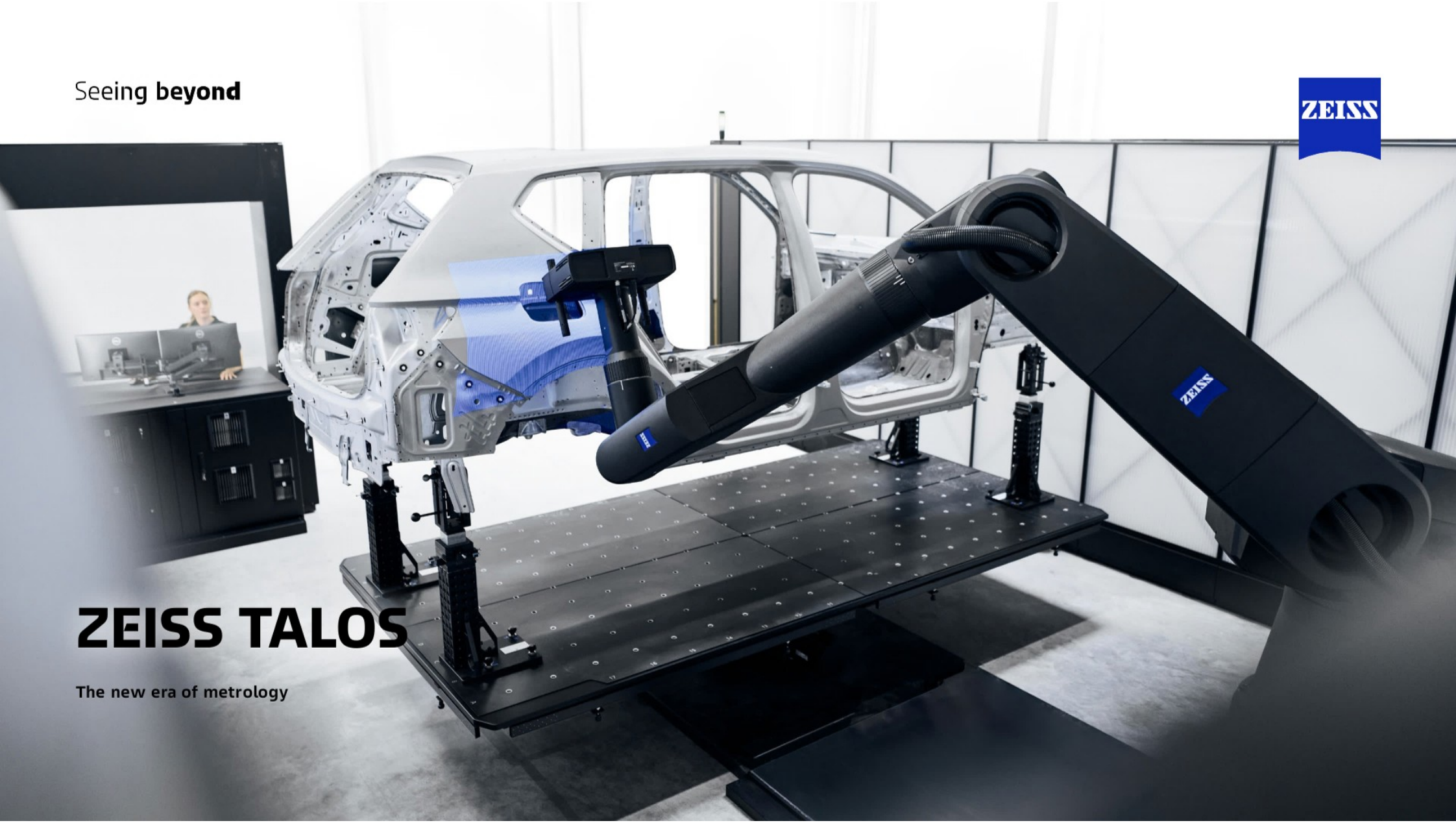
Seeing **beyond**



ZEISS TALOS

The new era of metrology

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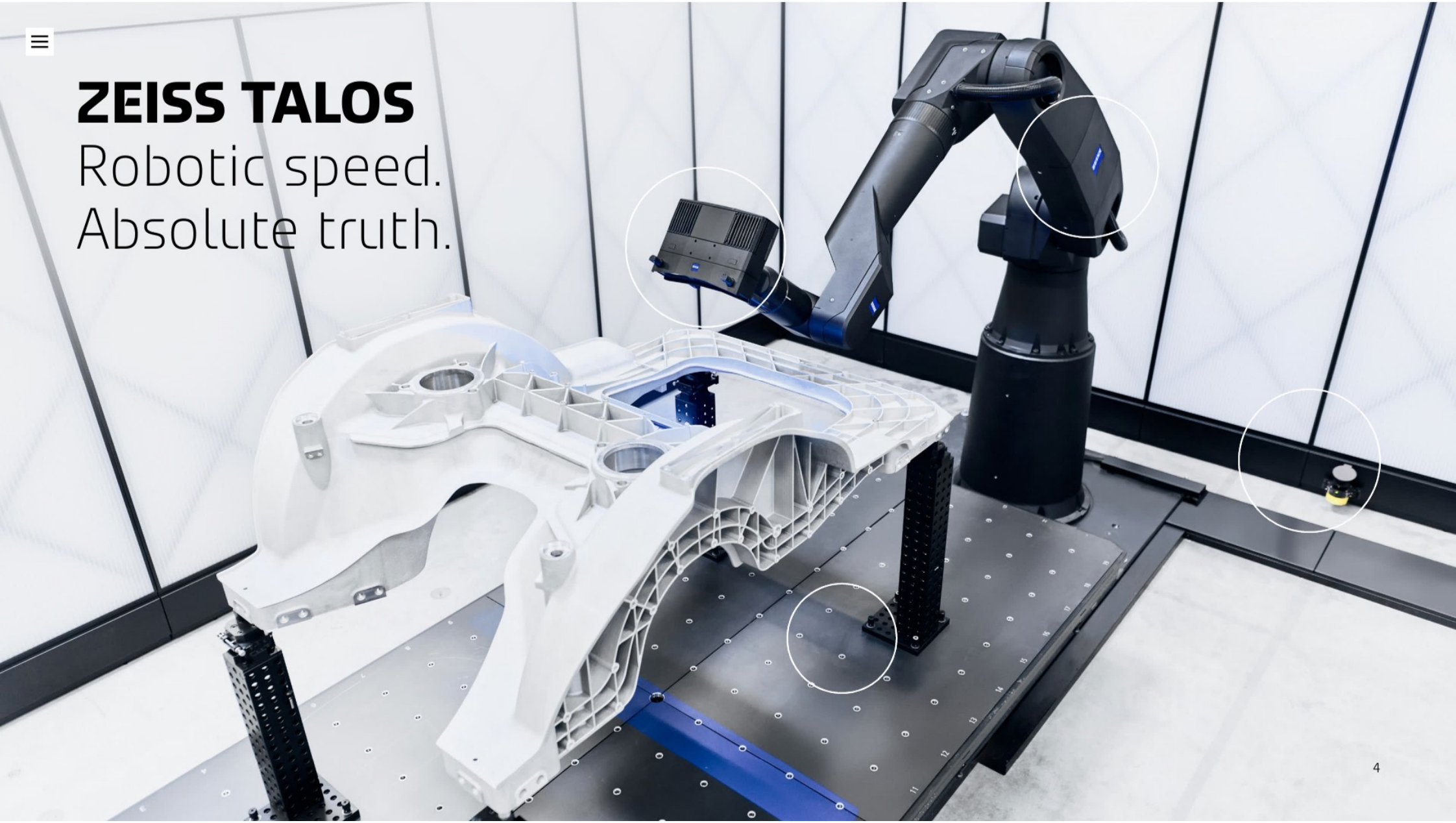
Automated quality assurance in production

Manufacturers of medium-sized and large parts have long had to choose between speed, reach, flexibility, and metrological accuracy. Currently available robots move fast and reach far, but fall short when precision matters. Additional trackers, markers, or reference points are necessary, but they also significantly add complexity. ZEISS TALOS resolves the inherent trade-offs: this new metrology robot brings speed, reach, and absolute accuracy measurement together in one system. At the same time ZEISS TALOS combines full-field measurement of large surfaces with the precise detection of complex features.



