

sIT 2016 Göttingen



AICON 3D Systems GmbH

Products, Applications and Technology

Dr.-Ing. Werner Bösemann

PRODUCTS, APPLICATIONS AND TECHNOLOGY

Overview

Introduction

- Overview AICON and AICON productlines
- Basics

Products and Applications

- MoveInspect Technology
- AICON Scanner
- TubeInspect

Current Topics

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About AICON

- Founded in 1990 as a spin off from Volkswagen R&D and the Technical University Braunschweig by Dr.-Ing. Carl-Thomas Schneider and Dr.-Ing. Werner Bösemann
- More than 140 employees
- Since April 1, 2016 part of HEXAGON Manufacturing Intelligence



We provide systems for:

Geometric Dimensioning & Tolerancing

- Inline inspection
- Periodic check
- First part inspection



We provide systems for:

Inspection & Reverse Engineering

- CAD comparison
- Quality control
- GD&T



We provide systems for:

Deformation Analysis

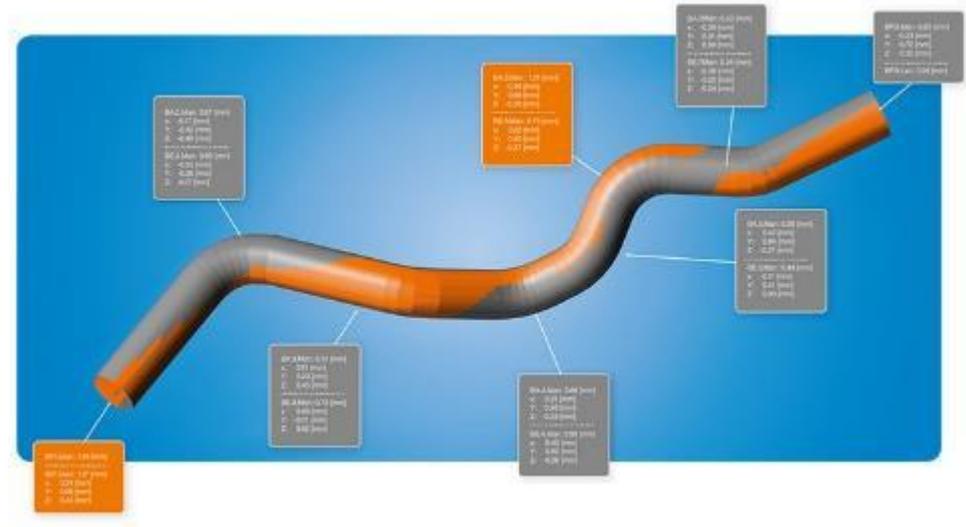
- Load test
- Dynamic deformation
- Static deformation
- Tracking and positioning



We provide systems for:

