

## **Automotive Industry & 3D Reconstruction**

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# + Automotive Industry Applications

## ☐ 3D measurement and analysis of crash test vehicles

Accurate 3D crash deformation analysis while freely moving around the test vehicle for maximum measurement efficiency

Documentation of test results in accordance with regulatory requirements

3D crash dummy positioning relative to seat position

## ☐ Inspections & Quality Control for complex parts and assemblies

Cost-effective inspection processes, in less time

Geometric compliance analysis

Documented proof of specification compliance

## ☐ Manufacturing & Design

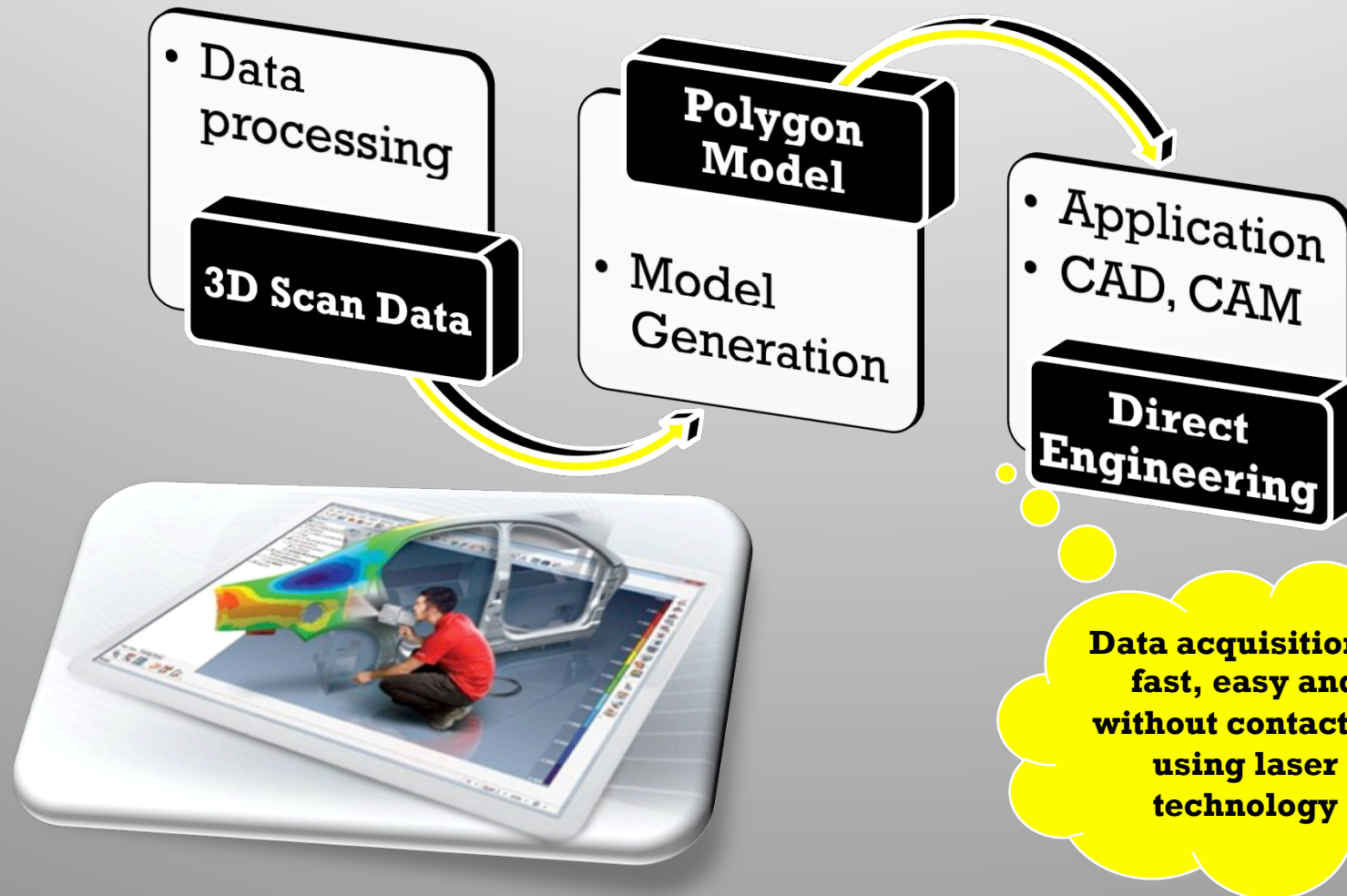
Reverse engineering of discontinued parts, prototypes, etc.

