and their networking in markets such as automotive, electronics, metal & plastic, consumer goods, e-commerce/retail and healthcare.

STARTING POINT

Since the PDM system previously used in hardware development was no longer sufficient for current requirements, KUKA decided to use SAP PLM in electronics development, the system with which mechanical design has already been managing its MCAD data for years.

At the same time, a new ECAD system was to supplement the existing tools. The special feature of this project was that in the future the component library of all ECAD systems in use had to be synchronized with SAP PLM.

SOLUTION

SAP ECTR serves as the ECAD-PLM interface for transferring the Altium Designer data to SAP PLM. KUKA and XPLM jointly developed a data model that exactly matches the working methods of the 30 named users in electronic development.

It also manages product variants, designed, for example, for different automation solutions or due to regionally different compliance requirements. Due to the global activities of the group, it is also intended that all KUKA locations are able to access the centrally managed SAP PLM information. Before the official start of the project, however, a few key users thoroughly tested the rapid deployment version of SAP ECTR. Once the functions were seen to largely meet the requirements of the ECAD developers, the team gave the go-ahead for the system migration.

ECAD DEVELOPERS HAND OVER ROUTINE WORK TO THE ECAD CONNECTOR

The basis for every new creation of documents and material masters in Altium Designer and any changes to them is the single SAP change master. Its change number follows the cross-plant SAP status network, which means that the development history remains traceable. The data model in SAP PLM, which is precisely tailored to KUKA, not only defines the storage locations for the native and generic data, but also contains templates that control the composition of the content as well as the file formats and file naming. This means that the developers manage their Altium Designer data completely from the ECAD environment.

If you store a new printed circuit board version, the interface saves the native layout and assembly data independently at the defined location in the PLM system and supplements them with the automatically generated production data for circuit board and assembly. All files are automatically named in accordance with the KUKA naming convention.

At the same time, this process triggers the output of the parts list and its conversion into STEP format. The XPLM connector carries out a plausibility check that identifies unknown components or symbols without an associated component, etc. If there is a product change, a parts list comparison provides the changed reference designations or the difference in quantity per position. This is important information for the purchasing department, which no longer has to make this comparison manually.

STORED PROCEDURES SYNCHRONISE THE COMPONENTS OF ALL SYSTEMS INVOLVED

This synchronization of the component libraries in all ECAD environments used with SAP is handled by stored procedures in an MS SQL server. SAP PLM is the leading system, including the usual input and release processes.
The challenge was not only to keep the libraries of different ECAD systems up to date in an automated way. Rather, it was a matter of integrating these processes into those of the ECAD-SAP PLM connector and also ensuring that the ECAD libraries and PLM articles matched the current status of the article master data in SAP ERP.
Finally, KUKA wanted to process the bills of materials directly electronically in KUKA materials planning, among other things.

ADDED VALUE

- ✓ Easier interdisciplinary teamwork thanks to an always up-to-date overall view of the product

- ✓ More transparent relationships and history, as well as easily traceable project progress

- ✓ Automatic augmenting of the parts list with the current ECAD data

- ✓ Common, consistent configuration, change and version management

- ✓ Consolidated parts lists and design releases for all relevant follow-up processes