

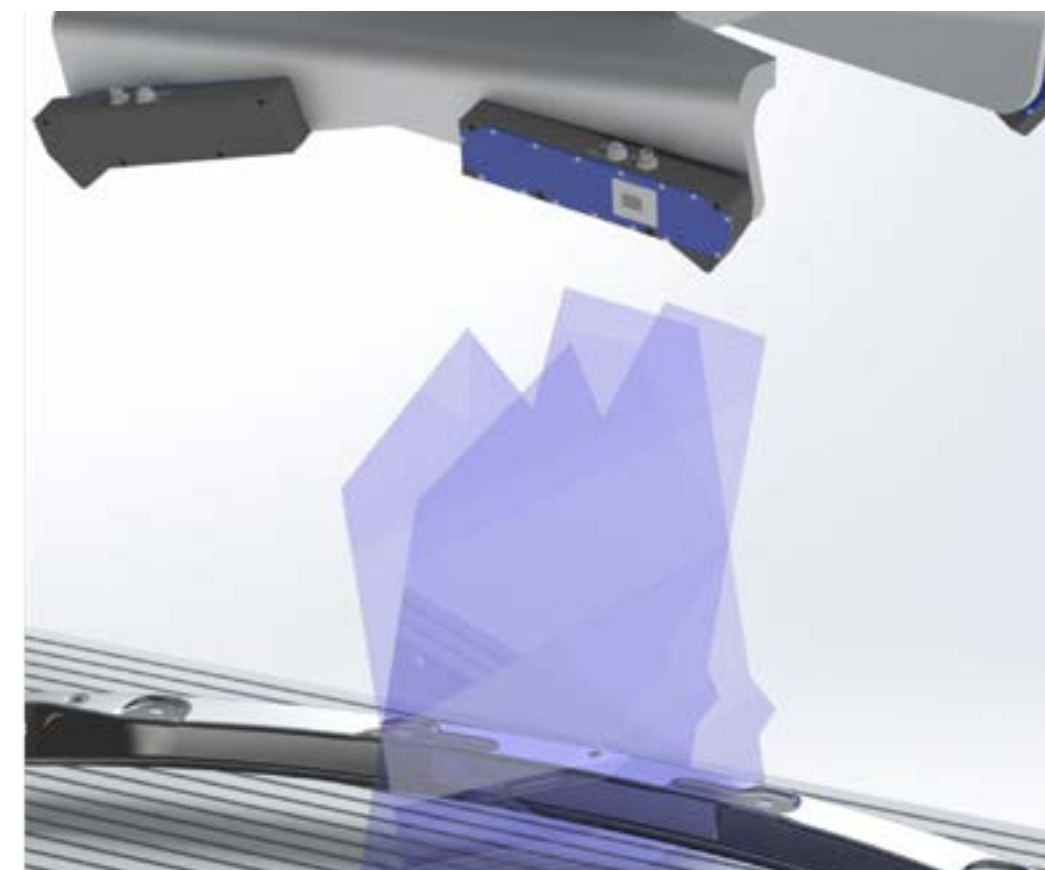
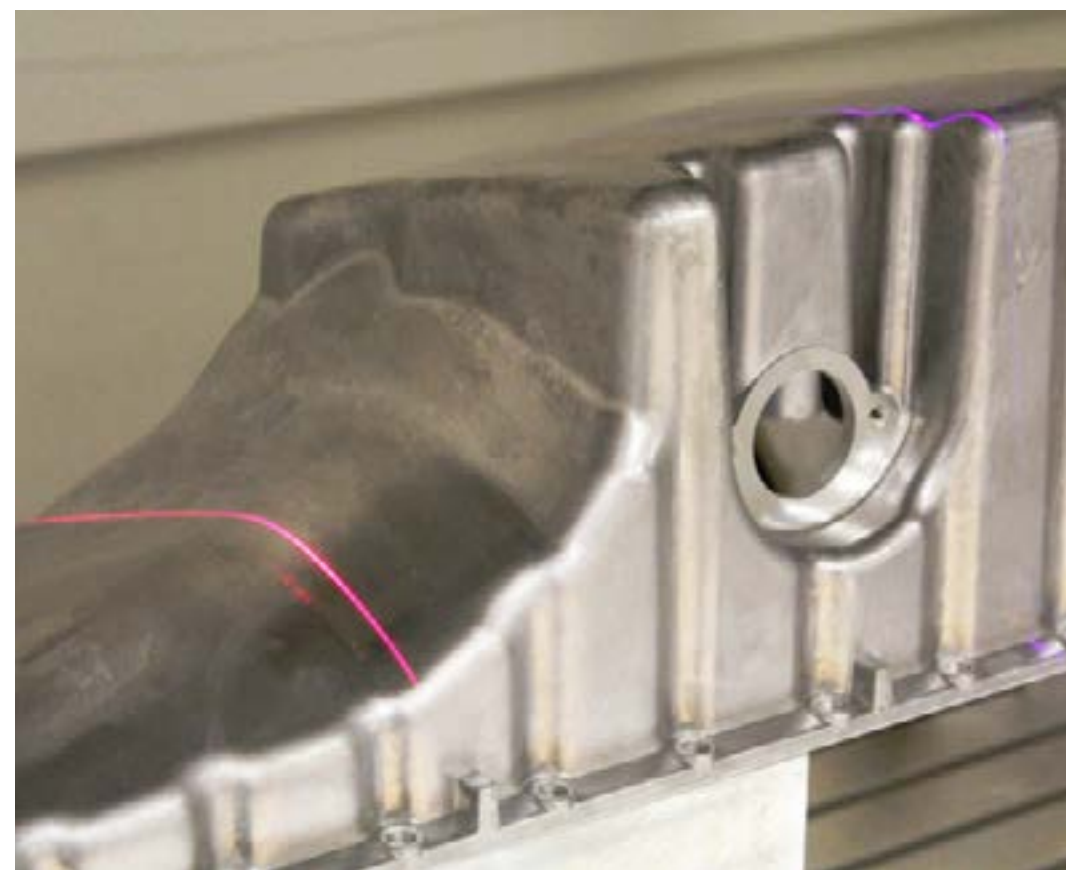
