

Automated Quality See-through with Digitization

APM Technologies 3D Pvt Ltd

About us

APM Technologies started in 1999 and is associated with M/s Carl Zeiss GOM GmbH, Germany (Earlier GOM GmbH) , world leader in scanning and optical measuring technology. APM offers the complete range of Zeiss's products which includes highly acclaimed and world's most preferred ATOS Blue light scanning system.

APM Technologies is the Solution provider, which having a large and varied customer base in India.

The segments served by APM in India are:

- Automotive
- Aerospace
- Defense
- Research & development Centers
- Molds & Dies Manufacturing
- Heavy Industries.....etc.



APM Presence in India



Current Products - 3D Scanning



GOM SCAN 1



ATOS 5



ATOS COMPACT



ATOS Q



TRITOP

ScanBox Series 4



ScanBox Series 5



ScanBox Series 6



ScanBox Series 7

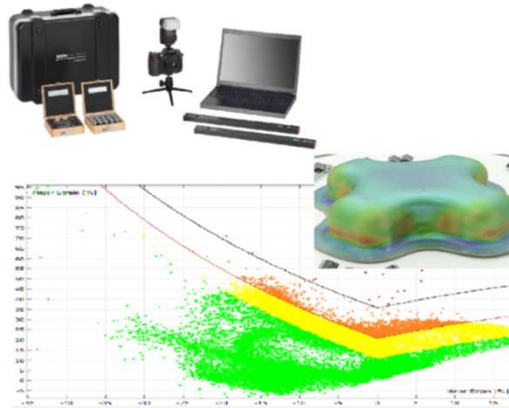


ScanBox Series 8

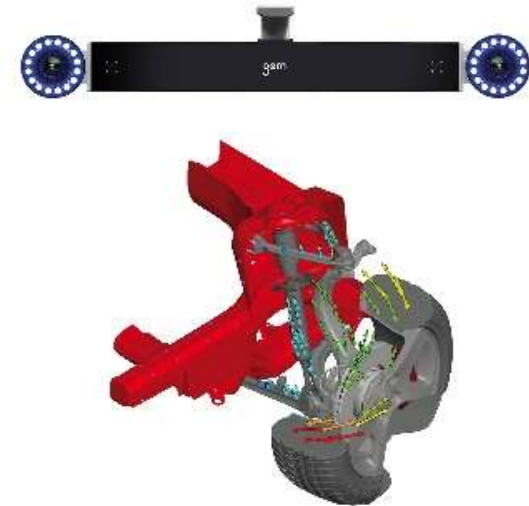
Current Products - 3D Testing



ARAMIS
Optical
3D Deformation
Analysis



ARGUS
Optical
Forming Analysis



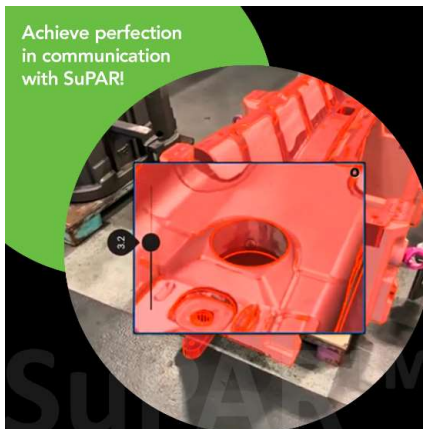
PONTOS Live
Mobile Optical
3D Measuring System



Certified
Metrology Partner



Current Products – Augmented Reality System



Current Products - 3D Printing



formlabs 



ScanBox

All-in solution for efficient production control

24. Januar 2024



All-in solution for efficient production control

ScanBox Series 4



ScanBox Series 5



ScanBox Series 6



ScanBox Series 7



ScanBox Series 8

Production in Transition

Challenges and opportunities

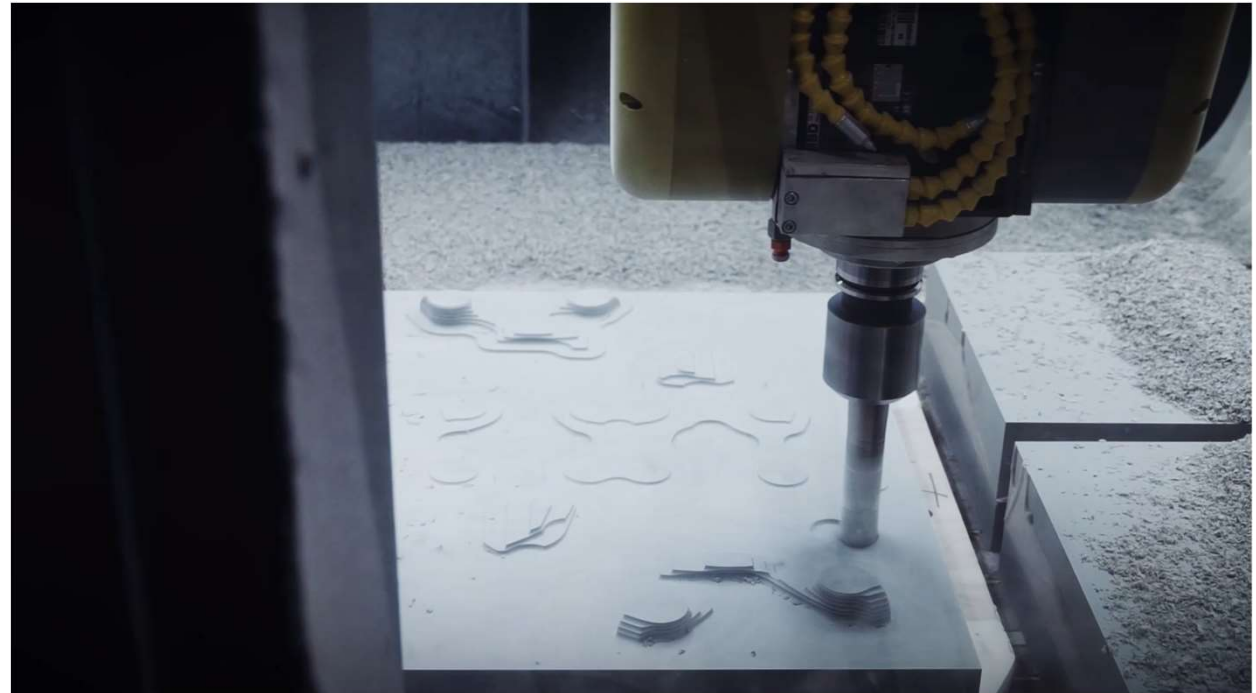
“We will have to react to things much faster.

