

Application cabinet with components (Picture: ABB Automation)

DATA MANAGEMENT FOR ROBOT DEVELOPMENT

Improved productivity and data security through central data management

CIDEON Software implemented the integration between the CAD systems and SAP PLM and closed the gap in ABB Automation GmbH's data management.

ABB Robotics, located in Friedberg, Germany, is a leading supplier of industrial robots, robot software, modular robotic manufacturing cells and offers service for a broad range of applications in automation. These products and services make it possible for customers to increase productivity and product quality as well as to enhance work place safety. ABB has installed more than 160,000 robots worldwide.

ABB Automation GmbH's product and service offerings in the Robotics division in Friedberg encompass industrial robots, standard cells, customer-specific system solutions and services with emphasis on the customer segments: automotive and supply industry and production industries. A top priority is robot sales to system partners. In addition to product manufacturing, the company's core competencies include planning and development of arc-welding systems and facilities for the core areas: machine operations, foundries and forgers, paint applications, shell construction facilities and press automation systems.

Digital product development leads to greater efficiency

The robot specialists, always wanting to stay on the ball when it comes to innovative tools for development and production, started evaluating new CAD technologies early on. First, they implemented AutoCAD, then in 1999 they took the first steps into 3D design engineering using Autodesk Mechanical Desktop. Three years later the Friedberg company converted to Autodesk Inventor. The

3D system now has 13 users, two of which are Inventor Professional. Dirk Walther, is a plant facility planner, engineer and CAD administrator with ABB and is pleased about the sharp increase in Inventor's development and its enhanced functionality. ABB values, for example, the simulation of complex motion-sequences, quantity computation, collision analyses and the variant engineering of parts and assemblies. The extensive interfaces for data exchange have also become extremely important for the company and its work with partners and customers, especially because ABB uses multiple systems. When planning large paint facilities, ABB uses five MicroStation systems, for example. The company uses the Delmia-Product IGRIP and Software Robotstudio, a simulation tool developed by ABB for robot simulations. Both programs are capable of importing Inventor data.

Data management for robot development

The growing scope and variety of documents and data formats in robot development affects the engineers' productivity. It was becoming clearer for those responsible that they needed to create an analogous infrastructure and system for electronic documents, like what was previously used for paper documents, in order to create more efficient processes and to ensure data security.

ABB Automation gathered its first experiences with data management in 2004 with the implementation of the newly developed Autodesk Vault module, which is an integrated component of the Inventor package. A year later the company made a strategic decision to shift the administration of engineering data into the SAP system and migrated the Vault data to the SAP PLM module. "SAP plays a very central role for us and therefore should not only control and administer the merchandise manage-

ment, but also the processes, data and documents in the Engineering department. That's why we implemented the CIDEON module SAP PLM Integration for Inventor as the interface between Inventor and SAP PLM. This software

SAP PLM Integration for MicroStation

avoids duplicate data capturing and ensures a secure approval process. This CIDEON solution facilitates the access to current CAD data for other departments and ensures convenient operation with SAP from within MicroStation. Provides depiction of the MicroStation data model in SAP PLM.

CAD Migrator for SAP PLM

for migration of legacy data

CIDEON Import PDM

for the replacement of engineering data after having been processed by external service providers

makes the transparent operations with SAP PLM possible from within the CAD system. Since then we have worked very closely with the sister companies CIDEON Software und CIDEON Systems“, explained Dirk Walther.

Plant layout is next

Only a few months ago, the MicroStation users in the plant design group were loading their data into server directories and maintaining them using Windows Explorer. This meant that every engineer set up new directories independent of others every time he began a new design or variant. “This led to large amounts of redundant data and superfluous copies, which were basically useless files. Projects were hidden among the many layers of file directories. It was difficult or even impossible to find documents.“, criticized Christoph Illmer, who was the process and development engineer for the previous daily routine.



In the automated solar module production for solder processes various robots are working together (Picture: ABB Automation)



ABB Project team, from left to right John Winter, Thomas Burghardt, Dirk Walther, Christoph Illmer (Picture: ABB Automation)

IT Management didn't want to see this uncontrolled data storage facility any more. "On the other hand, we had had good experiences with the Inventor Integration in SAP PLM. Since CIDEON can also now offer an interface for the integration to the MicroStation work stations in SAP PLM and since the integration to the Autodesk systems was also a good experience, it was a fairly obvious choice, to engage CIDEON for this step as well", said Illmer.

No modification

ABB wanted to keep the level of effort down and implement the project with as few modifications as possible, in order to reduce effort for future upgrades. Legacy data wouldn't be migrated, and only projects that were either new or absolutely essential would be converted to SAP PLM administration. The effort of organizing all of the legacy data would have been too great. In a meeting prior to the start of the project, ABB defined the extensive require-

ments for the ABB plant construction firm to the CIDEON Software experts (listed below). Their focus was on the existing and established Autodesk systems integration. CIDEON was able to accommodate all requirements, since the Inventor and MicroStation interfaces had the same range of functions.