ZEISS TALOS

Robotic speed.
Absolute truth.

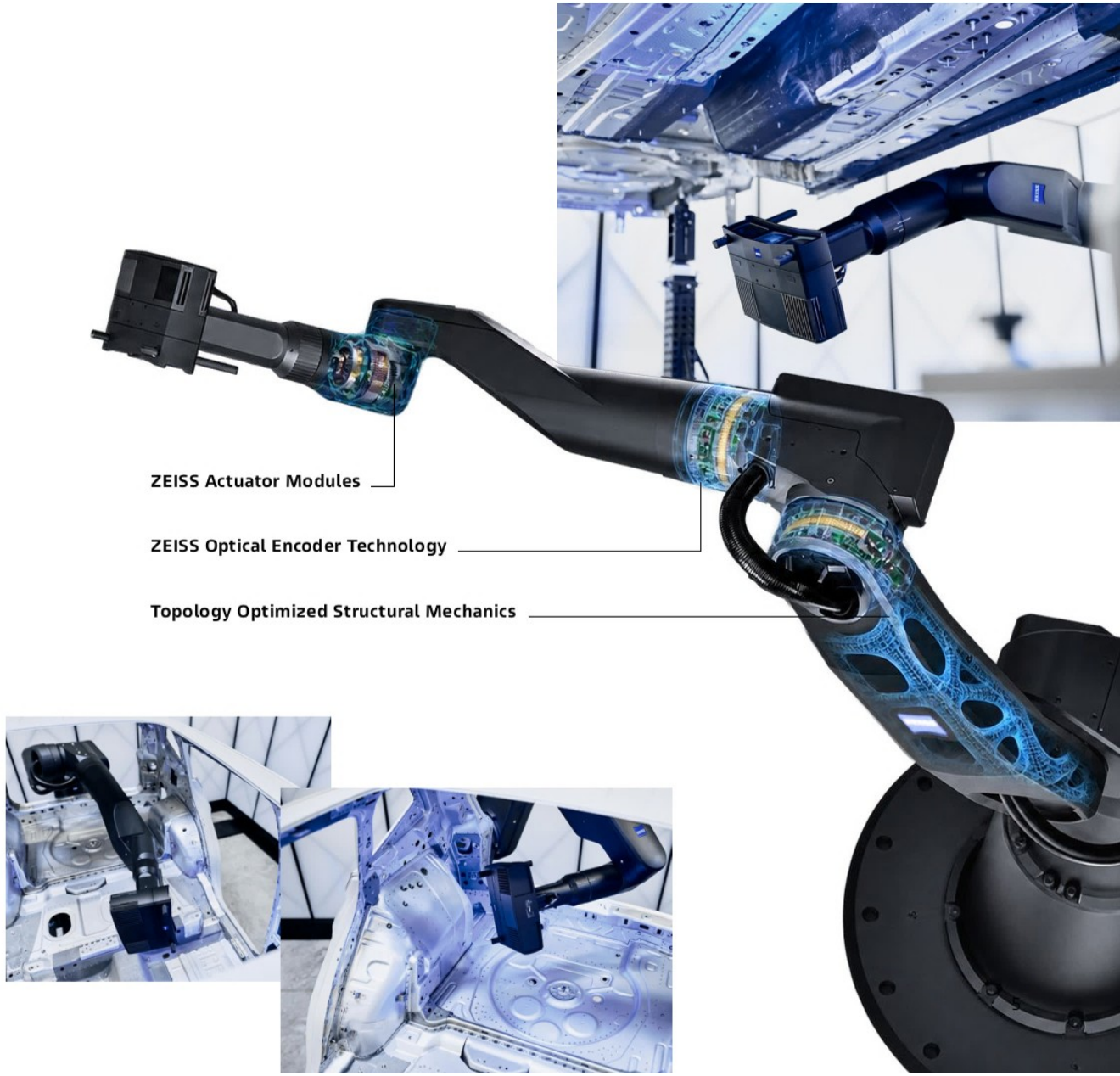


ZEISS TALOS MR

Accurate
metrology robot

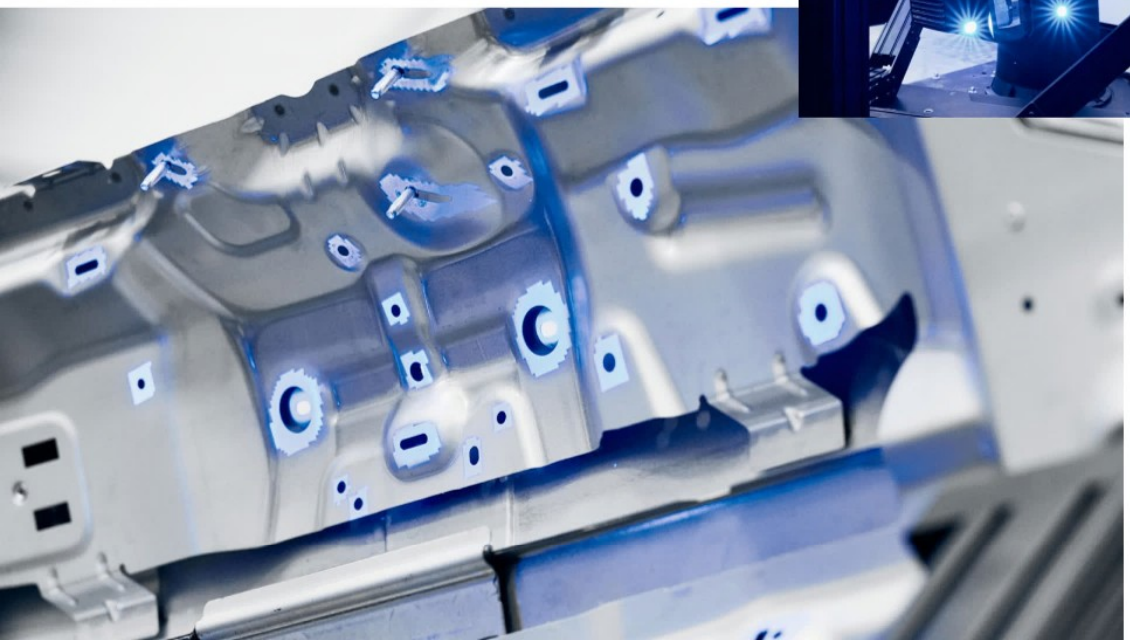
While conventional industrial robots excel in repetitive positioning, repeatability alone does not guarantee accurate measurements. Many metrology tasks require an absolute accuracy below 100 µm – far beyond what standard robots achieve.

To address this challenge, ZEISS dedicated five years to developing an innovative solution. This new system combines metrology-grade accuracy with flexible robot kinematics and a new optical sensor for both full-field surface and precise feature measurements. It delivers **measurement uncertainty below 100 µm at a reach of 3.30 meters** with an average length measurement error of approximately 30 µm.