To do so, we quickly need to aggregate and process our data and make decisions.”



- **Increasing complexity**

- Broad range of materials
- Large variety of connection technologies
- Large variety of models
- Just-in-time production
- Distributed development and production (multi-national, suppliers)
- High customer demands to quality
- Short time to market



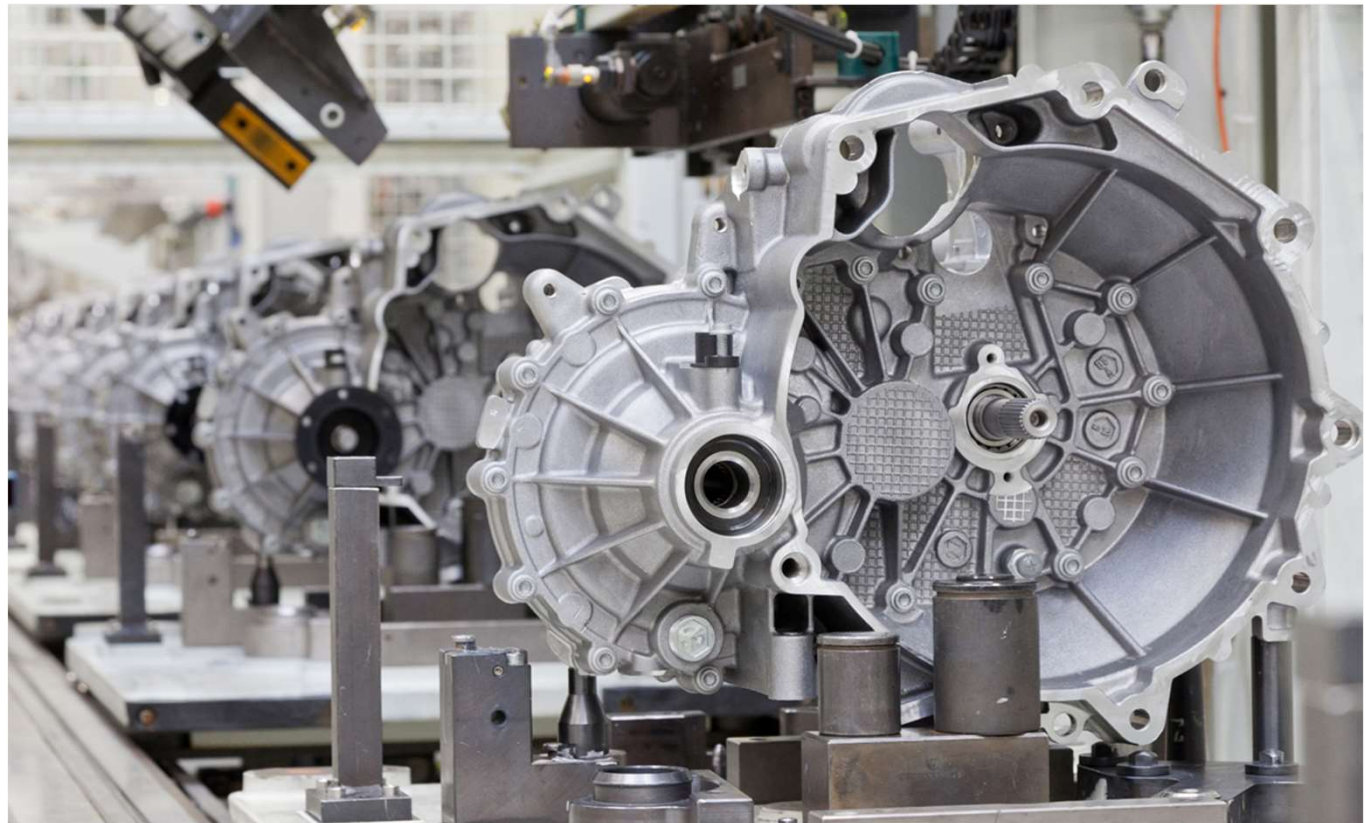
Reporting single dimension deviations is not sufficient anymore

Emphasizing the role of a service provider for efficient problem-solving

Providing a comprehensive analysis of the part quality

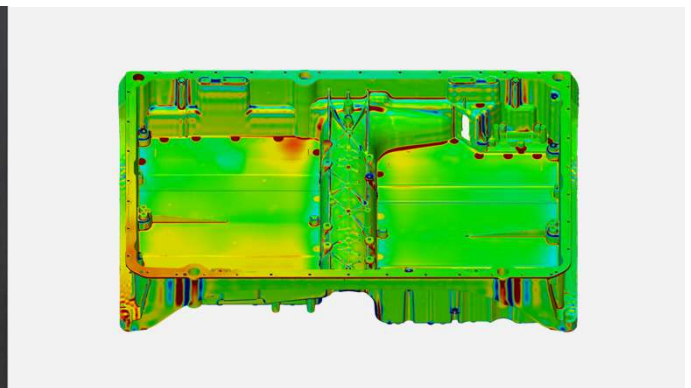
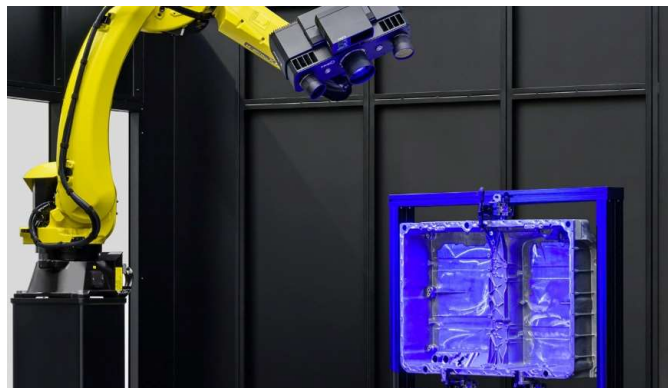
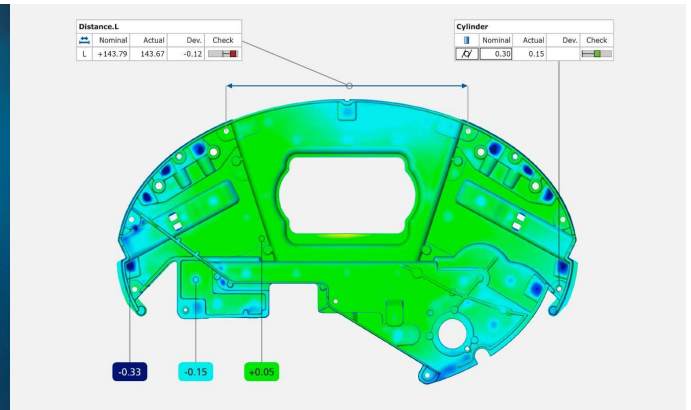
Mission

