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With "CADagent", Rieber the Reutlingen-based specialist in canteen production optimized its order processing



by Arne Gaiser

R/3 meets AutoCAD

The software integration of SAP R/3 and CAD system "AutoCAD" means more efficient order processing for Rieber, the Reutlingen-based canteen manufacturer and forming specialist. "CADagent" is the integration tool in use customized to Rieber's requirements. Even without detailed R/3 knowledge, employees are now able to access customer orders, order items, materials, object drawings, and documents.



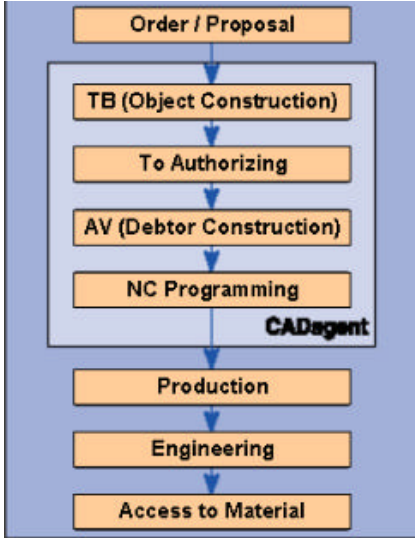
A smooth-running data flow is an essential requirement for an efficient order processing, declares Herbert Roos, Head of Technical IT / CAD of Reutlingen-based canteen manufacturer and sheet metal specialist Rieber. He states, that it was important to seamlessly integrate CAD workplaces into the company-wide IT landscape. Basic requirements in Reutlingen included the complete management of all model data in the "SAP Vault", and a CAD interface widely "invisible"; and all this without an additional data management. Moreover, the system was to provide an integrated view on customer order data. An easy-to-use graphical user interface should provide any employee with information access to customer orders, customer order items, material and reference documents. „No R/3 knowledge should be required for users to work with the system," endorses Matthias Schlapp, Head of IT at Rieber.

A standard software meeting these requirements was not available on the market. Thus, Rieber mandated DSC Software AG to develop and realize such a solution. Rieber came to know that the Karlsruhe-based software firm had been successful in planning and implementing a great number of customized solutions for engineering companies, and, moreover, has been known for its expertise in integrating CAD and ERP. DSC was mandated to engineer and realize an AutoCAD –

R/3 interface using its in-house solution "CADagent" (see Textbox).

Swabian Quality

The Reutlingen-based Rieber GmbH & Co KG with a company history of three quarters of a century plans and installs facilities for pool catering, and food distribution facilities for hospitals and social institutions. Rieber sees itself as one of the market leaders in the area of pool catering in Germany. Feature of this business area is customized design and installation. Moreover, in home appliances and stainless steel contractor parts, Rieber's focus is on batch production. The Swabian company with a long standing tradition has approximately 900 employees at several locations representing the various organizational and manufacturing business fields.



How it all started...

Before introducing R/3, all commercial data, such as material master data, print lists, and invoice accounts were stored in the host-based application system "Miacs" of Bull. With the beginning 1990s, the CAD system AutoCAD was introduced for engineering and development, and integrated with a drawing management system based on an Informix database. To integrate engineering and business management, the next step involved building a technical information system (TIS). It allowed both, to link material master data with documents, and orders. The system provided folders for customers, customer orders, and material.



In 1997, R/3 was introduced and AutoCAD switched from DOS to Win-

dows basis. Says Matthias Schlapp: "With the introduction of R/3, it soon became obvious that TIS won't have a future". The Wall-dorf product was able to avoid multiple recording and maintaining customer related data in several separate systems. Today, bills of material (BOM's) and customer orders are managed in R/3 only. Also copying and distributing drawings is not a topic anymore. Today, the field sales force has access to all customer order-related documents, and is able to plot drawings.

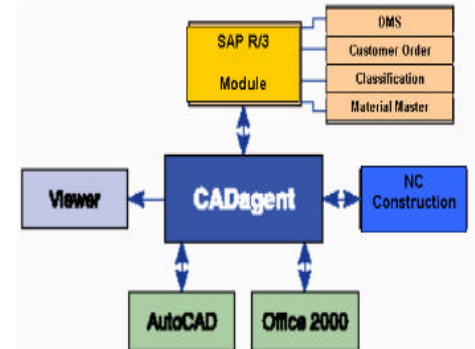
"It was important for us that CAD workplaces seamlessly integrate into the company-wide IT landscape".