Quality Control for Tube & Wire

- Inline inspection
- Reverse engineering
- Machine set up



Product Lines for Inspection, Testing, and Reverse Engineering



TubeInspect

Tube and wire measurement
with optical gauge



MoveInspect Technology

Modular portable coordinate
measurement technique



AICON Scanner

Surface scanning of complex
geometries

AICON PRODUCTS

Special Industry Solutions



Vehicle Testing

Systems for vehicle dynamic and vehicle safety testing



Bodymetric & Life Science

Scanning systems for dental, cosmetics and aesthetic medicine

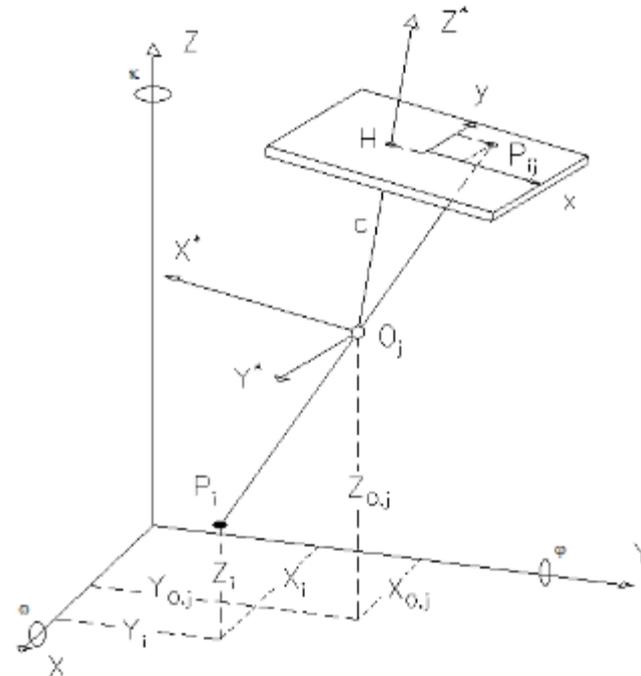


Arts & Culture

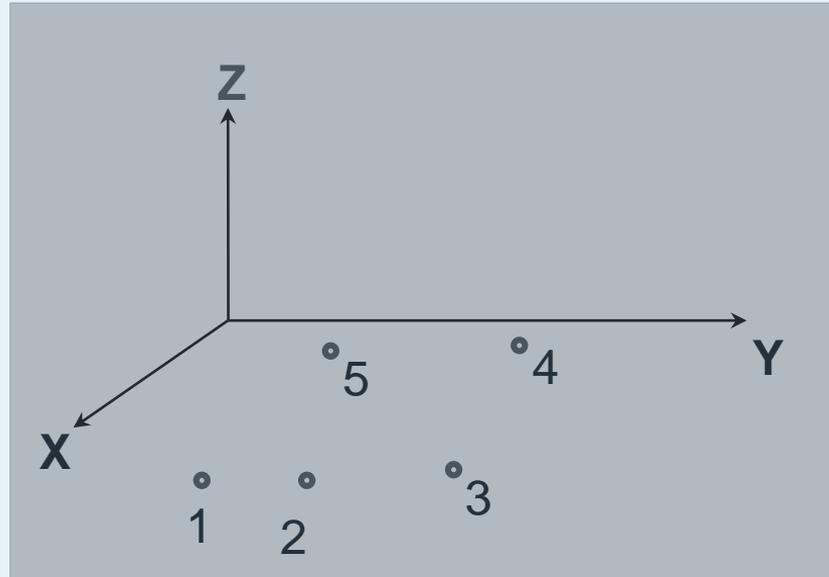
Scanning systems for arts, cultural heritage and archeology

Optical 3D Measurement Systems: Basics

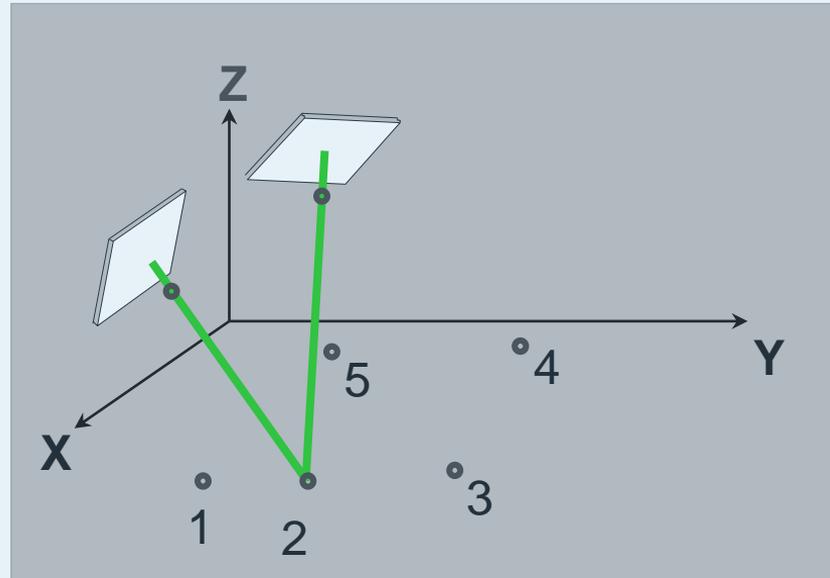
- Image processing algorithms for feature measurement in digital images
- Mathematical models and algorithms for camera calibration and orientation
- Algorithms for 3D-computation, meshing and analysis