Quick, efficient corrections in development or series inspection

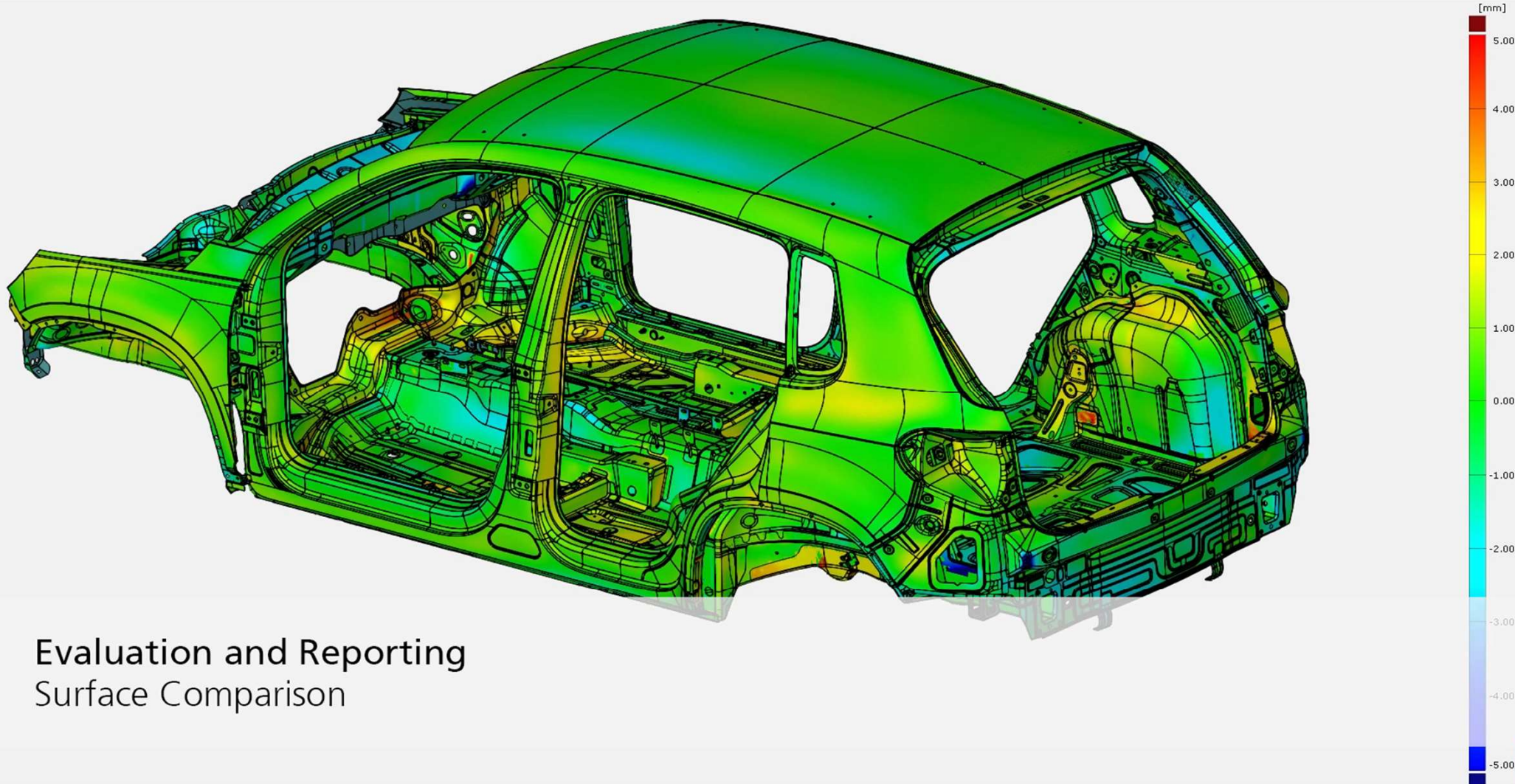


Feature-based and full-field
Dynamically in 3D
Easy to explain

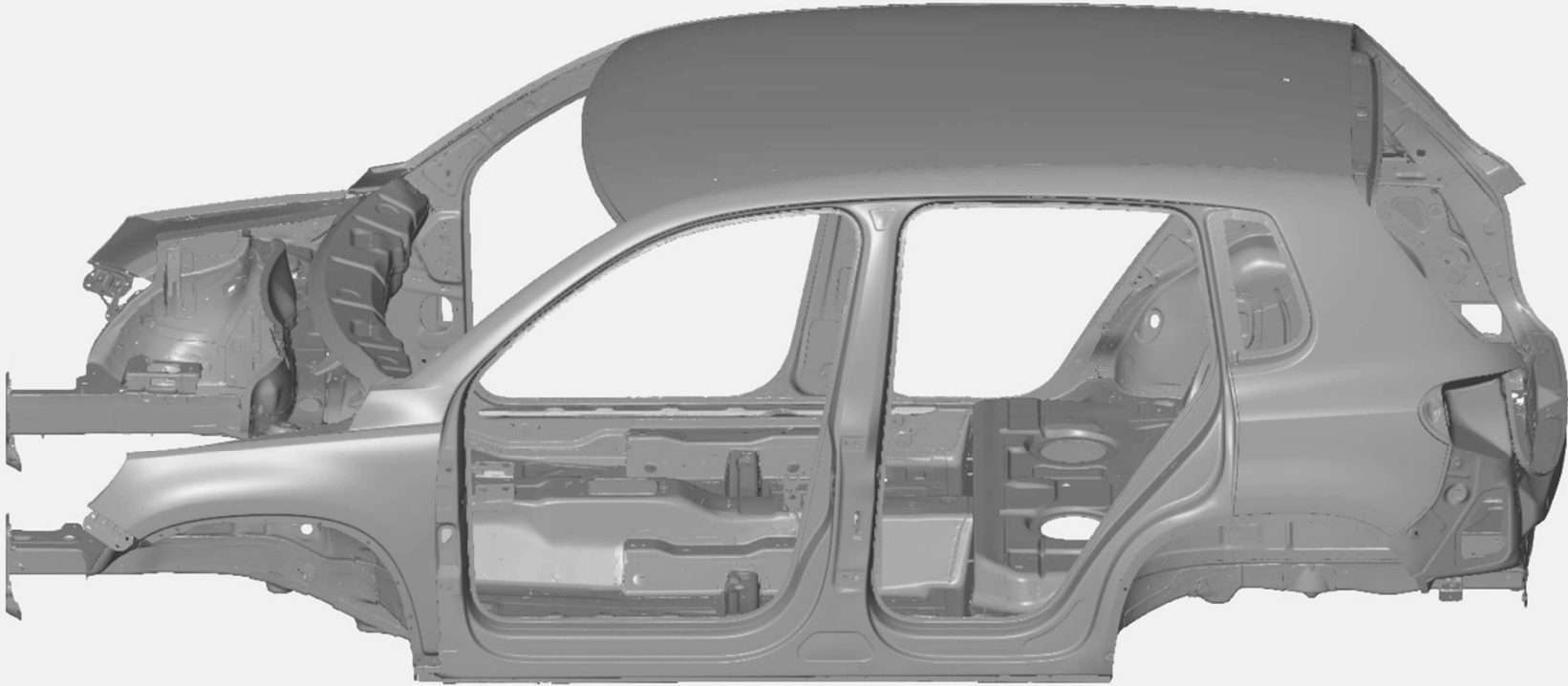
Result
“The real digital twin”