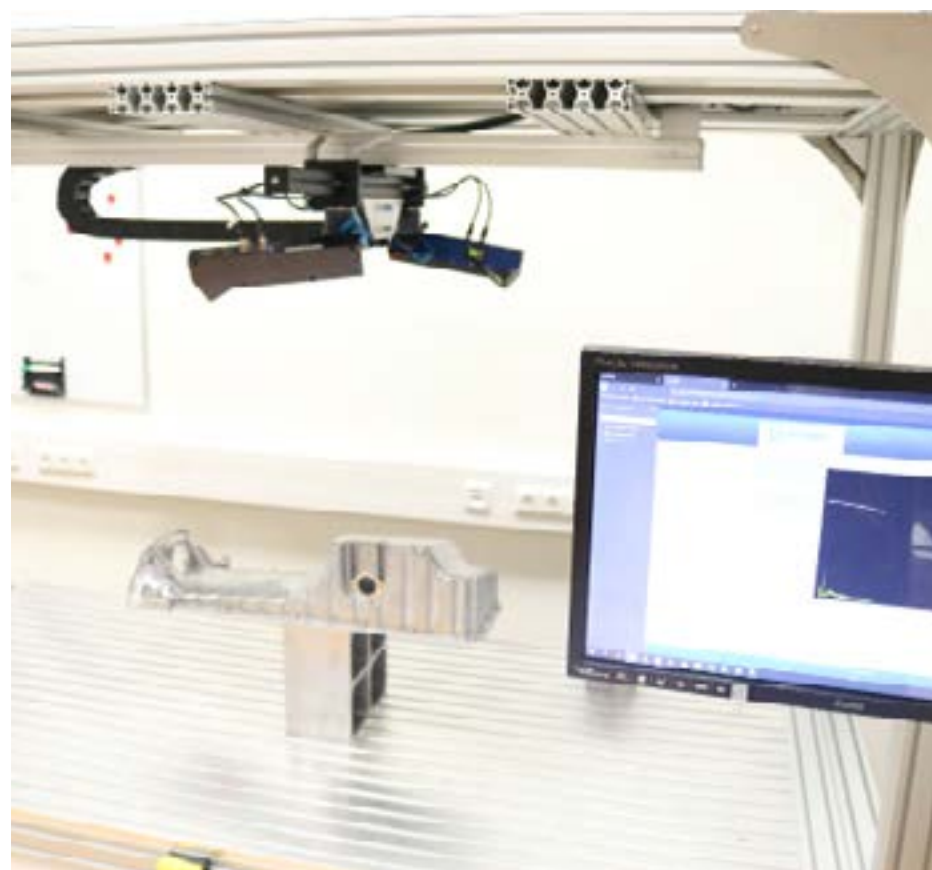
ZScan 3D Multi-Sensor Scanning of Large Objects