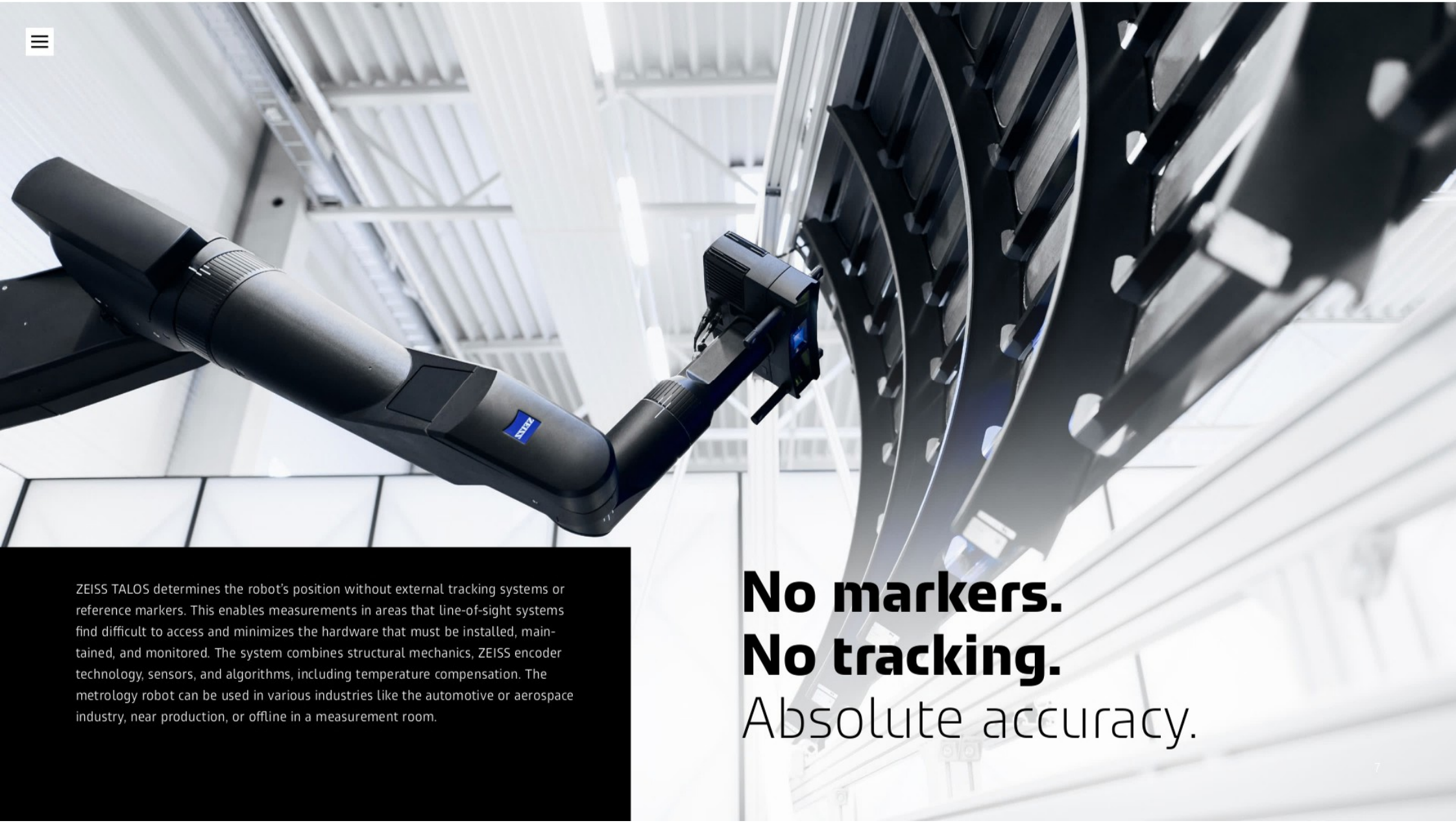


ZEISS TALOS AX

Next-generation sensor

With a 24-megapixel camera resolution, a 100 Hz image capture frequency, or up to 200 Hz with fast scan, a 500 mm-wide measurement volume, and four multi-directional feature flashes, the new sensor ZEISS TALOS AX supports both speed and accuracy.

The compact blue-light sensor digitizes large areas for geometry analysis and digital models while also measuring functional and positional features such as holes, edges, bolts and threads behind sheet metal. The feature flashes illuminate details from various angles, enhancing the reliable recognition of small and complex features crucial for process monitoring. The compact sensor design and the robot's large reach enable accessibility, while feature measurement from a single sensor position can reduce robot movements.



ZEISS TALOS determines the robot's position without external tracking systems or reference markers. This enables measurements in areas that line-of-sight systems find difficult to access and minimizes the hardware that must be installed, maintained, and monitored. The system combines structural mechanics, ZEISS encoder technology, sensors, and algorithms, including temperature compensation. The metrology robot can be used in various industries like the automotive or aerospace industry, near production, or offline in a measurement room.

No markers.
No tracking.
Absolute accuracy.