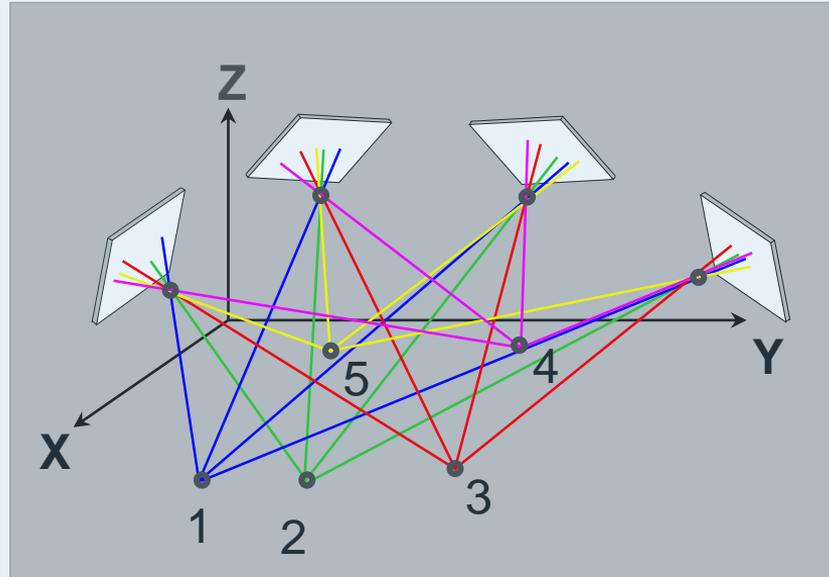
Optical 3D Measurement Systems: Basics



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Optical 3D Measurement Systems: Basics



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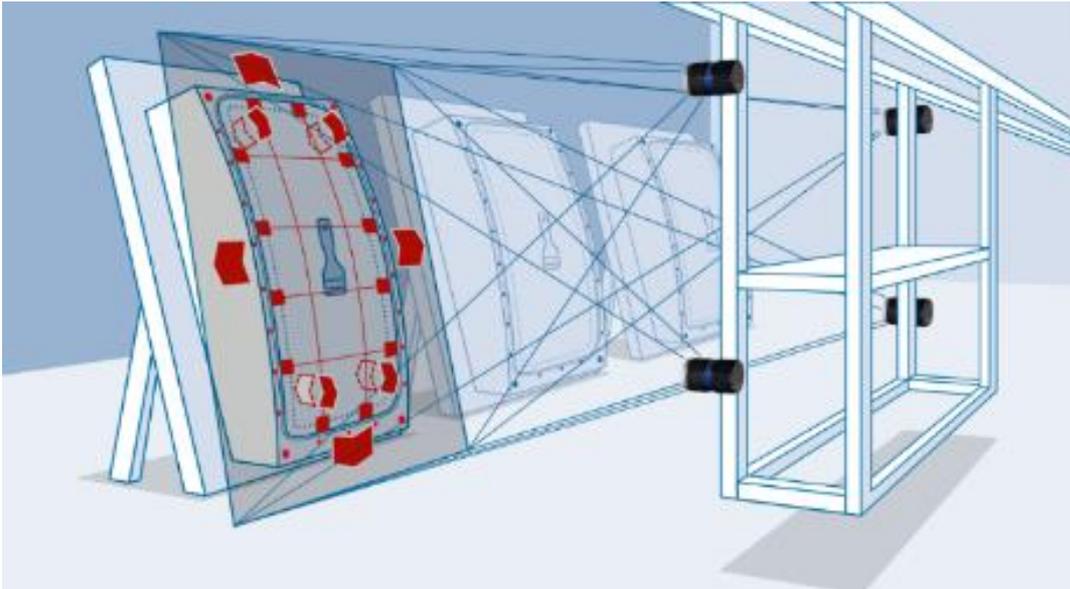
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Products and Applications