ZScan – Benefits

- High-resolution, seamless 3D scanning of large objects
- Different axis configurations for a wide variety of applications
- Contains senswork VC 3D, one of the fastest 3D point cloud frameworks worldwide
- Unique multi-sensor calibration enables free spatial arrangement of up to 8 sensors
- Optimized for fast data evaluation in inline processes
- The modular concept allows direct integration into a wide variety of manufacturing processes



ZScan – Applications & Industries

AUTOMOTIVE

- 3D measurement of large assemblies and comparison with CAD
- Determination of three-dimensional defects such as bubbles or blisters on vehicle body-in-white parts
- Determination of form deviations for manual or automatic straightening processes

FOOD & BEVERAGES

- Volume determination of cut goods such as meat, fish, cheese, ...
- 3D data provision for cutting systems

WOOD INDUSTRY

- 360 ° scanning of lengthways goods
- Scanning of block format goods without shading
- Volume determination and defect detection



ZScan – Features

MULTI-SENSOR CALIBRATION

- Calibrate the position of 3D scanners and the direction of transport, e.g. B. a conveyor belt. Inspect all point clouds in a global coordinate system.

SCAN TO CAD COMPARISON

- Comparison of scan data against a wide variety of CAD formats. Color-coded display of the deviations.

GEOMETRIES

- Find or fit 3D planes, lines, circles, spheres, cylinders and cones in point clouds. Measure distances, calculate intersections, projections or cuts.

