# Bode GmbH & Co. KG Improves Performance and Customer Satisfaction with Visualization Solution

Bode GmbH & Co. KG
Kassel, Germany
www.bode-kassel.com

**Industry:**
Industrial Manufacturing

**Annual Revenue:**
US$125 million

**Employees:**
1,200

**Oracle Products & Services:**

AutoVue 3D Professional Advanced

**Key Benefits:**

- Enabled employees to view design data—which comes in many formats—without a time-consuming conversion process
- Increased customer satisfaction
- Reduced error ratio during data exchanges by 80%
- Provided technical writers with the ability to access CATIA data directly
- Reduced the time required to embed computer-aided design (CAD) data into technical documentation by half
- Enabled designers to reduce time spent editing data

***"We were convinced that Oracle's AutoVue solution was the right choice for several reasons, including its ease of use, and the vast selection of supported file formats, both in 3D and 2D." – Susanne Behnisch, Manager of Computer-Aided Design (CAD) Systems, Bode GmbH & Co. KG***

As a system supplier for major bus and railway train manufacturers, Bode GmbH & Co. KG serves as a data hub between clients and subcontractors. To facilitate this process, Bode implemented Oracle's AutoVue3D Professional Advanced (previously known as AutoVue SolidModel) to visualize CAD data from third-party applications without prior conversion and conduct visual checks of converted data before they are transmitted. The company has since expanded use of its AutoVue system to other operational areas, such as the technical documentation department.

Bode, a subsidiary of the Munich-based company Schaltbau Holding AG, was founded in 1968 in the city of Kassel, Germany. It is the largest supplier of automatic door systems for coaches and city buses, not only in Germany but throughout all of Europe. Bode services major bus manufacturers such as MAN, EvoBus, VECO (Irisbus), and Volvo Scania, and also exports its door systems in vehicles to non-European countries. The company generates approximately 60% of its revenue from business with major bus manufacturers.

A second line of business, accounting for 30% of the company's total revenue, is the development of door systems for railway trains. In this market, the company had a breakthrough with its pressure-tight doors for the high-speed ICE train. Long-distance trains and the Transrapid, as well as light railway vehicles used in urban and commuter traffic, are equipped with door systems manufactured by Bode. In addition, the company develops and manufactures door fittings for vans produced by companies such as Volkswagen, Mercedes, Ford, Peugeot, Citroën, Renault, and Land Rover.



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While being a long-established Kassel company, Bode followed its clientele into international markets. For a system supplier such as Bode, proximity to customers is indispensable. Through subsidiaries and holdings, Bode has a presence in Greece, Turkey, Poland, China, and other countries—with more than 1,200 employees working for the company worldwide.

## Envisioning a Solution

Competition in the global market is tremendous and requires continuous process improvements and efficient computer-aided design (CAD) tools to reduce development times and costs. Bode designs its new door systems entirely in Computer-Aided Three-Dimensional Interactive Application (CATIA) V5, which is installed on 40 workstations in Kassel. The company's ISD HiCAD 2D system installation is merely used for maintaining existing products and performing minor modifications, explained Susanne Behnisch, who is in charge of CAD systems at Bode. The company also operates a few CATIA V4 workstations because many of Bode's automobile clients still request CAD data in this format.

Design Engineers at Bode receive model data and drawing components, such as locks and seals, in many formats—including PRO/Engineer, SolidWorks, Unigraphics (NX), and AutoCAD DWG (drawing) or DXF (drawing exchange format). However, they lacked the ability to natively view the data without having to convert the files. For this reason, the company decided to introduce AutoVue 3D Professional Advanced.

## Utility and Flexibility

Bode quickly realized that it could do more with its AutoVue solution than visualize data delivered by outside suppliers. Bode's AutoVue users often convert their CATIA drawings into the standard for the exchange of product model data (STEP) format when their clients or suppliers cannot read the CATIA files. The conversion process can compromise data fidelity, leading to costly errors and additional work for all parties. To confirm to recipients of converted files how the original data looks, designers generate a display in AutoVue and mail it together with the converted data. With AutoVue Electro-Mechanical Professional, Bode has reduced the error ratio during data exchanges by 80%, while customer satisfaction has risen accordingly.



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"On-site presentation of CAD assemblies on customers' premises is a future initiative for our AutoVue system," Behnisch said. "With AutoVue installed on their laptops, the sales representatives could directly present the CATIA data to the customers and, if required, take measurements, as well."

## Moving Beyond Engineering

Bode is also using AutoVue to accelerate the technical documentation processes. Before installing its AutoVue solution, a technical writer needed a CATIA license or had to depend on the designers to convert the CAD data into a neutral format for inclusion into assembly instructions or product specifications. With AutoVue, a technical writer has the ability to access CATIA data directly, create exploded views or generate sections, create measurement markups, and save images, which can be directly embedded from an image processing program into text documents.

AutoVue 3D Professional Advanced can read native geometry with its product structures, enabling the user to display or hide certain components. "This was a real bonus for the users," Behnisch said. "Using the AutoVue system, we have reduced the time required to embed the CAD data into technical documentation by half, not to mention the time savings experienced by the designers. They no longer have to edit their CAD data for documentation purposes. They simply save the files on the server, where others can access them."

Furthermore, Behnisch sees considerable potential for use of AutoVue 3D Professional Advanced in the assembly environment.

"For many tasks, we do not need a fully functional CATIA workplace. The employees in charge of checking and releasing drawings, for example, could easily perform these processes with AutoVue," Behnisch said.

During Bode's next CAD installation upgrade, the company will consider replacing some CAD licenses with viewing licenses, which would mean major cost savings. In fact, the cost of AutoVue constitutes only a fraction of the cost of a CAD workstation. Even for digital mockup (DMU), AutoVue would be a more cost-effective alternative compared to the equivalent CATIA tools, especially when it comes to examining the interaction of CAD data from different sources.



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## Why Oracle?

Before choosing a visualization application, Bode took a close look at three different solutions.

"We were convinced that Oracle's AutoVue solution was the right choice for several reasons, including its ease of use, and the vast selection of supported file formats, both in 3D and 2D," Behnisch said. The deciding factor for us was that you could read native data directly, as if you were sitting at a CATIA workstation. The other viewers converted the data into their own file formats first. Moreover, the quality of the display in AutoVue proved to be considerably better."

Usability was also a consideration. Employees at Bode learned how to use the intuitive AutoVue solution from Oracle in no time, according to Behnisch.

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