Herbert Roos, Head Technical IT / CAD

Rieber had comprehensive ideas of how their new integration and operating software was to meet the requirements. The system was to integrate AutoCAD and Microsoft Office into R/3. This to securely manage and recover documents, and link them with SAP objects, such as materials, debtors, customer orders, and customer order items. The interface was also to efficiently support typical processes in object planning, i.e. change, version and revision management.

Moreover, interaction with R/3 should be implemented by an easy-to-use user interface. Linked tasks were to be automated, and PDM functions of R/3 to be used without detailed knowledge of SAP's ERP system. The requirements were compiled, and DSC set out functional and requirement specifications. In spring of 1999, the solution CAD-agent was installed and customized to Rieber's R/3 system. After a short period of introducing and testing, CADagent became operative in mid-1999. DSC provided Rieber not only with its developing but also consulting skills. A concept was developed to use R/3 standard functions, such as DMS and classification. Consulting covered definition and documentation of the

workflow, and determining specific requirements.



...and today's situation

The tool CADagent installed at Rieber integrates CAD and SAP objects, and is able to automate and mesh, and thus considerably stabilize processes. Declares IT specialist Herbert Roos: "Many steps and mouse clicks were necessary to create a document in R/3".

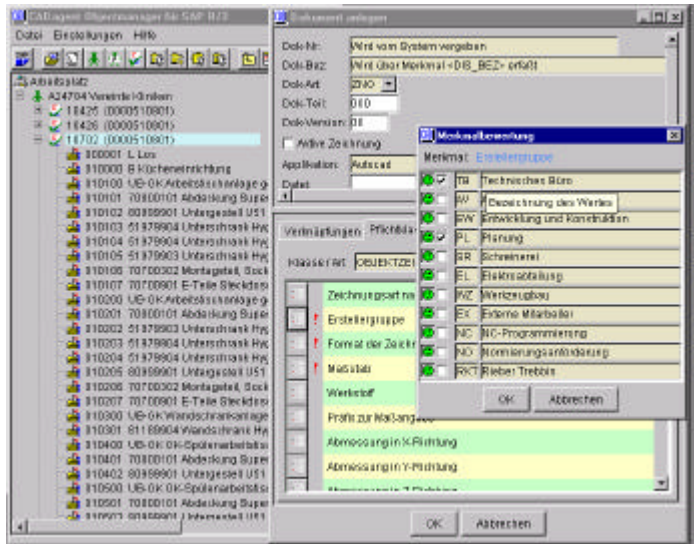


Today, supported by an efficient graphical user interface, different users are able to record, edit and save documents; easy and safe. In one step, a document is comfortably linked to a customer, a customer order, or a customer order item. And not irrelevant: quick access to and availability of customer related information is responsible for a growing user acceptance. CADagent today is an essential part of Rieber's company IT landscape, also able to integrate developed in-house application systems.