- **MoveInspect Technology**
- AICON Scanner
- TubeInspect

Current Topics

Airbus Helicopters Germany

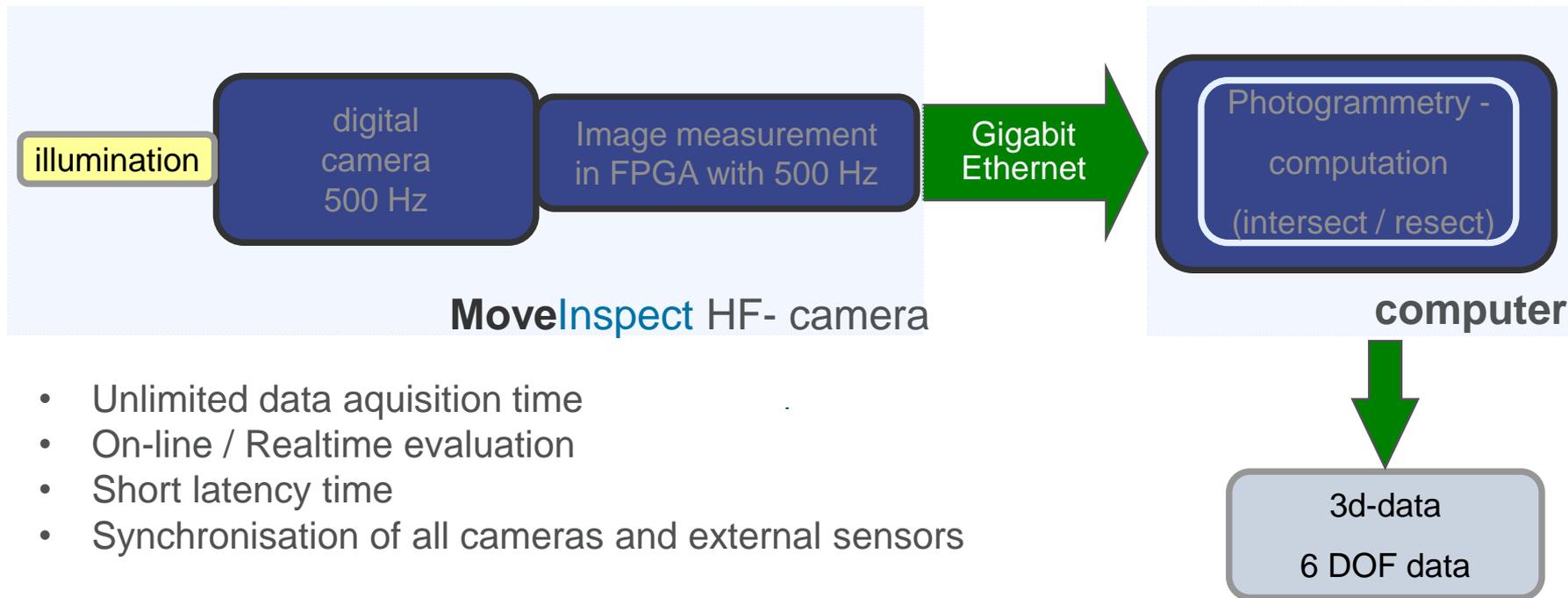


MoveInspect HF – Tracking

- Customer benefits
 - Modular platform concept
 - Dynamic referencing
 - Complete freedom of movement
 - Flexible measuring volume
- Applications
 - Dynamic measurement up to 500Hz
 - Vibration analysis
 - Deformation analysis
 - Fast object tracking

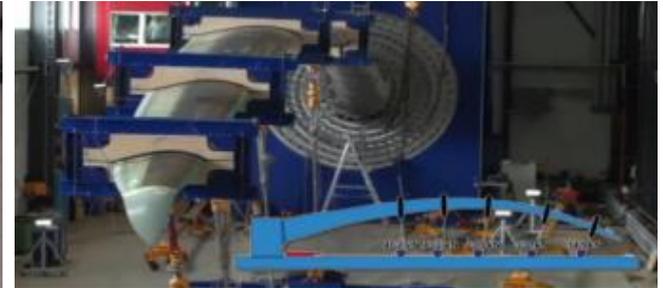
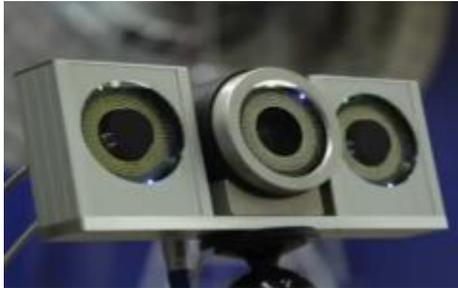


MoveInspect HF – Data reduction



APPLICATIONS: MOVEINSPECT

Deformation and Motion – Wind Energy



VEHICLE DYNAMIC APPLICATIONS

WheelWatch / EngineWatch



WheelWatch / Engine Watch are a non-contact high speed monitoring systems for wheel motion / engine motion analysis on a moving vehicle or in a test station

MoveInspect DPA – Targeting

- Customer benefits
 - Extremely mobile
 - Perfect for rough environment
 - Unlimited measuring volume
 - Multi purpose
- Applications
 - Part inspection
 - Deformation analysis
 - Set up of reference meshes
 - CAD comparison