The virtual measuring room (VMR) is the central control and measurement planning software for all elements of ZEISS TALOS. In the VMR, the real environment is functionally displayed in a simulation. Programming includes the kinematics of the robot paths, the fixture and the measurement plan. Thanks to the VMR, the user can work with the system without requiring specific robot programming skills. All robot movements are simulated and checked for safety before being performed in the actual environment.



Virtual Clamping reduces fixture costs and easily improves measuring processes by converting part-specific fixtures into universal ones. The technology supports the precise clamping of a wide variety of parts – from small to large components made from injection-molded, die-cast, or sheet metal.



Easy operation

ZEISS TALOS the new metrology robot stands out for its ease of use: measurement tasks can be prepared offline based on the CAD model, while ZEISS INSPECT automatically calculates the required measurement positions and robot paths. This significantly reduces the time and effort required to plan new measurement tasks. One-click programming, efficient robot motion, and streamlined setup help increase throughput and enable more efficient use of measurement capacity.

Application

ZEISS TALOS is designed for inspecting parts in various industries.

Automotive



- Complete car bodies
- Hang-on parts and assemblies
- Subassemblies and supplier parts
- Battery trays
- Press parts

Commercial vehicles



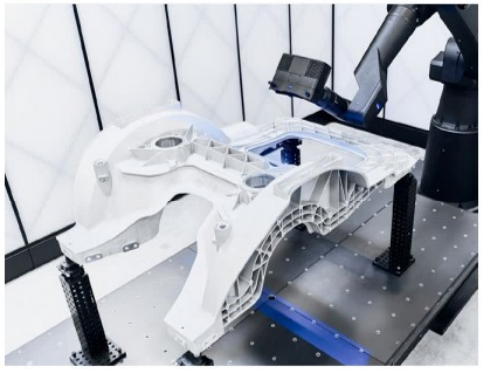
- Truck cabins
- Weld seams and joint geometry
- Structural parts and trim parts
- Commercial-vehicle frames, panels, doors, hatches

Aerospace



- Complete jet engines
- Aerostructures
- Engine components
- Interiors

Metal products



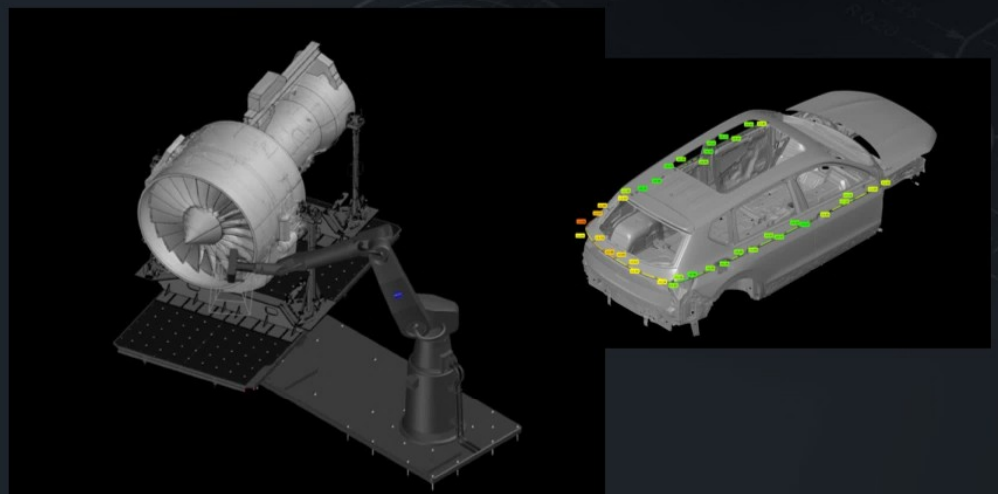
- Gigacasting parts
- Castings rear & front ends
- Lightweight metal structures
- Frame systems

ZEISS INSPECT Optical 3D

The standard for your 3D surface inspection.

Scanning, inspection and reporting with a single source:
ZEISS TALOS comes with the 3D inspection software ZEISS INSPECT. The software manages the control of the metrology robot. The user can import CAD data, create polygon meshes from point clouds and execute 3D inspections.