AUTOMATIC ALIGNMENT

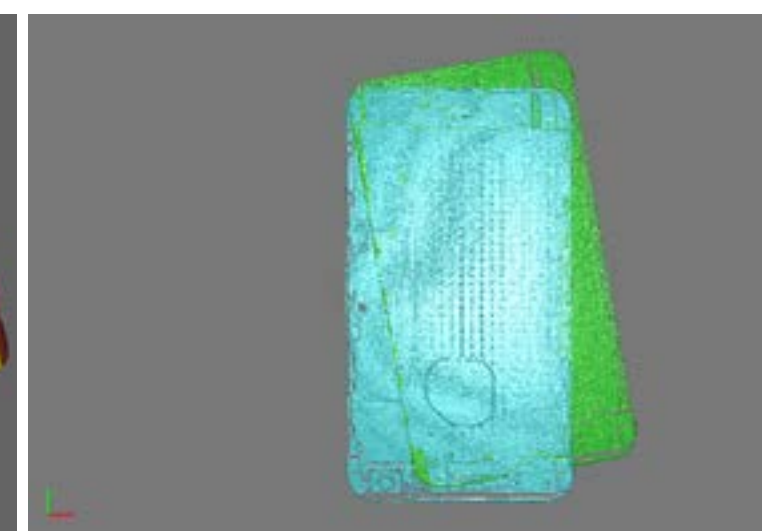
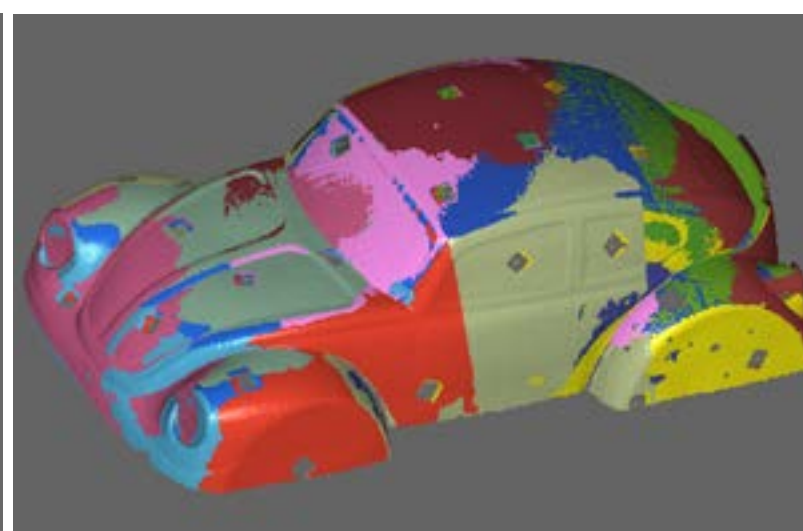
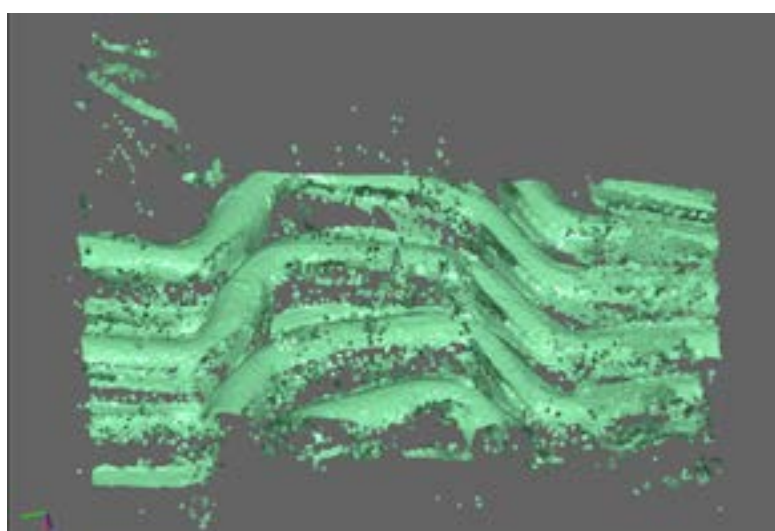
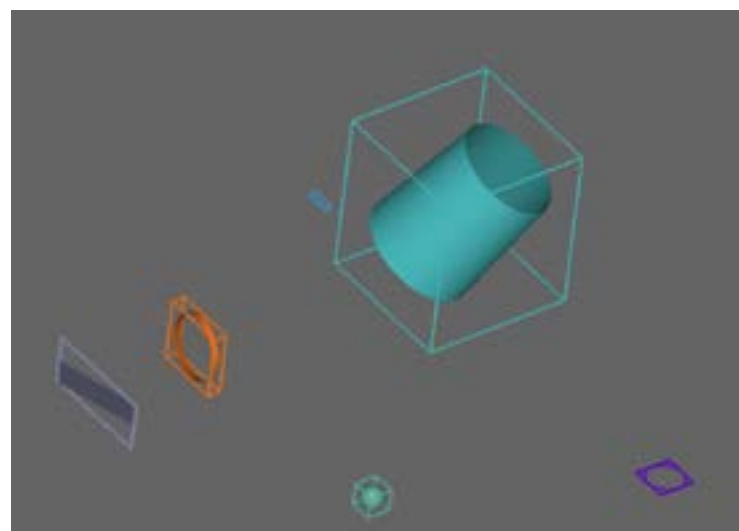
- Automatic alignment of scan data on a reference object. The reference can be another scan or come from a CAD model. The alignment is fully automatic, it does not require any pre-alignment. Alignment functions: RPS system, Best Fit, ...

REGISTRATION AND TRIANGLE MESH CALCULATION

- ICP (Iterative Closest Point) for multiple area scans and triangle mesh calculations

