



“Several thousand features and several hundred measuring sheets for every vehicle type...”



## Development with DaimlerChrysler

Christina Scheible



The πWeb quality data management system with the QDB quality database for process monitoring resulted from a development partnership and a joint project. The DaimlerChrysler factory in Sindelfingen, Germany, the DaimlerChrysler research center in Ulm, Excellent Solutions in Ulm and the Carl Zeiss Innovation Center for Metrology in Dresden all took part in this development. What experience did DaimlerChrysler gain and what future developments are in the pipeline? These questions are answered in the following interview.

**CZ IMT:** *What expectations and goals did you have for the joint project?*

**Ebner:** With πWeb, we expect to achieve a considerable increase in efficiency in the preparation of the measuring reports and the subsequent changemanagement. We also anticipate more functionality, particularly in the statistics area or in the documentation of the history.

**Lelke:** We demanded easy operation of the software: it must be easy to learn – no extensive training should be required.

**Knauer:** Another goal was the elimination of errors in the measuring reports. The former system was dependent on a large amount of manual input. With the new approach, we saved ourselves this effort by ensuring that we could use computer-generated and therefore almost error-free data. This means an IT-assisted process from the CAD system to the evaluation system without any disruption caused by different media, formats, etc.

**CZ IMT:** *What circumstances prompted you to play your part in driving forward this development?*

**Knauer:** Our former system was no longer available and as we wanted to keep up with new technology, we launched a new development. After receiving offers from several suppliers, we opted for a partnership with Carl Zeiss.

**CZ IMT:** *What technological benefits does πWeb have for you?*

### Info

We spoke with the following employees from the DaimlerChrysler factory in Sindelfingen:

- **Bernd Ebner** from the metrology department, responsible for the body-in-white measurement planning and preparation team
- **Andreas Lelke**, responsible for the measurement planning of new models
- **Dr. Martin Knauer** from the metrology department, responsible for serial measuring technology in the body-in-white area
- **Hans Ramsperger** from the production and materials technology department, responsible for the introduction of new materials in the factory
- **Helmut Ludt** from the metrology department, responsible for the metrology team for finished vehicles and assembly components

**Ramsperger:** As far as the technology is concerned, I simply see the modular software concept with modern standards. A further important aspect is standardized interfaces like the standard interface between the database and the application software, a new graphics format, MIBA standard, and uniform formats for the test reports.

**Ebner:** Due to the architecture of the system that clearly separates the QDB database and the πWeb application, we will be able to access our database via an open interface with further applications in the future. For example, in order to recognize aspects like trends or outliers using analysis tools, the QDB offers the possibility of simply



**Fig. 1:** Mr. Fillinger, DaimlerChrysler, preparing a πWeb report.

connecting additional applications from other manufacturers.

**Knauer:** What we also see as beneficial is the clear separation into three application modules:  $\pi$ Web REPORTER,  $\pi$ Web PLANNER and  $\pi$ Web MONITOR. This allows a different approach to the system depending on the purpose of the application or operation.

**CZ IMT:** Can you give us a few examples to show where you can achieve an increase in efficiency and quality through  $\pi$ Web?

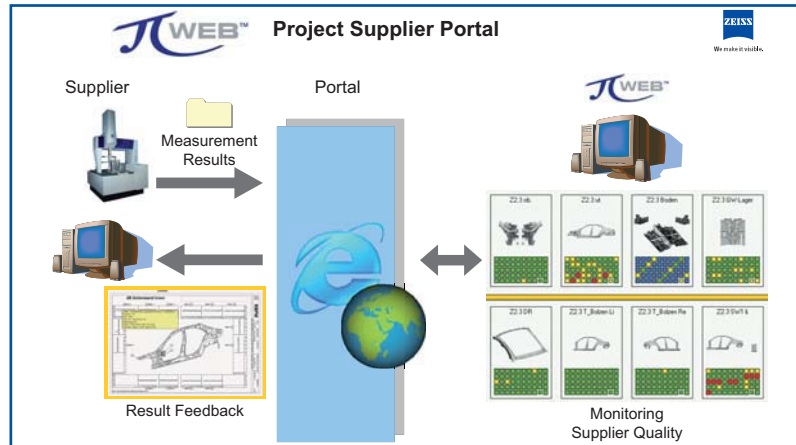
**Ebner:** Per car body, we examine over a thousand features in the serial process and several hundred measuring sheets per vehicle type: this shows the effort involved in integrating and visualizing the data securely in the database. Therefore, a system tailored to our needs allows us to open up major rationalization potential.

A further example: as part of a pilot application, an employee who had had no official training but only a short briefing was tasked with the preparation of reports. Within a short time, he was able to do this without errors. This impressively verifies that we can work very quickly and efficiently with relatively little training.

**CZ IMT:** What are the benefits for the user?

**Ramsperger:** From the operation point of view, it is very important for the users to be incorporated in the development to ensure that their requirements – no matter how trivial they may seem – can be implemented as quickly as possible. This may mean positioning the control panel in the right place or an action that can be performed with a simple key combination. This all saves a lot of time.

**Leike:** A major benefit is the automatic links of the features



**Fig. 2:** Schematic illustration of the DaimlerChrysler supplier portal. Using a web portal, the supplier can enter his inspection data in the DaimlerChrysler database.

on the measuring sheets. In other words, I no longer make any errors there! The use of the MIBA graphics from our CATIA CAD system is also a big advantage that will definitely provide us with major time and quality benefits. Here, it is possible to generate an automatic pointer from the measuring box to the correct position on the image of the measured component.

**CZ IMT:** What goals would DaimlerChrysler like to achieve with regard to the standardization of quality data management and process inspection?

**Ludt:** The integration of suppliers into the inspection and documentation world of the automobile manufacturers is the logical consequence of our current division of labor. The opportunities offered by Internet-based collaboration in the field of inspection technology are barely exploited today.

The Internet gives us a state-of-the-art possibility of networking our inspection and error management processes. In this way, errors can be recognized preventively, i.e. before defective components become noticeable on the production line, and eliminated. This provides us with additional leverage to further

reduce the time and effort required for reworking in our process chains.

**CZ IMT:** What will tomorrow's factory look like and what contribution can a system like  $\pi$ Web make?

**Knauer:** Needless to say, future production will be characterized by higher efficiency and faster processes. The fact that the start of serial production has to be implemented at increasingly shorter time intervals has to be taken into account in our technical systems, i.e. measuring preparations lasting several months will definitely be a thing of the past!

**Ebner:** One idea is to have a quality database in which all information about the geometry of the vehicle is inserted. Our first goal is to enter car body and assembly component data from our own production and from suppliers together in one database. Displaying this data using the same systematic approach and in accordance with a uniform standard is a major step in the right direction.

**CZ IMT:** Thank you for the interview.

**Christina Scheible**  
Product Manager  $\pi$ Web, Carl Zeiss IMT GmbH