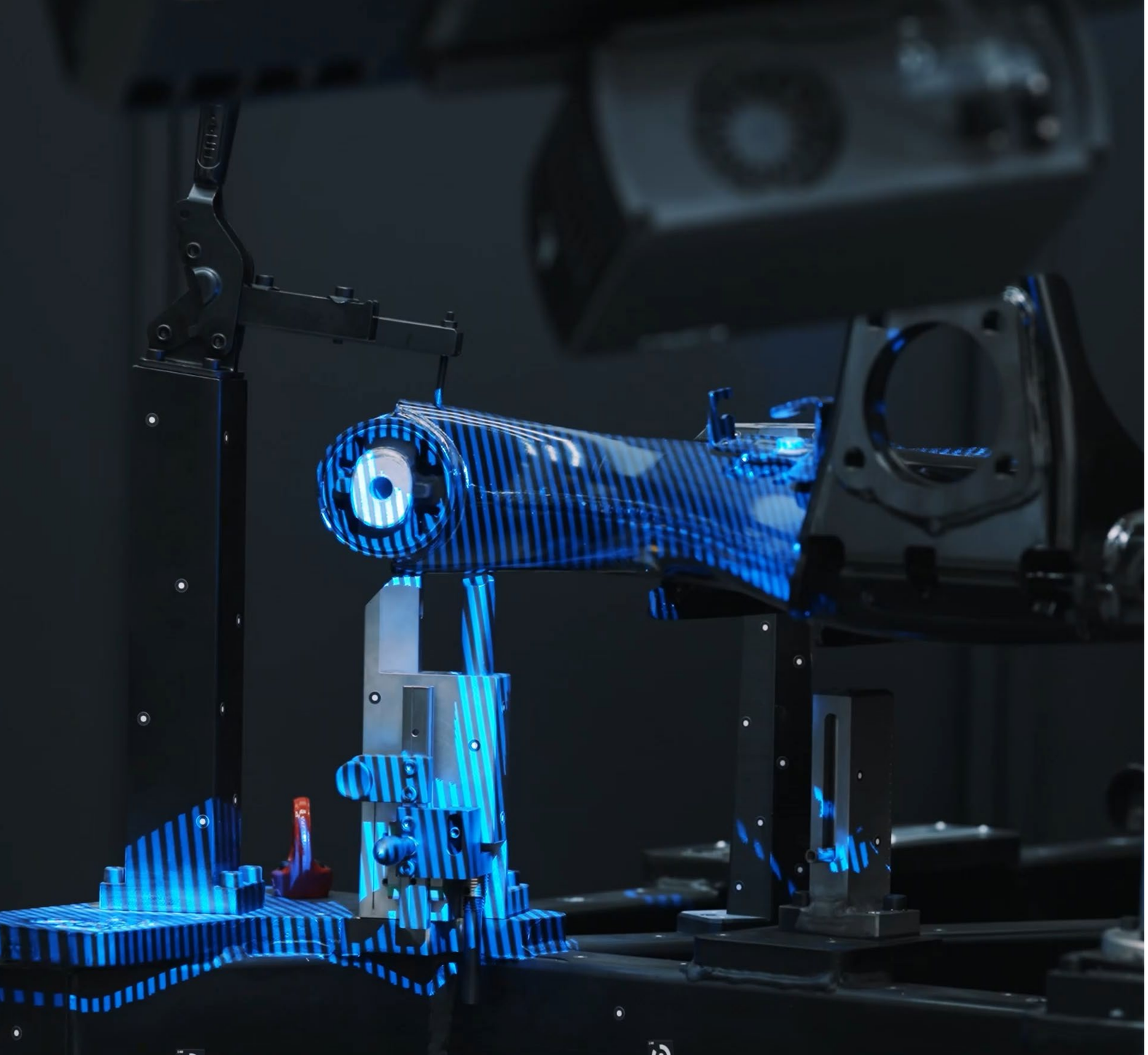


SUCCESS STORY

BENTELER
Quality Assurance & Real-Time Analyses Across Sites

LOCATION
Paderborn, Germany

ZEISS SYSTEM
ZEISS ScanBox 5120

SOFTWARE
ZEISS INSPECT, ZEISS PiWeb

COMPANY'S FIELD OF WORK
Automotive

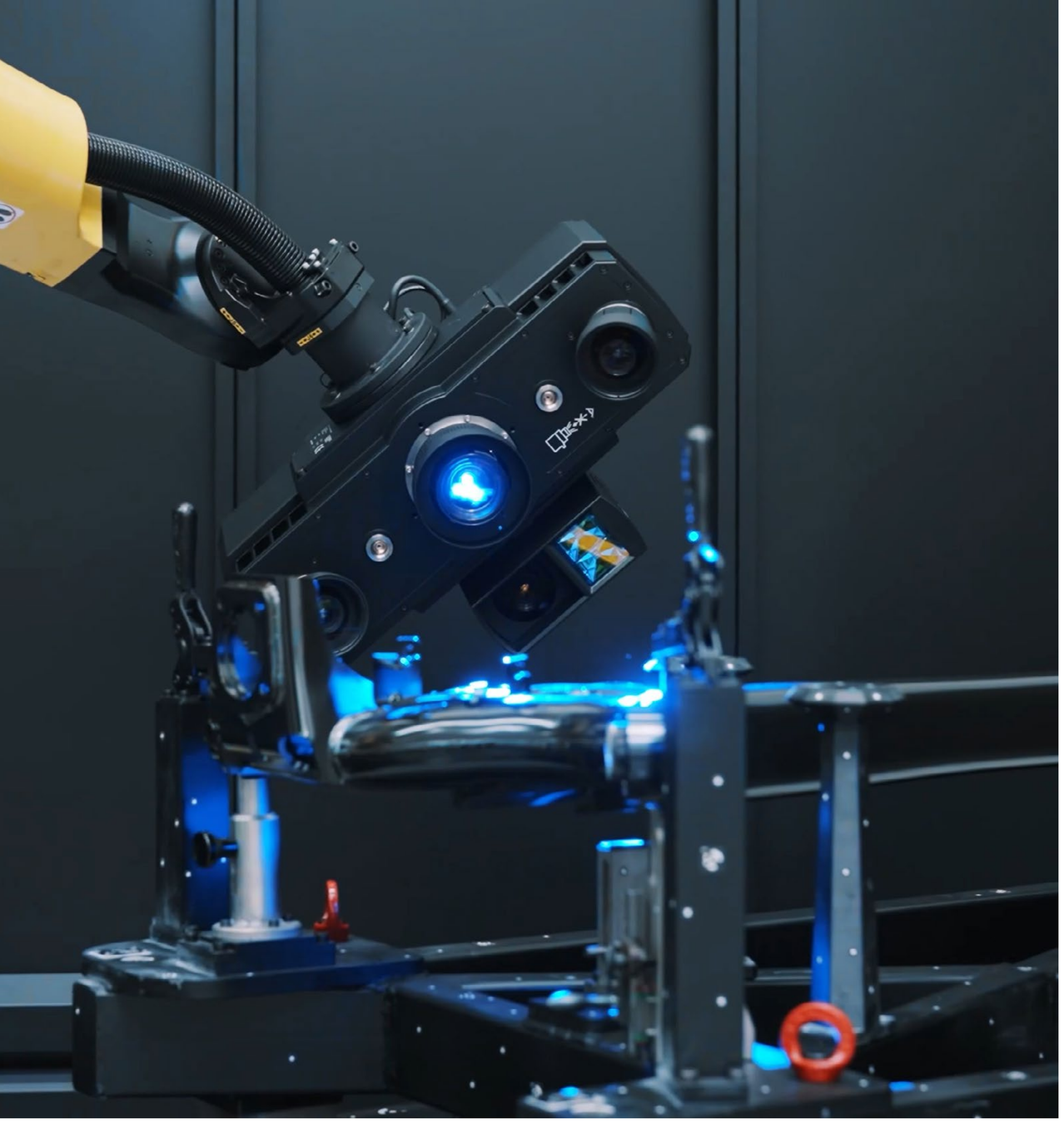
BENTELER drives the future of mobility

The automotive supplier BENTELER manufactures parts and modules for chassis, car bodies, engine and exhaust systems as well as e-mobility solutions. With 20,000 employees and around 70 plants in more than 20 countries, the automotive division of the company produces tailored solutions for its customers.

Its product portfolio includes chassis parts, control arms and structural components such as bumper systems which are all subjected to strict safety inspections on a daily basis. “A B-pillar must last in the event of a crash. For this reason, we never compromise on quality,” Eduard Reuswich, Continuous Improvement Manager at BENTELER explains.

For quality assurance, the company relies on optical 3D metrology by ZEISS. At its Talle site in Paderborn, Germany, parts are first digitized in a ZEISS ScanBox optical measuring machine and then visualized and analyzed with the ZEISS INSPECT software. To enable multi-site monitoring, the Paderborn plant manages the implementation of ScanBox systems at other sites: Measuring and inspection plans are centrally created and then rolled out. The real-time analysis of the measuring data created worldwide is carried out by the ZEISS PiWeb reporting software.

Watch the video



Humans and machines improve efficiency and safety

To ensure a smooth production process, the automotive supplier relies on automated processes. The first robot was introduced in 1975 – currently, the Talle site owns 450. On the other side, 800 employees are in charge of operating the forming machines.

The smart cross-linkage of humans and machines as well as industrial processes is decisive for the long-term success of the company. Another key to success is product quality. To assure quality at an early stage, the Paderborn plant operates three ScanBox systems.