EXTENSIVE FILTER FUNCTIONS FOR 3D POINT CLOUD PROCESSING

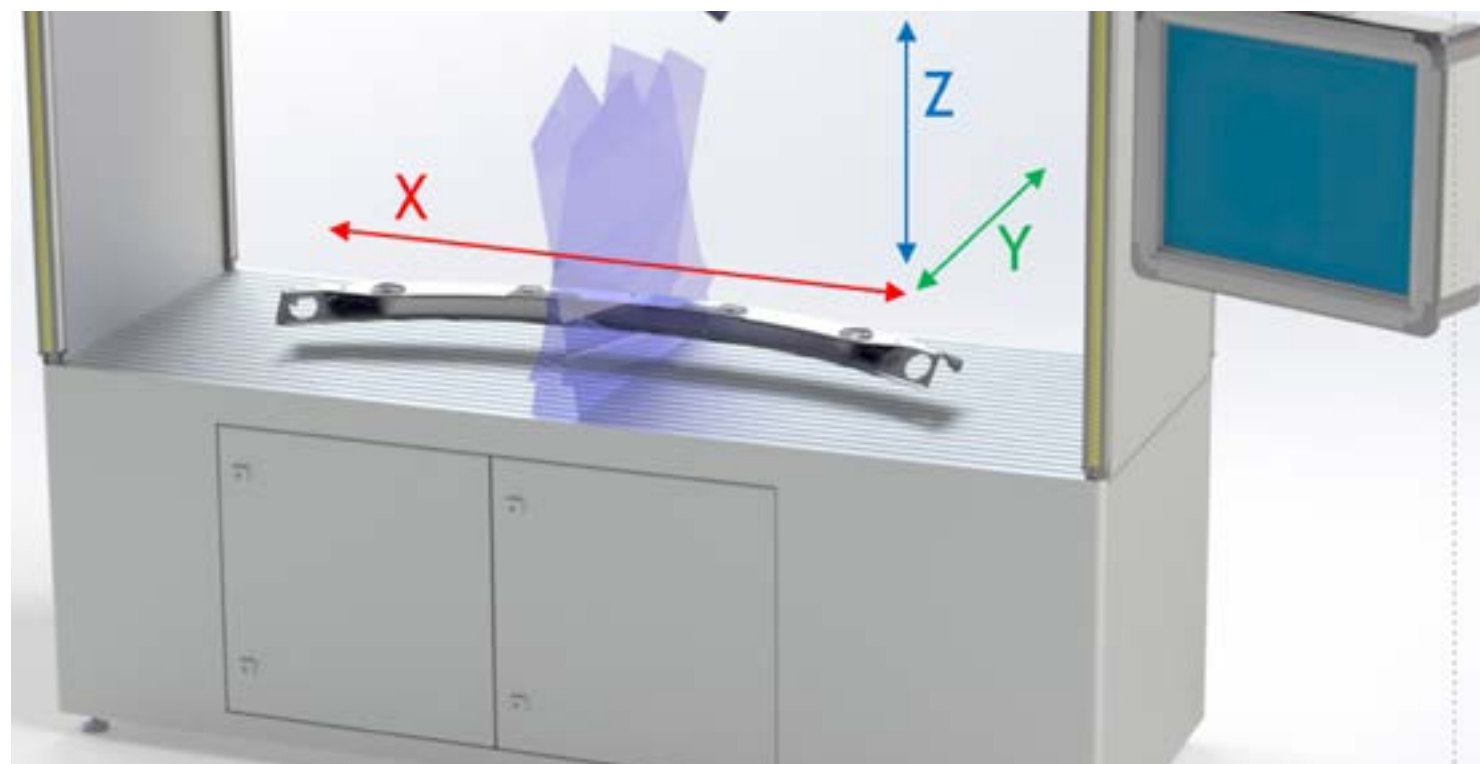
- Spatial detection and elimination of outliers



ZScan – Data Sheet

	ZScan S	ZScan M	ZScan L
Scan Volume X,Y,Z (X=Axial Direction, Y = Depth, Z = Height)	X _{max} : 2000 mm Y = 300 mm Z = 200 mm	X _{max} : 3000 mm Y = 700 mm Z = 500 mm	X _{max} : 6000 mm Y = 1000 mm Z = 1000 mm
Resolution Z	8,9...76 µm	27...162 µm	39...289 µm
Resolution Y	68...198 µm	181...446 µm	251...683 µm
Auflösung X	Depending on the scan time Typical: 0.2 mm	Depending on the scan time Typical: 0.2 mm	Depending on the scan time Typical: 0.2 mm

Further configurations possible on request.