Design verification and manufacturing process validation

Analytics and visualization of interior and exterior spaces



# + Full Reverse Engineering Process



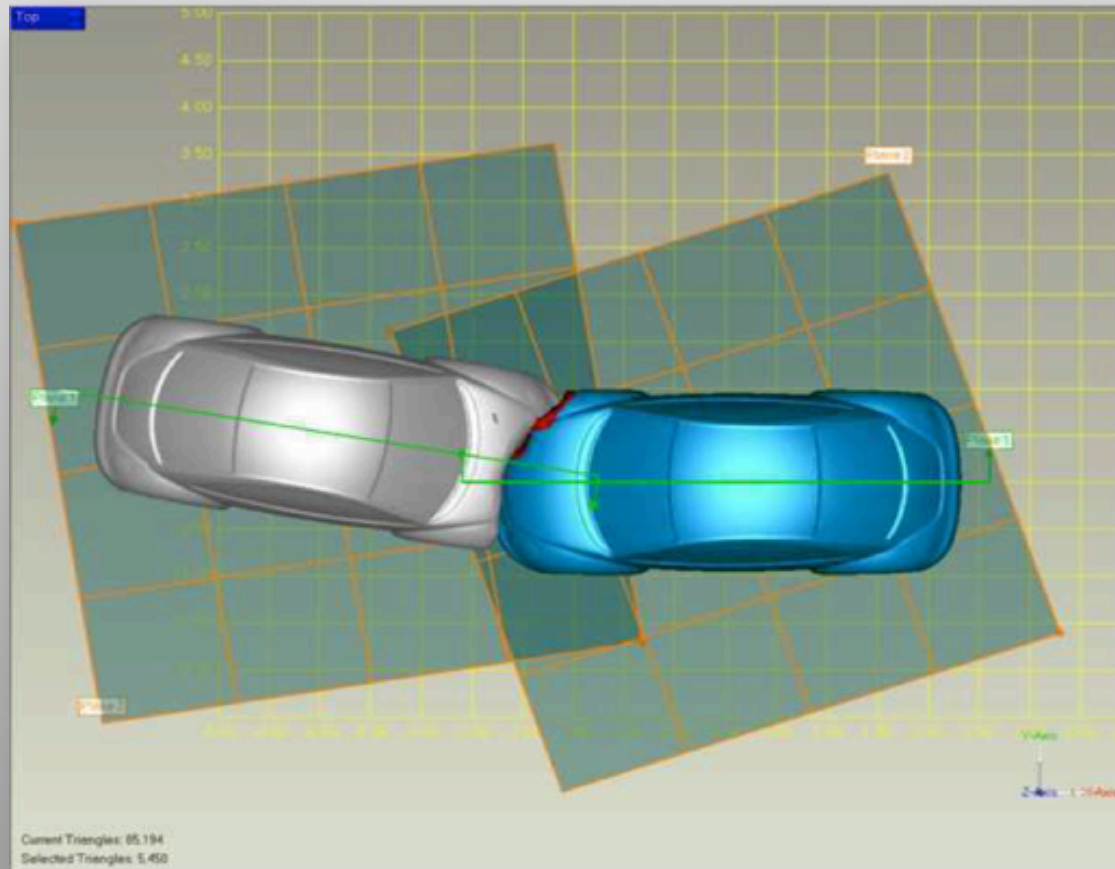


# 3D Reconstruction Examples

Structures

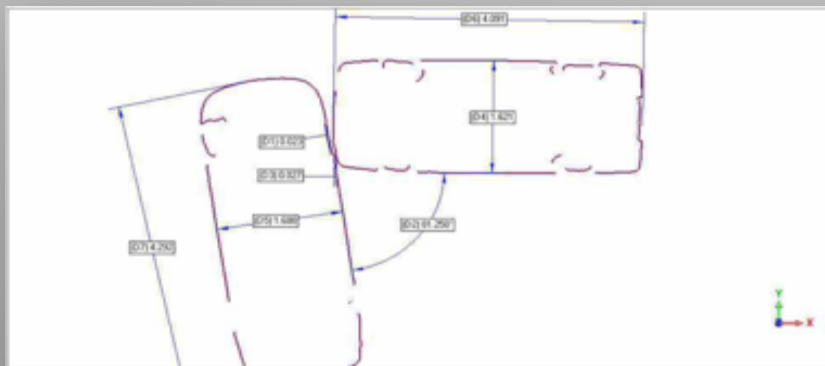
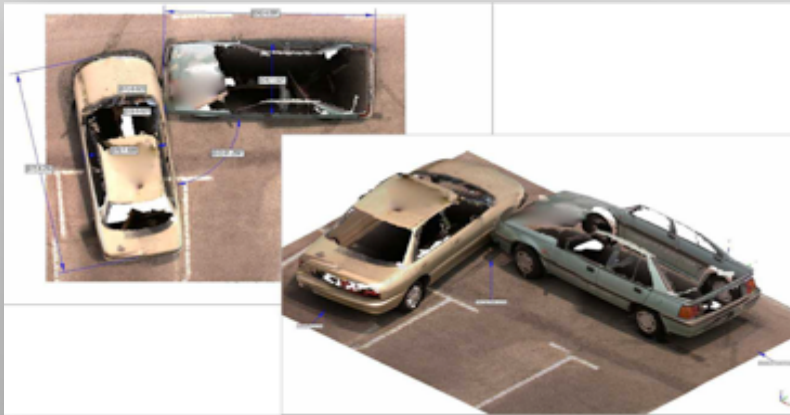