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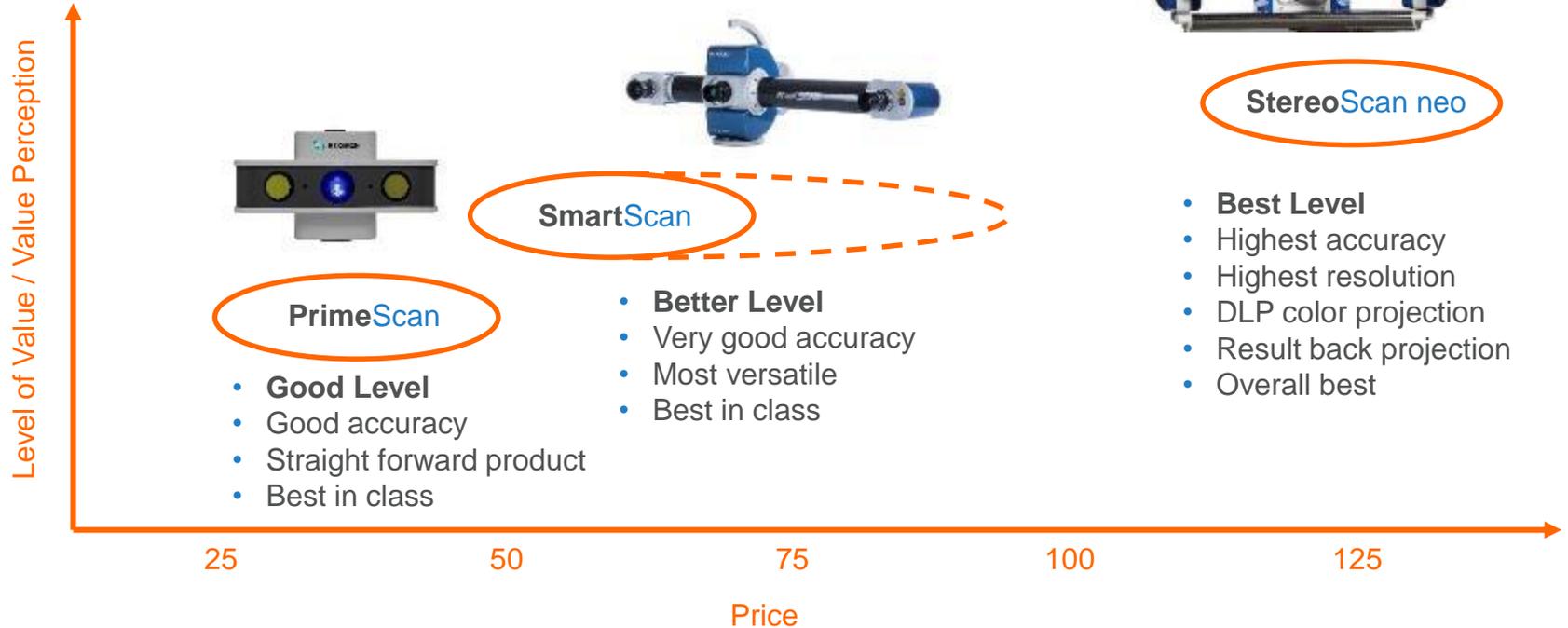
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AICON Scanner



- **Good Level**
- Good accuracy
- Straight forward product
- Best in class



SmartScan

- **Better Level**
- Very good accuracy
- Most versatile
- Best in class



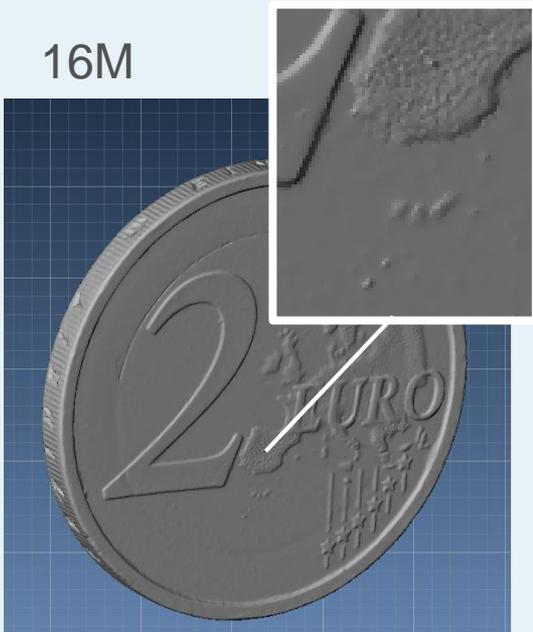
StereoScan neo

- **Best Level**
- Highest accuracy
- Highest resolution
- DLP color projection
- Result back projection
- Overall best