Learn more





ZEISS TALOS
Technical data

Dimensions	8885 × 6270 × 3100 mm
Max. part size	Ø 5000 mm
Max. part weight	5000 kg
Opening width	4090 mm
Sensor	ZEISS TALOS AX

Customer testimonial

> ZEISS TALOS could bring about a lasting transformation in metrology.

Christian Besel, Head of Geometric Conformity Series Quality, Audi AG





ZEISS Portfolio

CMM



Optical 3D



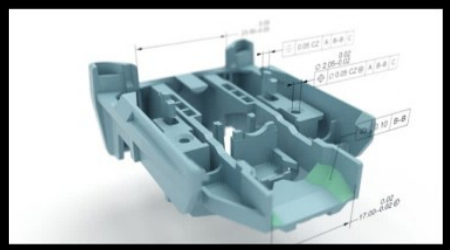
X-Ray



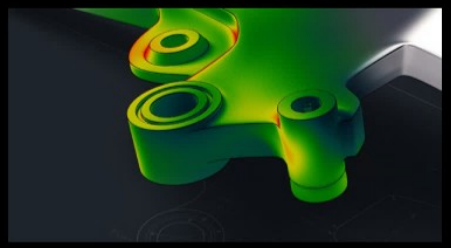
Microscopy



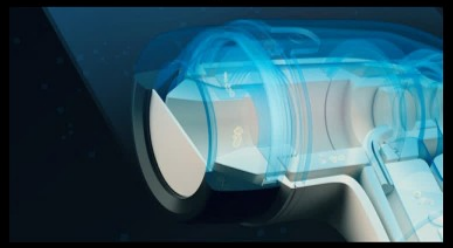
ZEISS CALYPSO



ZEISS INSPECT Optical 3D



ZEISS INSPECT X-Ray



ZEISS ZEN core

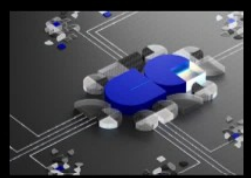




DATA

ZEISS PiWeb scalable reporting and quality management software combines metrology results from different measuring technologies for efficient tracking of production quality. Its powerful features and intuitive templates handle huge amounts of data and provide immediate results.

Read more



METROLOGY HUB

ZEISS CONNECTED QUALITY seamlessly connects your measuring systems, operators and quality data worldwide. The new product family enables completely new dimensions of collaboration! Easily monitor your systems from anywhere, at any time – using a tool of your choice.

Read more

ZEISS **Services and support**

As a comprehensive solutions provider, ZEISS remains at your side independent of the purchase of a measuring system. From measuring services and training to enhanced application support – only ZEISS Industrial Quality Solutions is able to offer you the right expertise at all stages of the product life cycle.

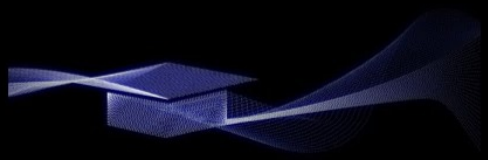
We offer customized service packages, tailored to the needs of our customers and serve them through a highly skilled, global network of technicians. Equipped with enhanced digital tools and technologies, we are able to help our customers maximize their machine uptime, increase equipment utilization efficiencies and thereby resulting in better customer satisfaction.



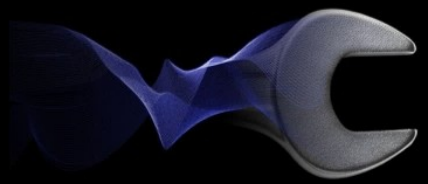
ZEISS QEC



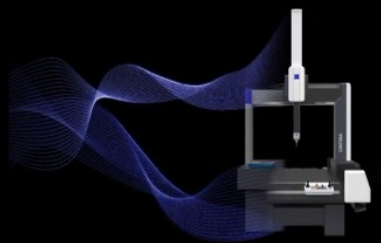
Knowledge



Maintenance & Repair



Retrofit & Productivity



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EN_V01_2026 Subject to change in design and scope of delivery and as a result of ongoing technical development.
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