3D Room Calibration for Multi-Sensor Systems

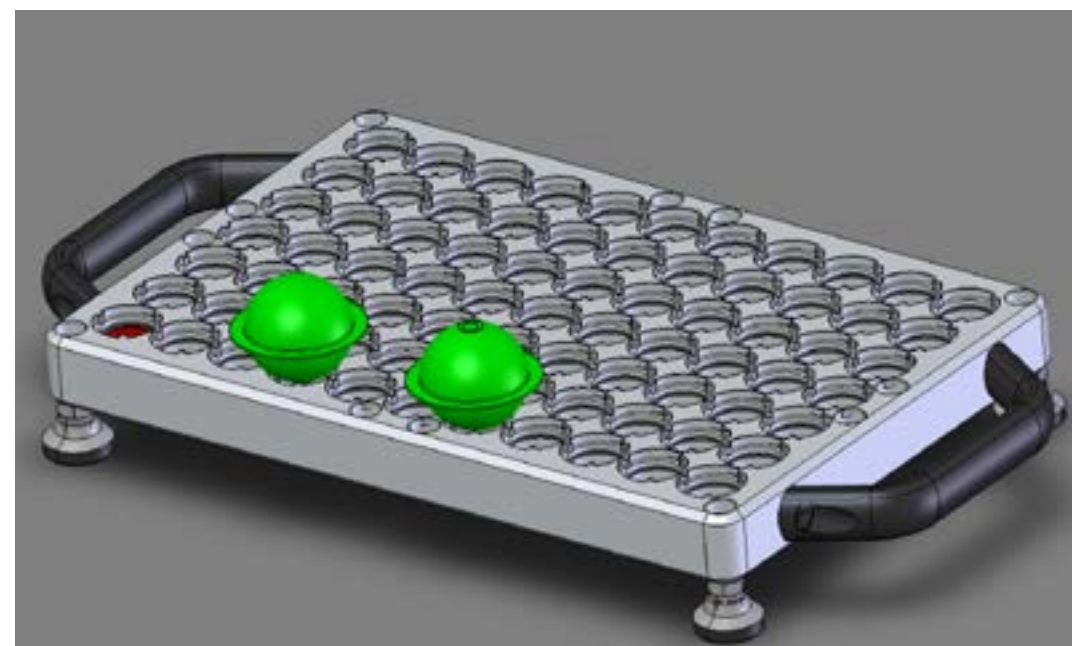
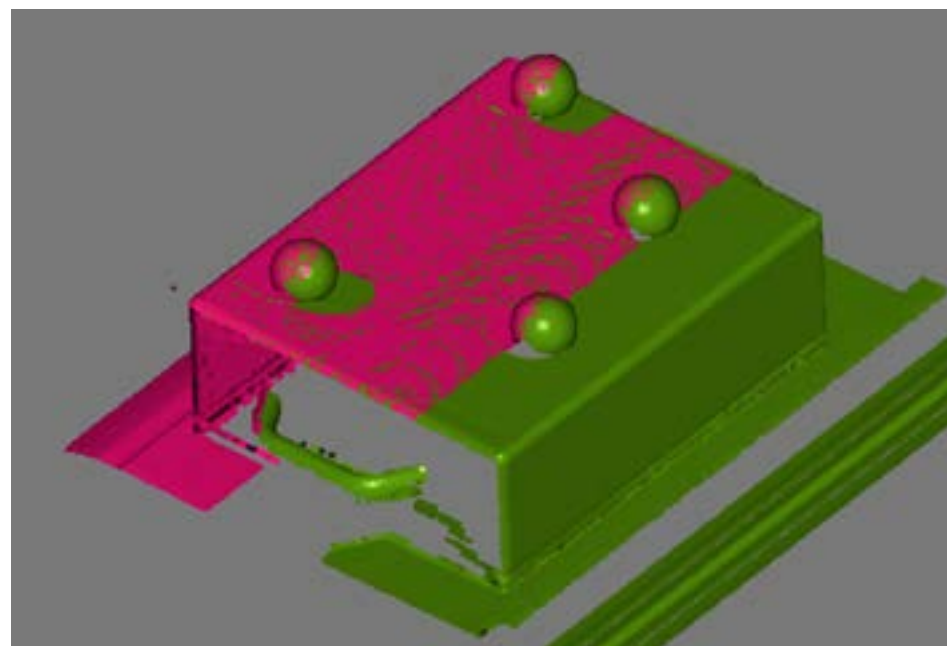
FEATURES

Our 3D calibration, developed especially for ZScan, using high-precision spherical targets, allows sensors to be calibrated with a free spatial arrangement and the scan data from up to 8 scanners to be combined spatially.