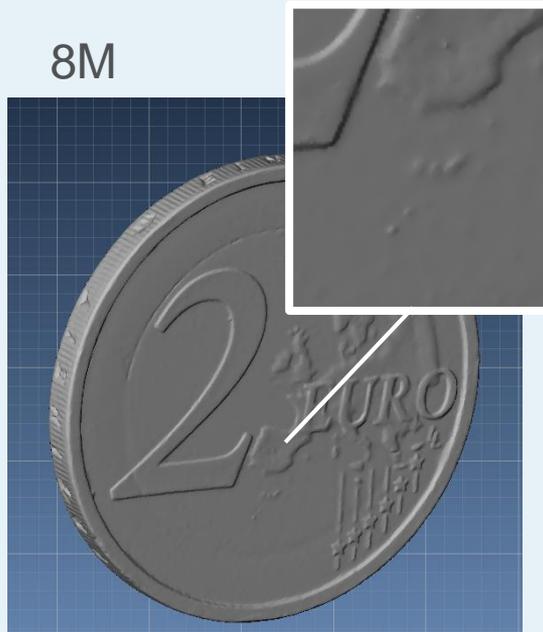
AICON PRODUCTS

Resolution Impact

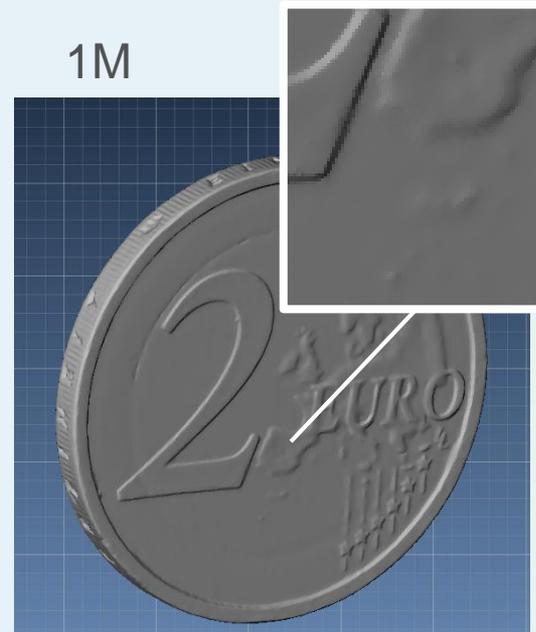
16M



8M

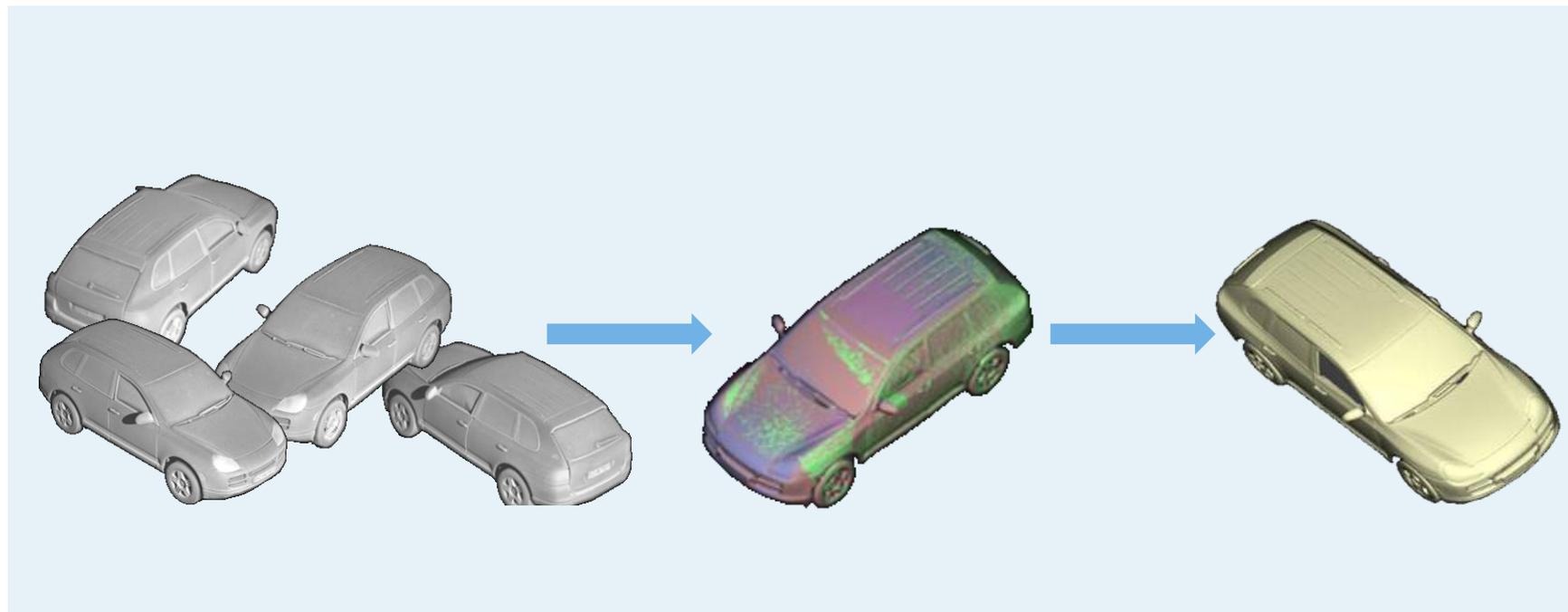


1M



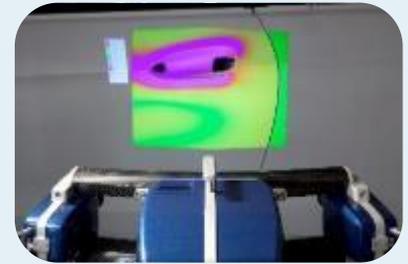
AICON PRODUCTS

3D Matching

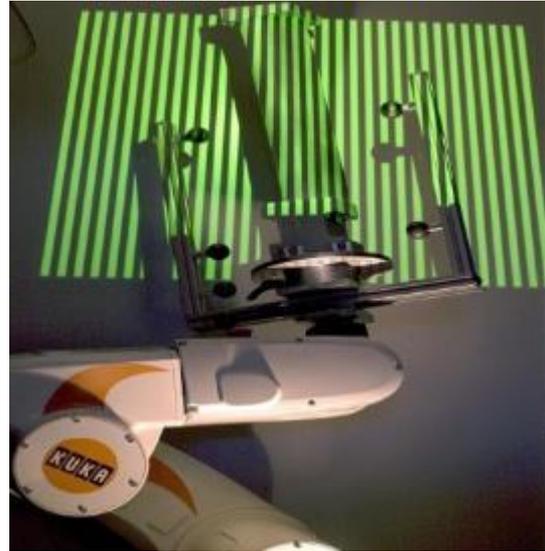


AICON Scanner: stereoSCAN neo

- Customer benefits
 - Quick, reliable and precise
 - Flexible measuring volume
 - Measures any material
 - Automation possible
 - Back projection of results
- Applications
 - Reverse engineering
 - Inspection
 - Quality control