For the migration of selected legacy data the CIDEON Tool "CAD Migrator for SAP PLM" was to be used. This would carry out the automated process of replacing the title blocks, for example. ABB acquired the "CIDEON

ABB Robotics

is a division of ABB Automation GmbH in Friedberg, Germany and a leading supplier of industrial robots and robot software and modular manufacturing cells. The organization offers services for a broad range of applications in automation.

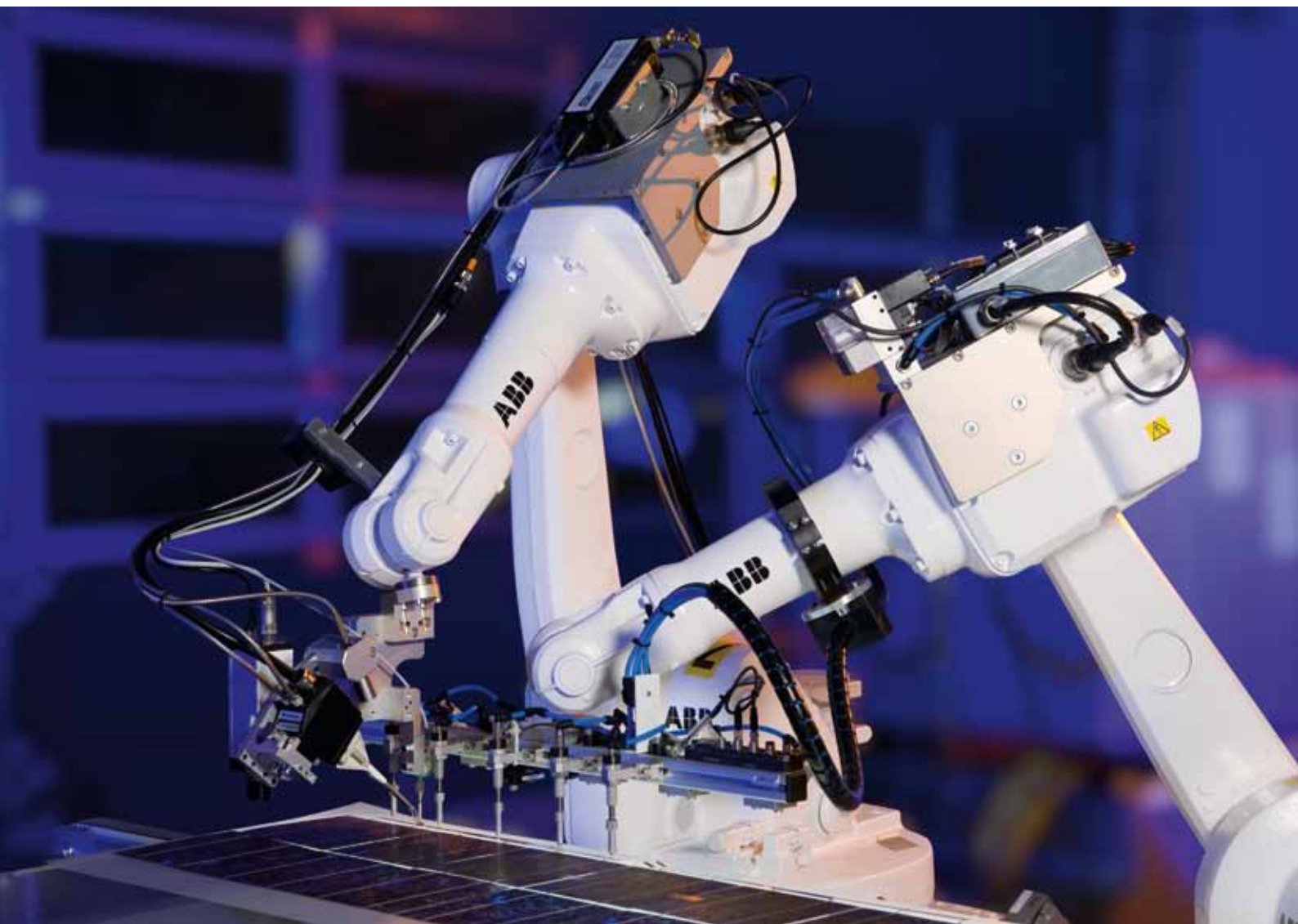
Import PDM“ software tool in order to import as well as re-import engineering data after it had been processed by external service providers.