Full-Field 3D Data to Support Quality Departments

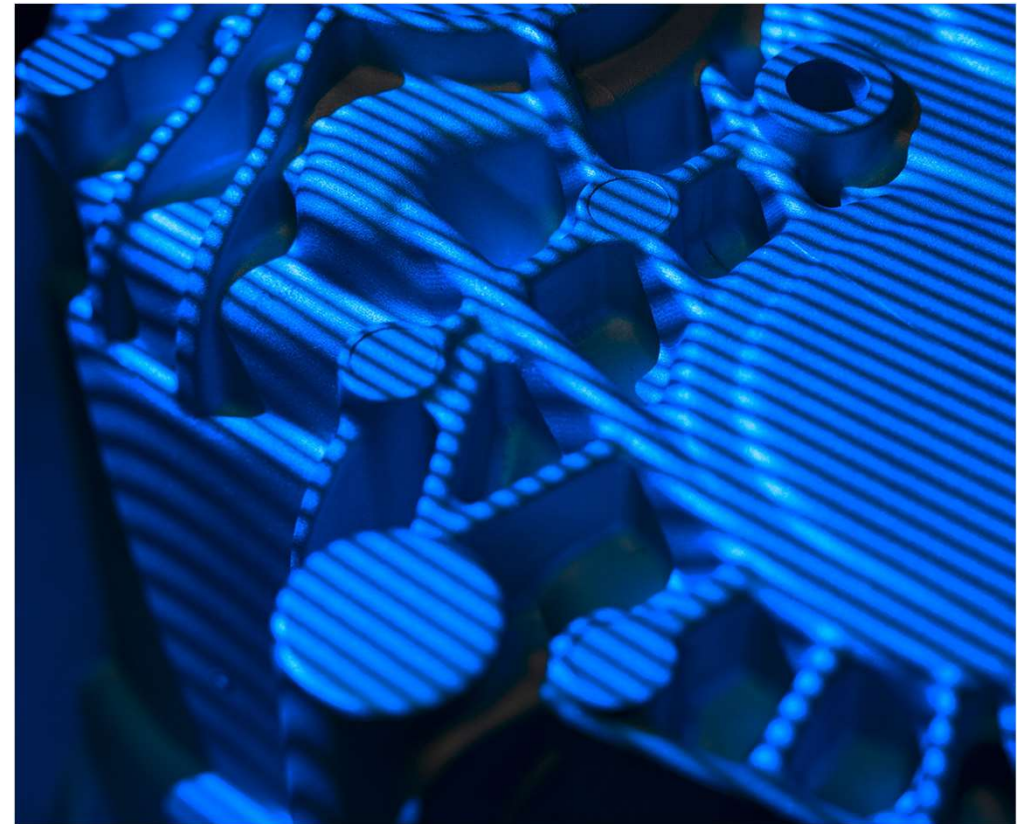


Evaluation and Reporting
Surface Comparison

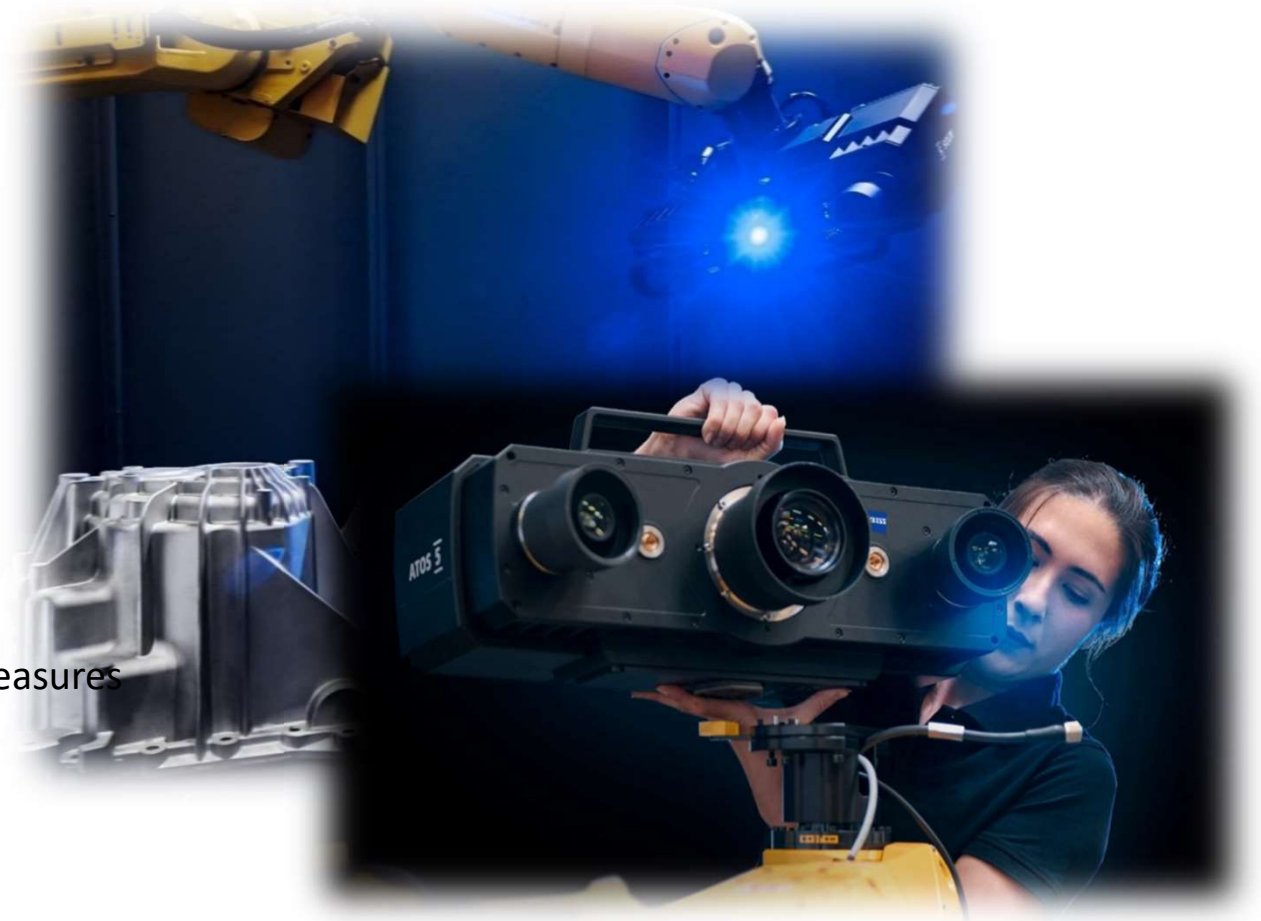


Evaluation and Reporting
Virtual Assembly

- Triple Scan Principle
- Blue Light Equalizer
- Self-monitoring system
- → Precise, full-field 3D coordinates
(geometrical digital twin)
- → Detailed 3D information for comprehensive
quality analyses
- → Improved product quality
- → Process safety in industrial applications



- High-speed fringe projection
- Fast data processing
- High data throughput
- → Comprehensive quality information in reduced measuring time
- → Fast identification of optimal corrective measures
- → Cost efficiency