“Some of our parts are hot-formed, some are welded. In the end, they all have to pass the measuring machine,” Michael Lindenblatt, Head of Metrology at BENTELER explains. Inspecting parts with the optical measuring machine makes it possible to quickly identify deviations and, consequently, initiate the relevant corrective actions within the production line.

The precise ATOS sensors measure complete surfaces, including hole patterns, trimmings and other typical sheet metal characteristics, within a few minutes. Afterwards, the results are evaluated by the ZEISS INSPECT inspection software. This evaluation includes comparing full-field deviations between actual data and the CAD model.

Effective quality assurance worldwide: reliable data and quick implementation

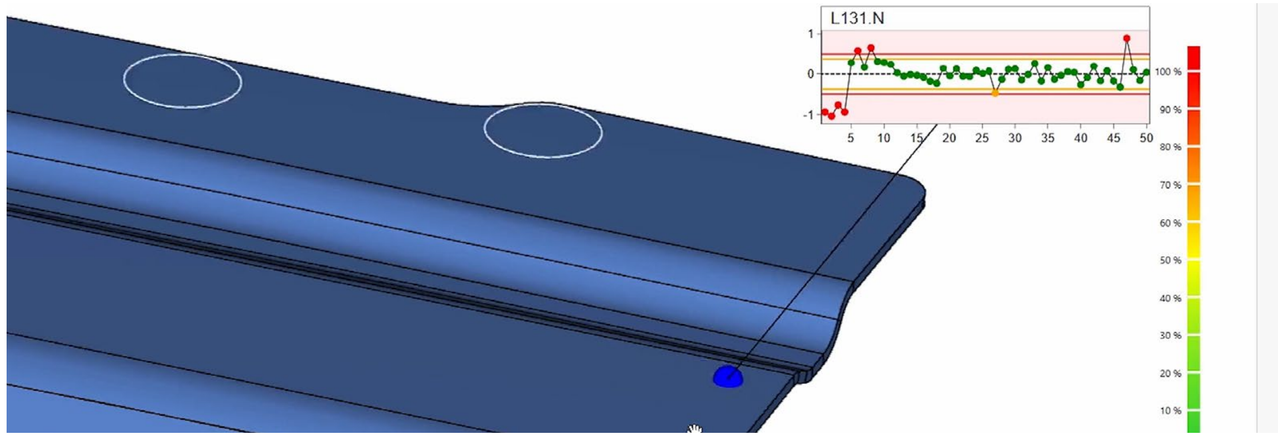
Multi-site quality assurance is a special characteristic of BENTELER: The possibility to create prototypes, fixtures and programs in Paderborn and train employees locally in optical measuring systems with the respective parts significantly improves the implementation at other sites.

The plug-and-play systems can be used at other sites without any major setup efforts – for example at the production site in Kariega, South Africa. Lately, the plant received a ZEISS ScanBox to inspect structural components. “We programmed everything here and then shipped the system including the components over there. All project managers and quality assurance employees love it,” Sebastian Kuhlenkamp, Global Metrology Expert at BENTELER explains.

The standardized reporting with ZEISS PiWeb is another advantage. Due to the software, measuring results from the other plants can be directly connected with decisions at the Paderborn site. This way, Michael Lindenblatt’s team is able to efficiently track production quality worldwide.

Employees at other production sites also benefit from the software: “The provision of live data helps them monitor the quality of their products, take immediate action and be fully informed at all times,” Michael Lindenblatt says. The simple filtering, sorting and grouping options of ZEISS PiWeb save time and make it possible to create tailored inspection protocols. Next to statistics with quality information, the software also creates interactive reports that provide access to relevant and fully detailed information and quality data.

ZEISS PiWeb connects measuring results of all production sites and thus guarantees uniform quality standards.



Sebastian Kuhlemkamp, Global Metrology Expert and Michael Lindenblatt, Head of Metrology at BENTELER

ZEISS ScanBox is the established standard

In recent years, BENTELER has continually developed its focus on optical 3D metrology. While the ZEISS ScanBox system has been used mainly for measuring simple sheet metal parts in the past, the automotive supplier now also measures complex parts with the optical measuring machine.

Michael Lindenblatt is very satisfied with this development: “We measure a lot more often now and also obtain more information through the scans. Editing and continuously visualizing these data in ZEISS PiWeb will be a great support both for the entire technology and for us.”

BENTELER
makes it happen

The Automotive business is organized into the two divisions BENTELER Automotive Components and BENTELER Automotive Modules. As development partner for the world's leading automobile manufacturers, we work with around 20,000 employees in more than 20 countries to develop tailored solutions for our customers. Our products include components and modules in the areas of chassis, body, engine and exhaust systems, as well as future technologies such as battery storage systems for electric vehicles.

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Seeing beyond