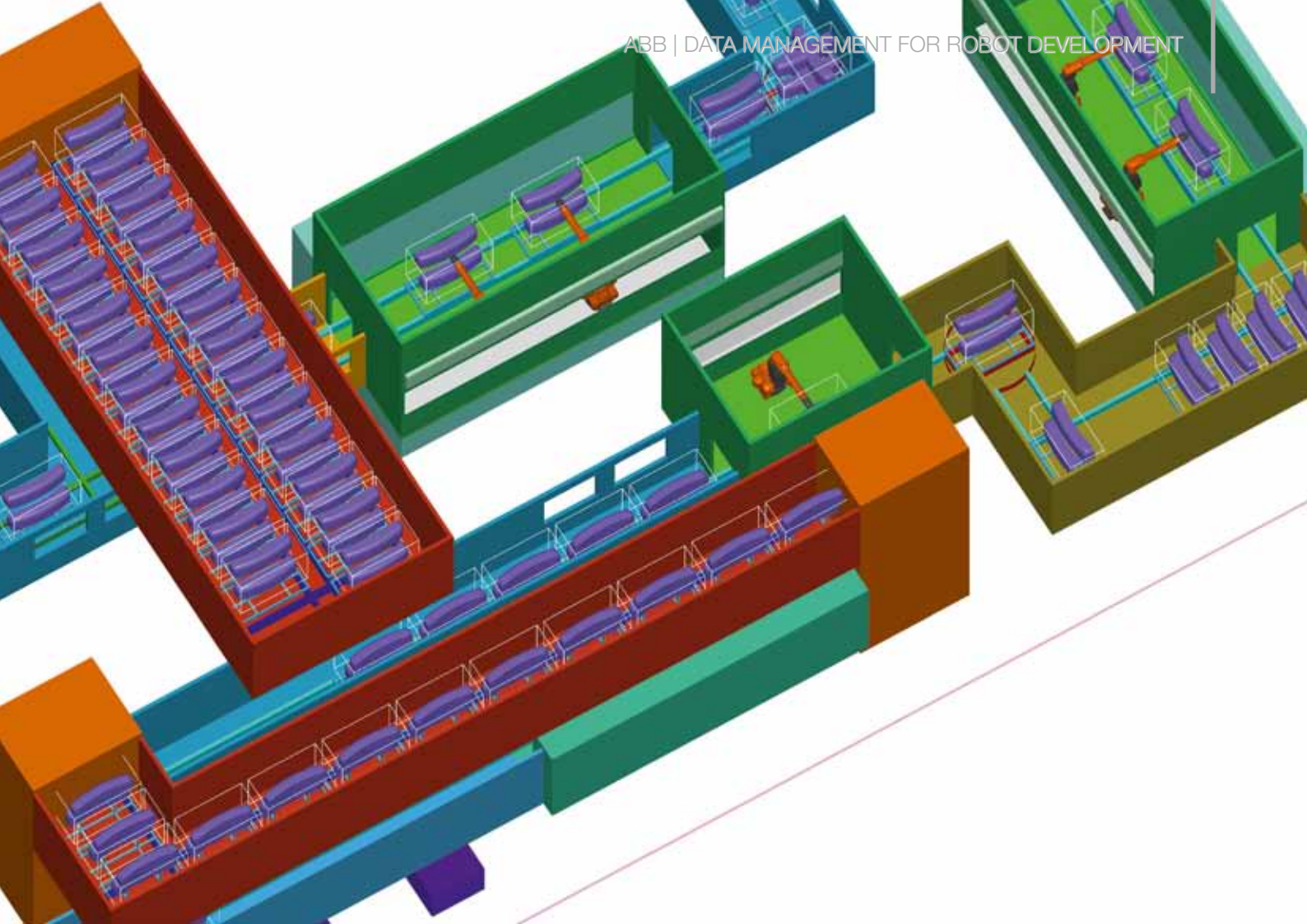
All expectations fulfilled

“The preparation effort was minimal. It was comprised principally of defining and standardizing the title block information of our documents and data“, explained Christoph Illmer, the project leader. “The implementation, definition of the title block data fields and the delivery of the linkage by a CIDEON Software specialist required only three days. This was followed by a 9 day test phase with subsequent acceptance in August 2008. A few open points were fixed by CIDEON with the application of a Service-Pack in October. Since then the solution has been in production.

Our wishes were completely fulfilled. Admittedly we didn't expect it any other way.“

An active exchange of experience and information as well as routine update training has strengthened the project partners' relationship over the last few years. “We not only obtain software products from CIDEON, but also support and Hotline services. This partner's competence in the SAP integration, which has a strategic importance for us, joins us together.“, explained Dirk Walther. “The linkage of the CAD Systems with SAP PLM has become indispensable. It controls our processes in the engineering department, assists in the prevention of errors, ensures the quality of our work and saves us from a lot of lost time due to long searches or even loss of data. The integration of MicroStation users in SAP PLM was the last missing piece of the puzzle in our data management“.





Facility for the coating bumpers in two steps, primer and finish, and drying facility (Picture: ABB Automation)

ABB Automation requirements for the SAP PLM Integration for MicroStation

- Avoidance of redundant data
- Common title blocks, also for documents which originate in external offices
- Avoidance of data loss due to being stored locally, without central security
- Convenient operation with SAP PLM from within MicroStation
- Dependable versioning
- Assignment of changes to agent
- Access to data for all entitled personnel in the company
- Controlled and documented procedures for testing and approvals
- Ability to lock data when editing (Check-in, Check-out)

- Minimization of time required for searches
- Security for revisions, only correct and approved data may be distributed
- Secure and controlled integration with the external partner

At a glance



Company:	ABB Automation GmbH, Friedberg (Germany), Robotics Division
Challenge:	Creation of integrated product data management
Solution:	SAP PLM Integration for MicroStation by CIDEON
Benefits:	Prevention of redundant data and loss of data, control of the engineering processes
CIDEON Services:	SAP PLM Integration for MicroStation, implementation, adaptations