Virtual Measuring Room

Virtual Measuring Room

ZEISS Quality Software

Central control and measurement planning software

Functional simulation of robot, sensor and part
in the measuring cell

Complete measuring procedure in the virtual measuring room

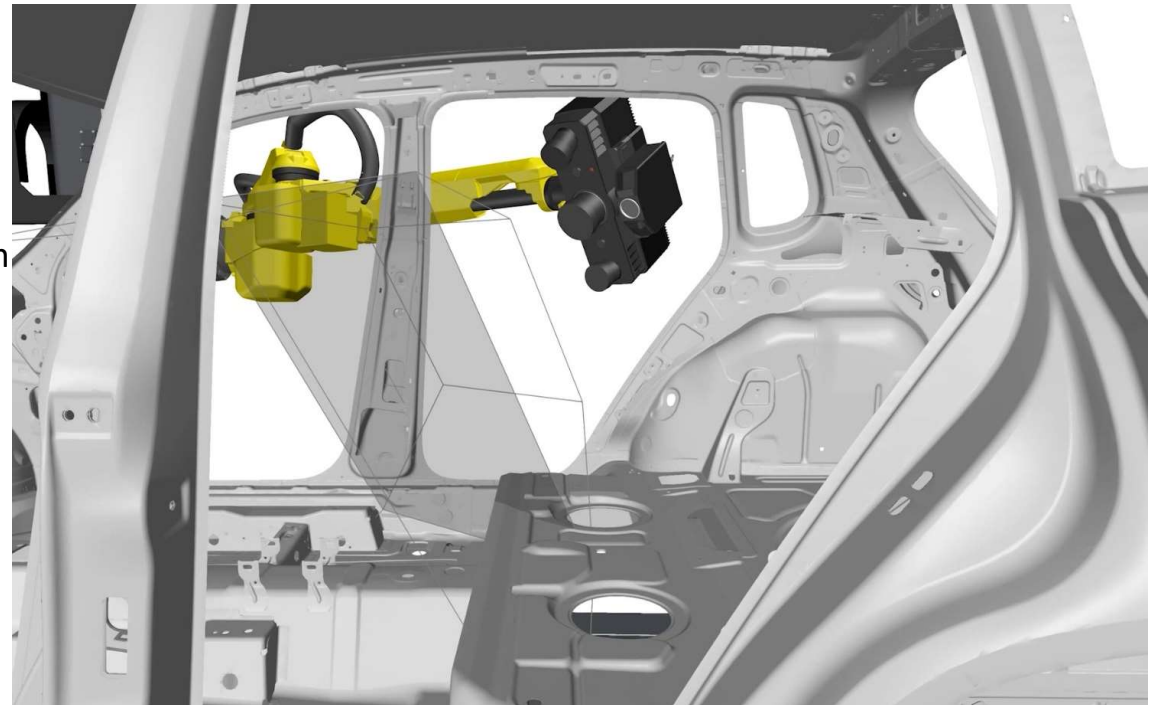
Automated measuring and inspection processes

Automatic creation of measuring positions
by Smart Teach

Burn-in procedure allows for automated
integration of available measuring programs

Serial measurement for inspecting additional parts

Customized reporting with a single click





ScanBox Series 7 & 8



ScanBox Series 7 & 8

8-axis kinematics

Consists of

Horizontal rail

Vertical lift

Articulated robot (with integrated cabling)