BENEFITS

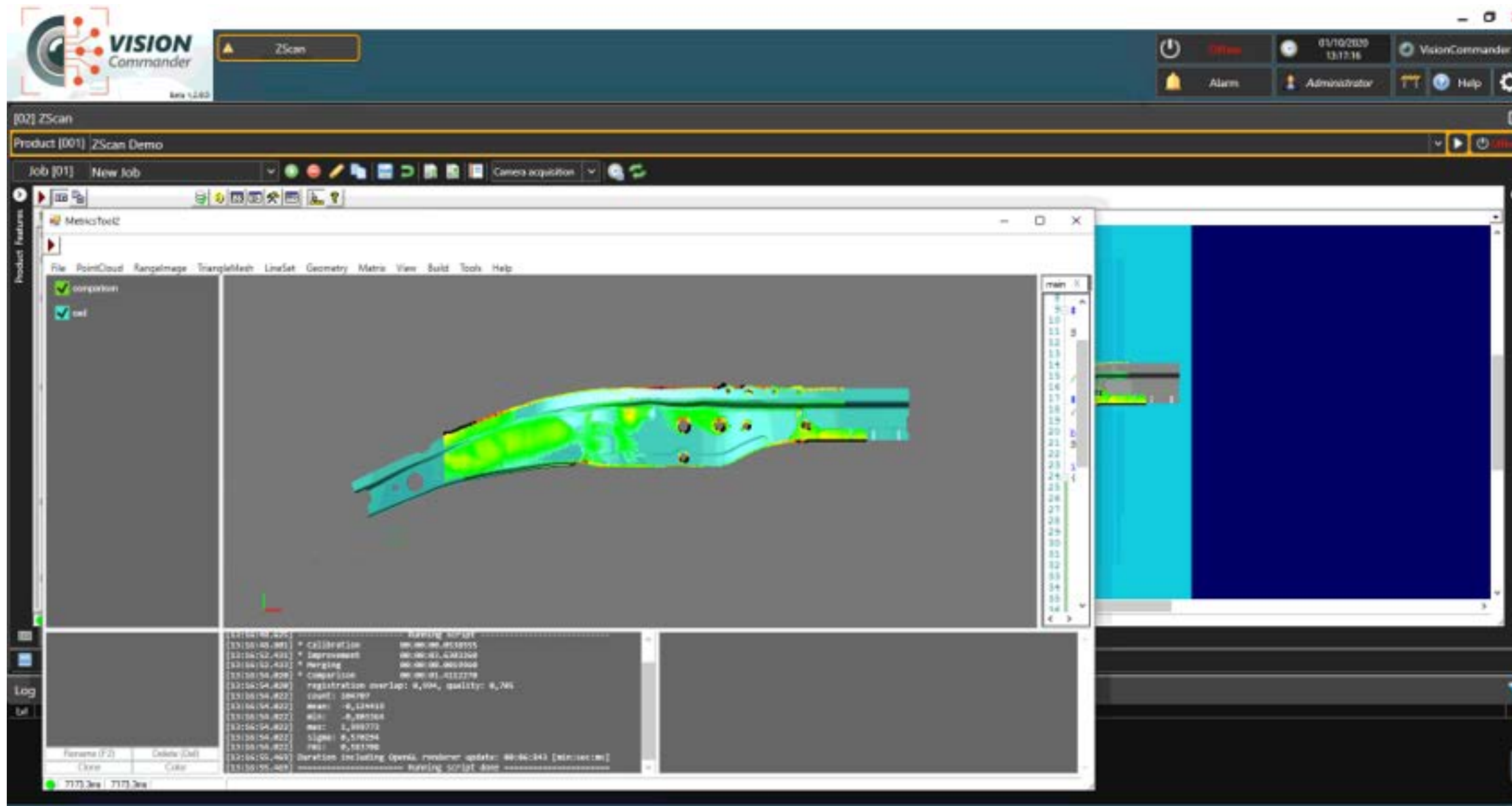
- Virtually shadow-free 3D scans with a fixed sensor configuration.
- Enlargement of the scan volume through multi-sensor arrays

Multi-sensor calibration for shadow-free, three-dimensional detection of large objects





3D Metrology Framework: *VisionCommander 3D*



High-performance 3D tools:

- Optimized for inline processes
- CAD comparison / best fit
- 3D geometry fit
- 3D measuring tools
- Alignment
- Import / export of various 3D formats



3D Systems by senswork - *all from a Single Source*

- Fully integrated test systems with part holders, axis systems, machine interface
- Machine safety + CE
- Inline calibration technology to compensate for room temperature fluctuations
- No complex jig for individual parts
- Extraction of production-relevant measurement data (example busbar: segment lengths, angles, bracket positions ...)
- Connection to higher-level systems
- HMI and interface design according to customer specifications
- Visualizations for rework stations



Your machine vision experts

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