# + Vehicle alignment on crash area

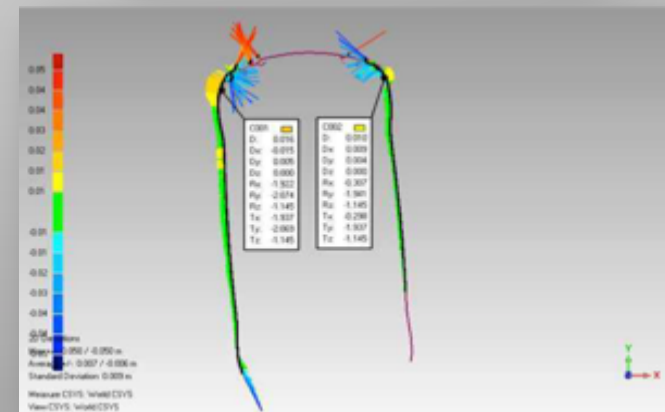
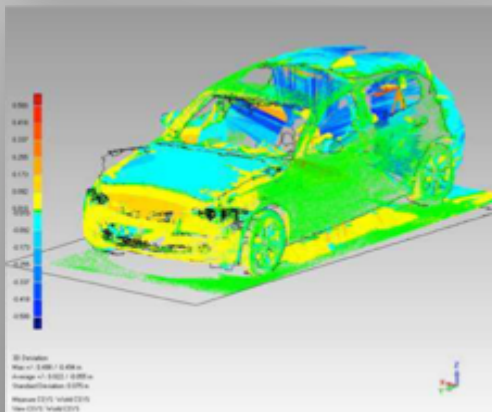
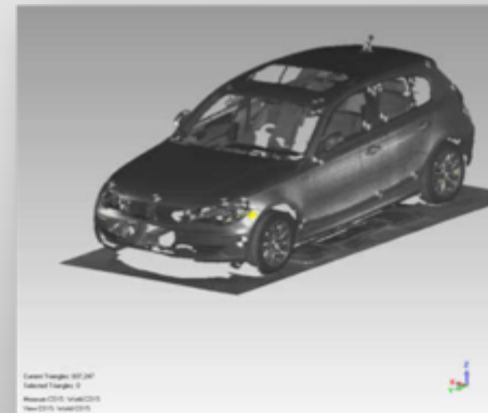