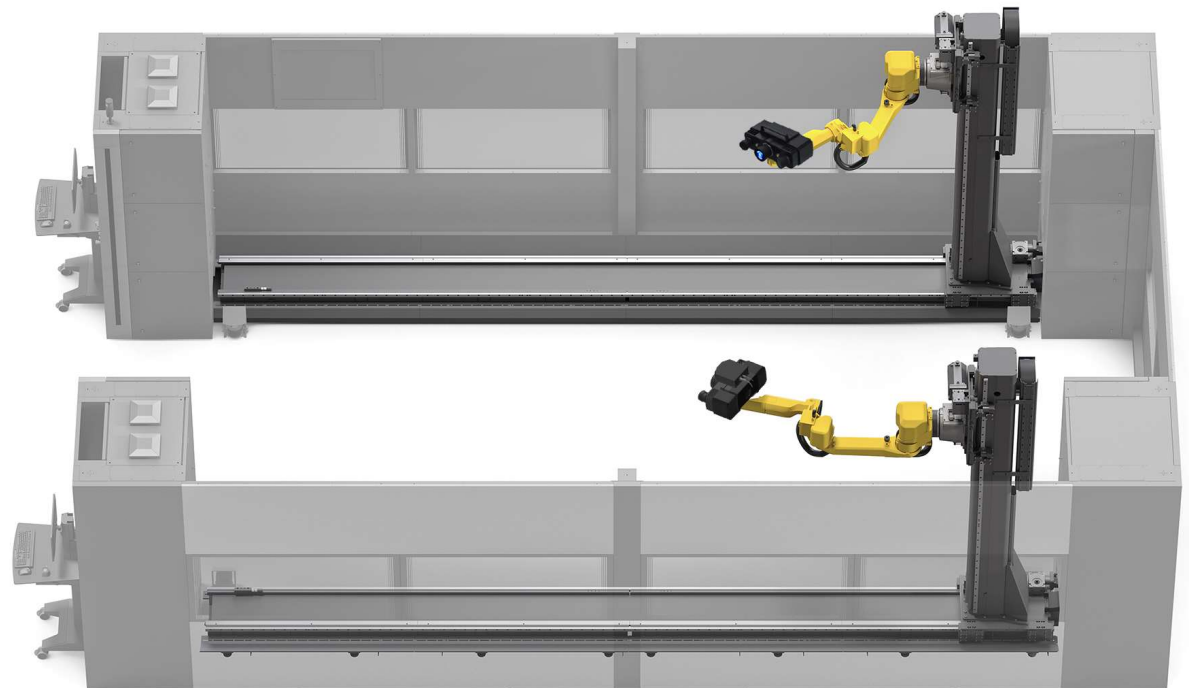
Small footprint of measuring cell

8 degrees of freedom allow for a more flexible sensor positioning

Various parts can be measured

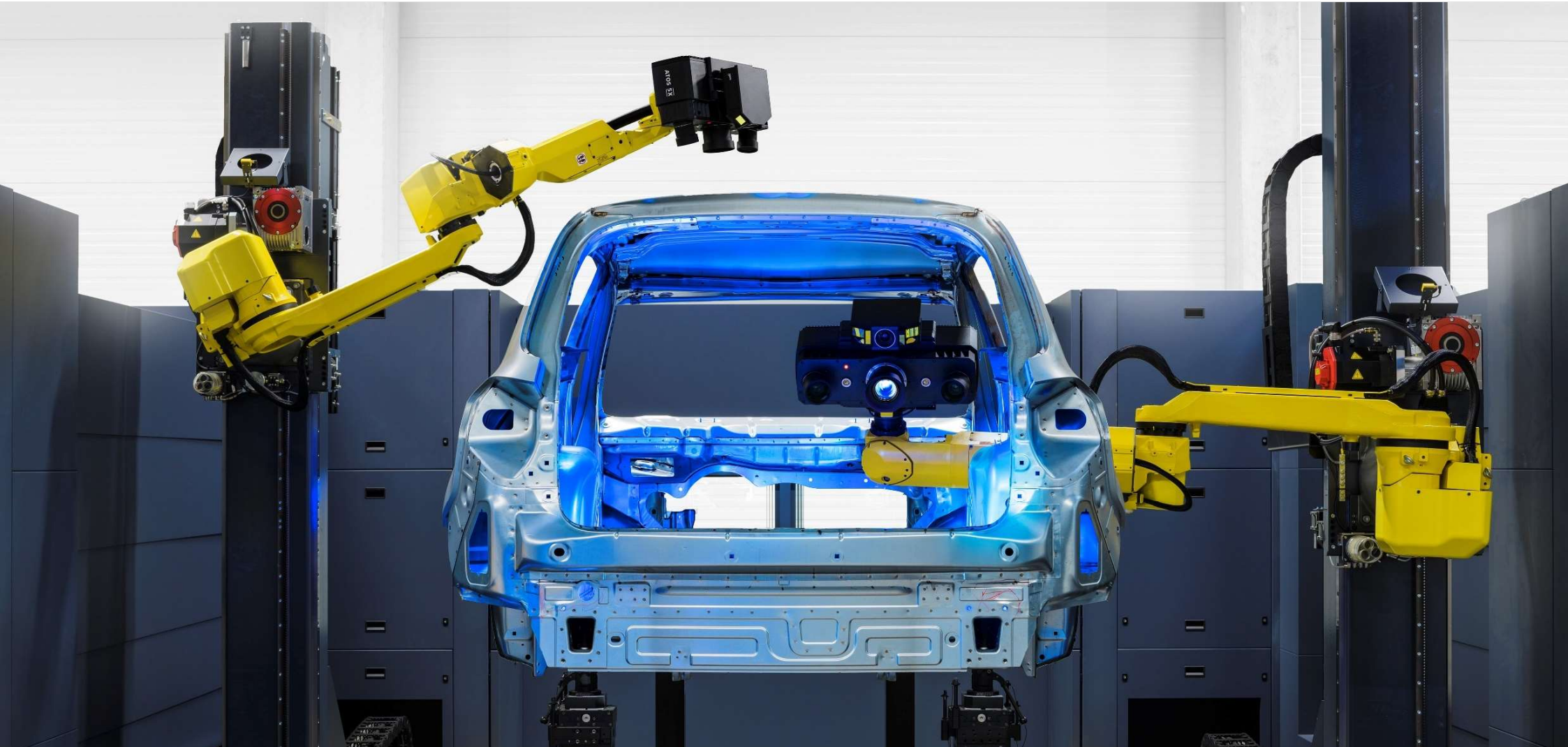
From above / From below

From the side / From inside



ScanBox Series 7 & 8

- 8-axis kinematics



ScanBox Series 7

- Measuring large and heavy parts



ScanBox Series 7

• Overview

- Optical 3D measuring machine for the automated and production-related dimension analysis
- Ideal for measuring hang-on parts, castings and tools
- High-speed scanning with ATOS 5 and ATOS 5X
- Higher throughput due to up to two working areas
- Multi-part fixture allows for measuring all hang-on parts without changing the fixtures
- **Key applications**
- Comparison in the try-out phase
- Quality assurance in production