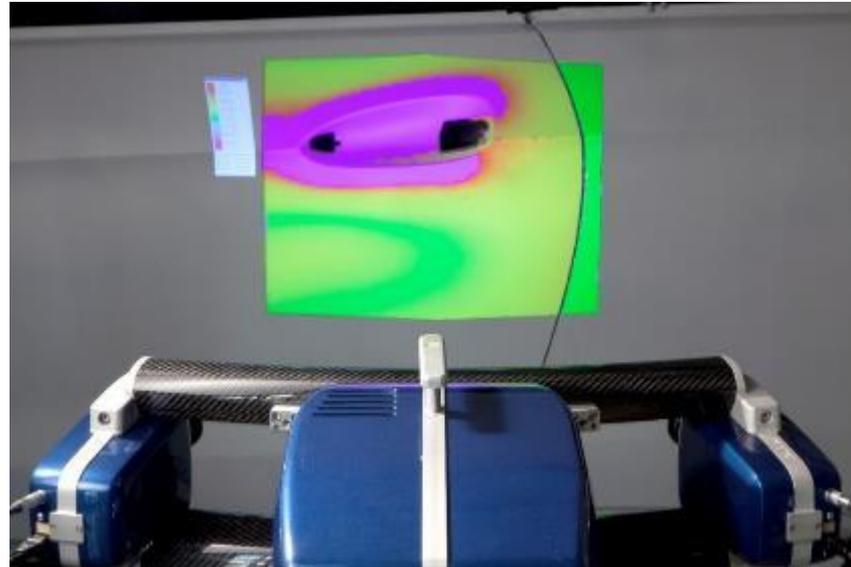


stereoSCAN neo – multi color projection

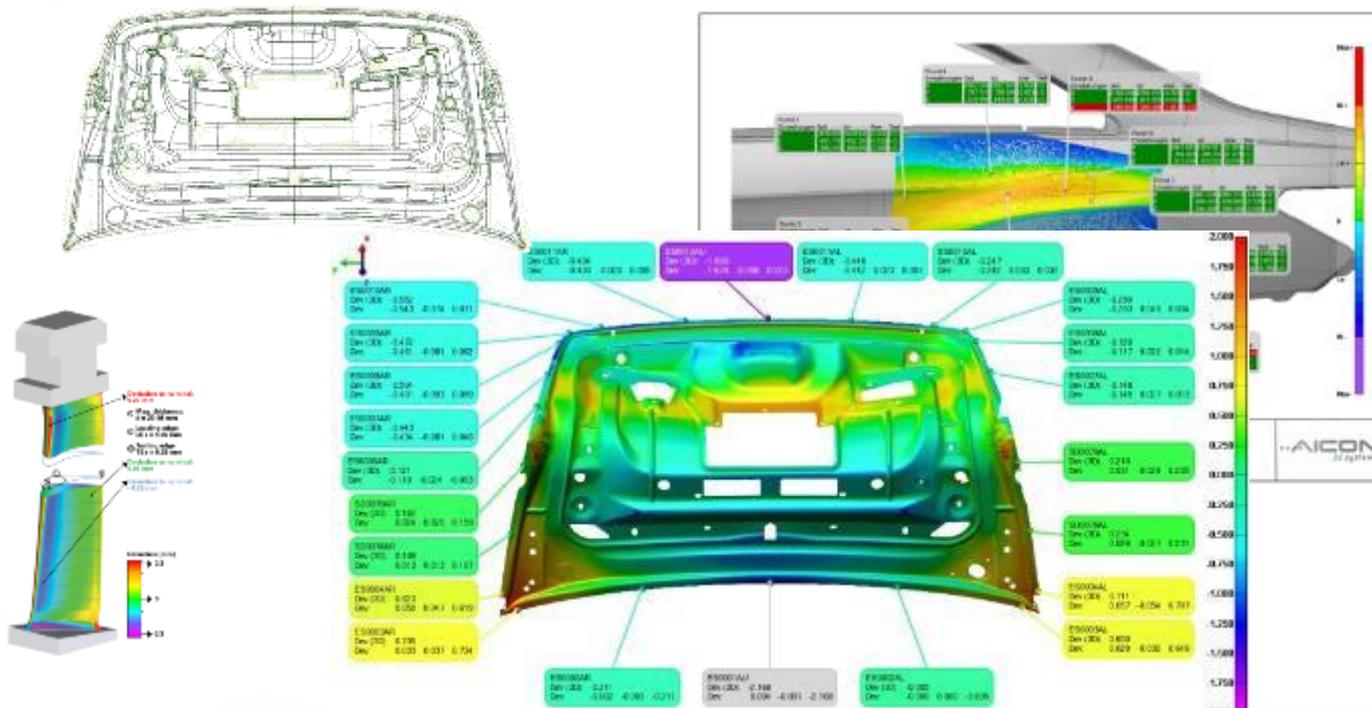


stereoSCAN neo – Back-Projection

- CAD comparison
- Shape defects
- Geometry elements
- Legends
- Marking / Labeling



AICON Scanner: Applications



Challenges in software development

- handling of large data
- complex algorithms
- advanced image processing
- hardware interfaces
- fast processing
- usability

Still curious?

visit www.aicon.de

Thank you