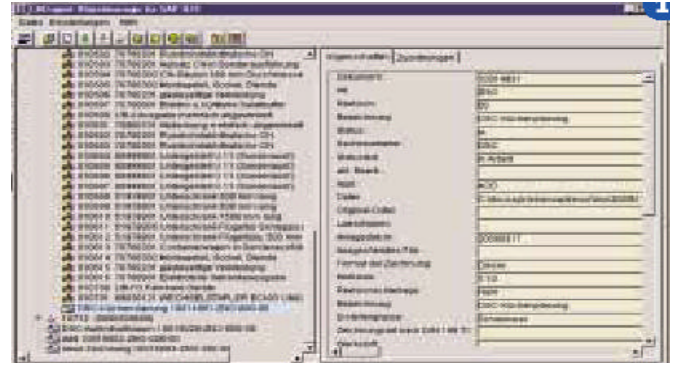
Information Turntable for R/3 Objects

The tool "CADagent" employed at

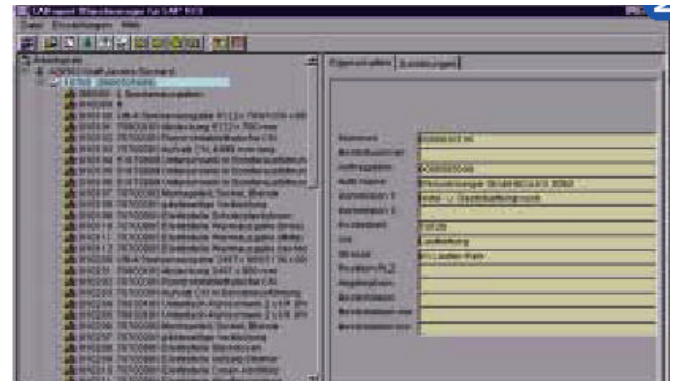
Rieber principally presents a graphical user interface managing different system objects, such as in a CAD system, "Word", or in a NC program. Two windows serve for displaying objects stored in R/3: in a tree view, the left window shows objects and their links to other SAP objects, the right window displays information on properties and link relations of the object selected in the browser. Properties represent the SAP object's attribute values in the document info record, and material master. Editing starts with menu item "Find Document". Search criteria, for example, include customer, customer order, document class, or material characteristics. On selecting "Find Document by Debtor" hits are displayed by customer number, or by customer's address attributes. Then, the Order bills of material (BOM)-Navigator opens. The Navigator lists all customer orders, documents and drawings related to the customer. Then, opening a customer order displays all related customer order items. At the same time, the right window automatically switches display from customer data to customer order data in form of Order BOM's. The Order BOM presents materials, items, and quantities of the customer order. Then, in the right window, for each individual item of the customer Order BOM characteristics of the document info record and the material master are displayed. For example, BOM item, material number, a text brief, and quantity.



Specific manipulation options exist for each object. A selected object, for example a AutoCAD drawing, or a Word document, is editable in its original application.



Moreover, with CADagent new documents can be created in R/3. Depending on document type selected, the related program opens. For example, when document type "ZNO" is selected application AutoCAD opens, in case of type "ZNW" Word opens. Next to a general description, each document type records specific attributes differentiating between optional and categorial fields.



For example, categorial fields for AutoCAD drawings are authority group, drawing format, measure, and document designation. With these and additional field values from document info records and material masters, the drawing header is automatically completed. The document can be assigned to a customer order item, an order, a customer, or a material. After completing input, R/3 creates a related document info record, and editing is possible in the application selected.

Releasing an AutoCAD drawing automatically creates a HPGL/2 file stored in R/3. Direct printing is possible in CADagent and R/3. Starting last year, a Rieber in-house plot management program was installed that already handled 7,000 plots in the first two months. The program prints or plots all documents related to a customer order via network printer or plotter.

Moreover, CADagent enables viewing of existing but also creating new materials. For a quick view of the more than 70,000 items, materials are displayed in groups, and branching is possible. Thus, the search by using material hierarchies is most efficient.

The Project Partner

DSC Software AG specializes in optimizing processes in sales & marketing, construction and engineering. Based on standard systems, DSC develops individual, made-to-customer solutions to improve workflow, and to integrate engineering systems with EDM/PDM systems and SAP's PLM component of mySAP.com. Next to the interface of 3D-CAD system "Unigraphics" with "R/3 PLM", the Karlsruhe-based firm's product range includes additional standard integration with R/3 for CAD systems "AutoCAD", CADDs, and "Argos", and the Facility Building System "PDMS".

Today, there are 65 AutoCAD users working with the system; mainly at the headquarters in Reutlingen, but also in several locations in Germany, Austria, and Switzerland. CADagent is used in the areas engineering, engineering-to-order, order planning and NC production. R/3 itself manages over 60,000 technical documents. And daily some 150 documents add. Very quick, the integration tool was well received by users. "In my daily work, I wouldn't like to miss CADagent", lauds a user. For example, the system's history management enables sales & marketing to fall back on different states of versions. Which is of advantage, in case the customer decides for an earlier state of planning. Not at least, this increases employee motivation, or, as IT person Roos puts it: "There hasn't been so much quiet and peace around the house".

Achieving objectives faster

Using CADagent, Rieber employees achieve in quickly linking already existing documents into a customer order, and to integrate drawings with customer orders and debtors. Also access to drawings has become considerably quicker and more safe. This due, not least to a rise in the re-use rate of models, and, thus, a decline in engineering time. Moreover, the system is able to efficiently and consistently track customer orders. In addition, CADagent's coherent operation panel was decisive for good user acceptance. Even without detailed knowledge of R/3 selective and directed access to order information is possible.

Outlook

The next steps for Rieber are of organizational nature. The maintenance of the classification system and of characteristics is promoted, to make full-scale use of CADagent's characteristic-based search feature. In particular, the variety of documents is to be categorized into few classes using uniform criteria.

In future, also customer order BOM's will be managed with this tool. Moreover, a definite topic on the agenda is configuration of variants. Objective is to manage configuration of variants in R/3, and to display results in the CAD system.