ScanBox Series 8

- Measuring entire car bodies and large parts



ScanBox Series 8

• Overview

Optical 3D measuring machine for the automated and production-related dimension analysis

Ideal for measuring large parts such as bodies in white, hang-on parts, marine engines and tools

High-speed scanning with ATOS 5 and ATOS 5X

Higher throughput due to up to three working areas

Multi-part fixture allows for measuring all hang-on parts without changing the fixtures

Key applications

Quality assurance in production

Full-field acquisition of cast blanks

Quality control of milling tools

Tool maintenance

Analysis in master jig and cubing



ScanBox Series 8

- Double robot setup

- **Duplex operation possible**
 - Simultaneous, coordinated operation of two robots in one measuring cell
 - Creation of one common data set
 - Operation in one common coordinate system

- Allows for independent measurements of two robots on two different parts



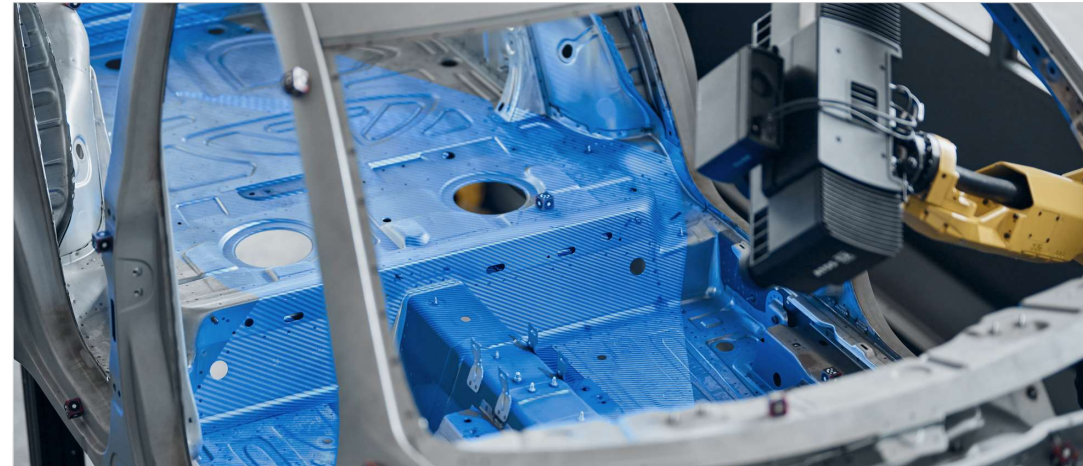
New 8-Axis Kinematic



ScanBox Series 8

- Applications

- Full-field acquisition of cast blanks
- Quality control of milling tools
- Quality assurance in production
- Tool maintenance
- Analysis in master jig and cubing
- For
 - Metal forming
 - Casting processes



Parts

- Assemblies (hood, door, trunk lid, body in white)

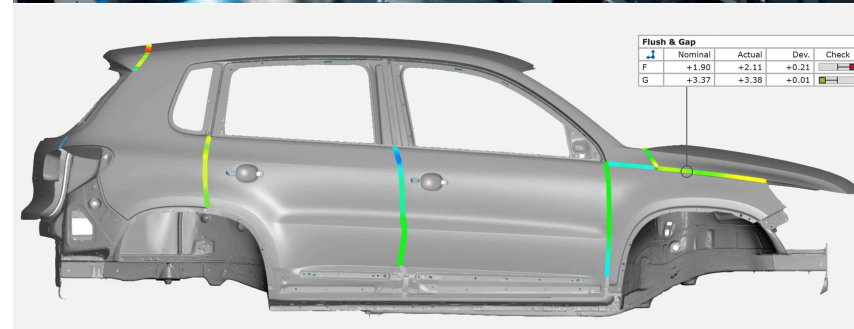
Typical applications:

Analysis in master jig and cubing

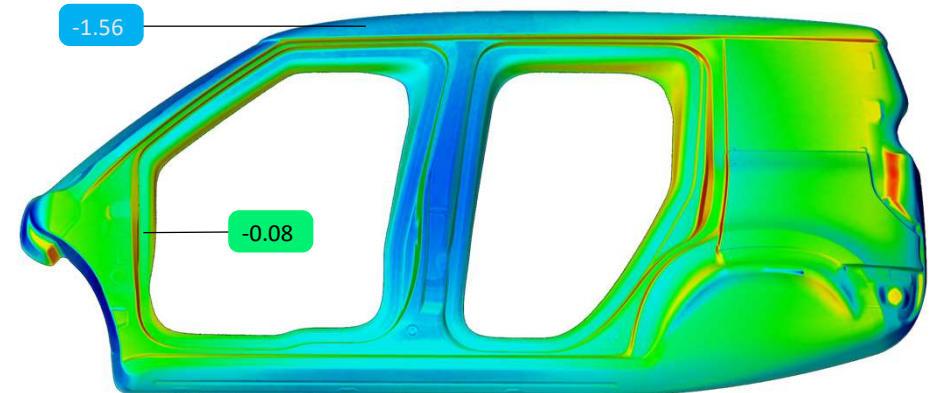
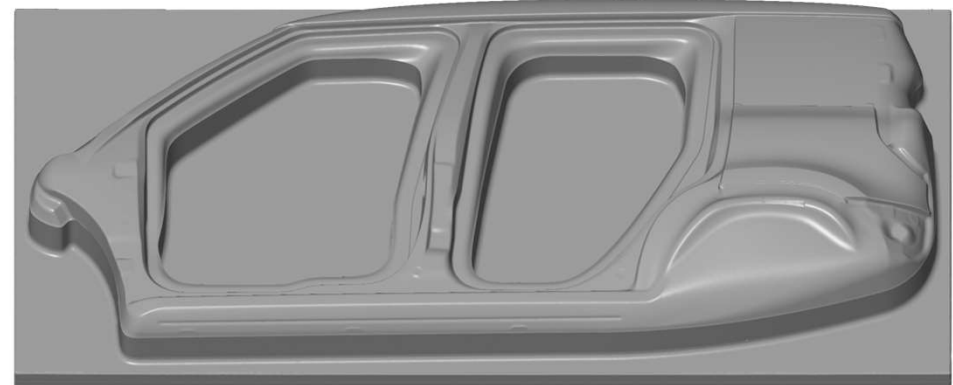
- Complete analysis measurement (flush & gap, hemmed edges, deviation visualization, inspection sections, ...)
- Virtual assembly
- Analysis of character/design lines

Quality assurance in production

- Acquisition of all inspection features and functional dimensions
- Trend analysis and statistical process control (SPC)
- Export of measuring results and reports to internal servers and databases



- **Parts**
- Cast blank, finished tool
- **Typical applications:**
- Full-field acquisition of cast blanks
 - Machining allowance control
 - Reduction of CNC machining times
- Quality control of milling tools
 - Springback compensation
 - Pro-active wear control / tool life extension
 - Tool archiving
- Tool repair
 - Fast root cause analysis
 - Rapid copy milling of broken dies
 - Localization and marking of welding/repair areas (back projection)



Accelerated measuring times

50–80% faster than traditional measurement technology

Easy to use

Automated process control at the touch of a button

Numerous application fields

Broad range of applications from toys to car bodies

Effective tool for analysis

Measurement, inspection and reporting all-in-one



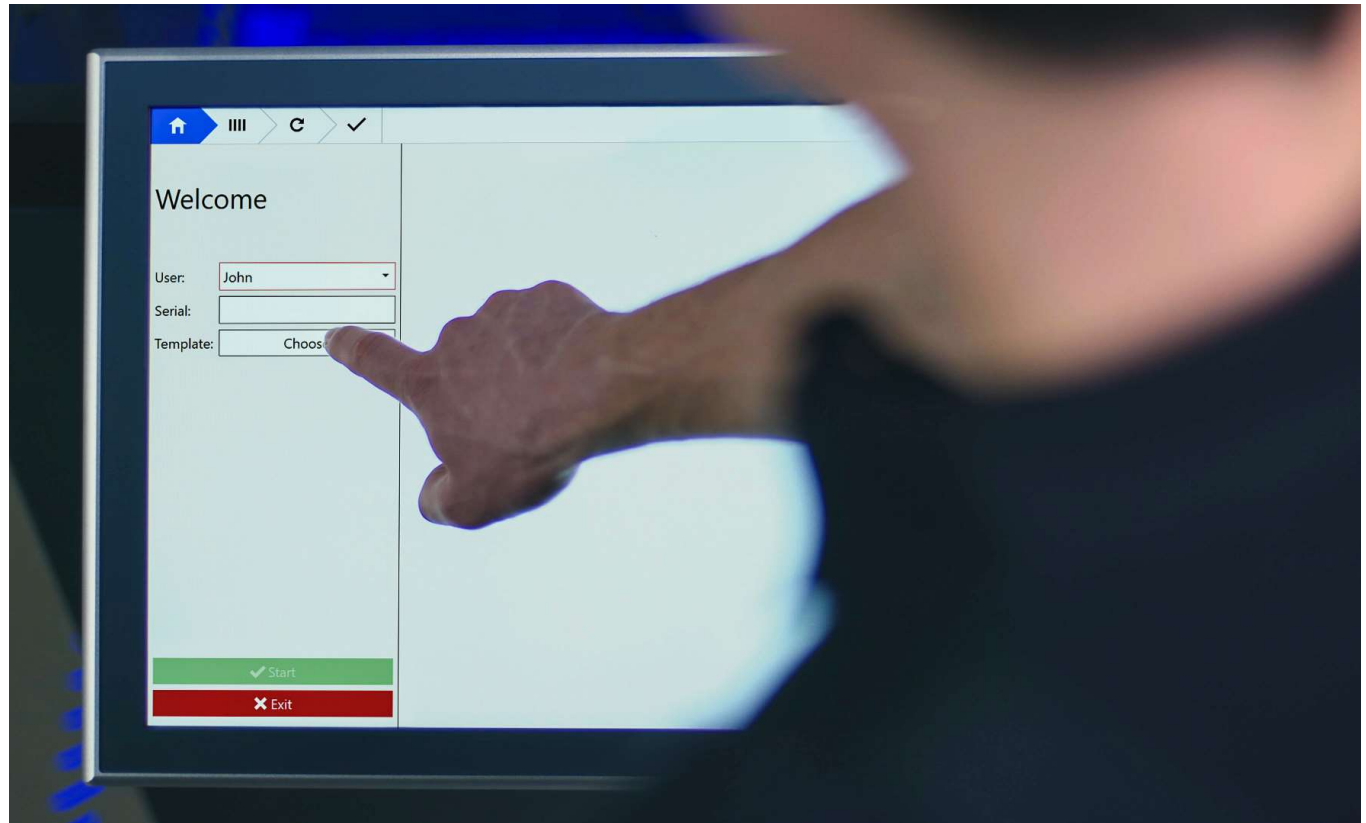
- Accelerated measuring times

- Generation of full-field 3D measuring coordinates
- Measurement and inspection of parts up to 80% faster as with traditional procedures
- Measurement of parts such as car doors at minute intervals during series
- Faster results and less scrap



- Easy to use

- Virtual measuring room (VMR) of the 3D measurement technology software visualizes the complete measuring procedure
- Smart Teaching replaces robot know-how
- Automatic execution of the complete measuring and inspection procedure
- Special Kiosk Interface for user-friendly operation and process control



- Effective tool for analysis

- Powerful combination of hardware and software
- Programming, digitization, inspection and reporting from a single source
- 3D measurement technology software with active parametric design and Python interface
- Smart Scanning



Thanks a lot for your attention


For any further details Contact us


APM Technologies 3D Pvt Ltd

A-40 F.I.E.E. complex,
Okhla Industrial area Phase-II
New Delhi – 110020
Phone – +91-11-41631416
Fax – +91-11-41631454

Email: info@apmtechindia.com
Email: sales@apmtechindia.com

www.apmtech.in





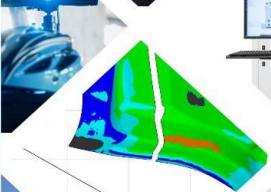


 Certified
Metrology Partner


 Your 3D Partner Since 1999


We cordially invite you to visit us at

IMTEX FORMING 2024 Hall : 3A, Stall: B119

19 - 23, January 2024, BIEC Bangaluru





Contact us : 011- 41631416
sales@apmtechindia.com
www.apmtech.in
Delhi | Pune | Bangalore | Chennai | Ahmedabad

SCANBOX