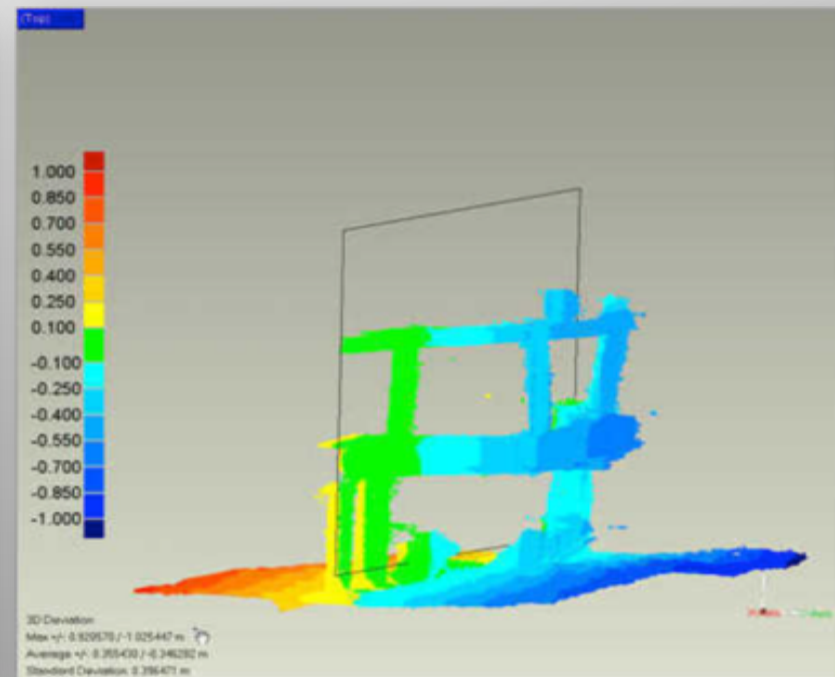
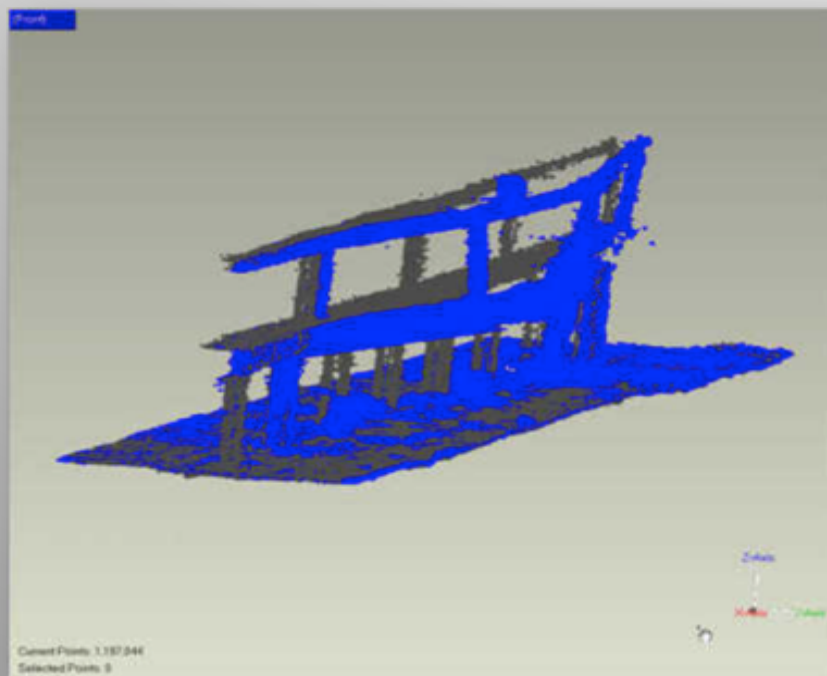
## + Vehicle collision analysis



# + Vehicle deformation measurement



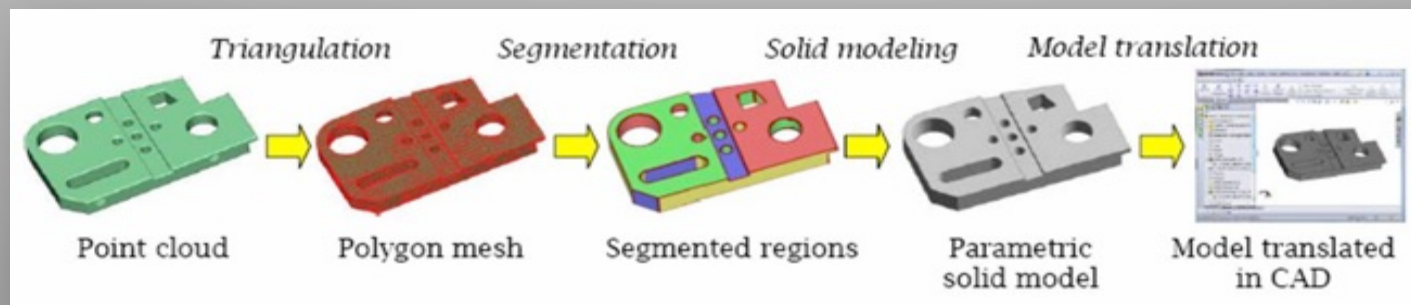
# + Barrier deformation





# + Creation of 3D CAD models from existing physical parts

- ❑ Determine original design intent, manufacturing processes and compatibility
- ❑ Update existing part documentation
- ❑ Manufacturing of next-generation parts to work with existing or outdated models
- ❑ Feasibility analysis with existing systems
- ❑ Competitive intelligence and analysis
- ❑ Design improvements and modifications





## 3D Reconstruction Examples

ATD Dummies & Seat



# + 3D crash dummy positioning relative to seat position

- ❑ Allow the engineer to get the dummy position in the seat and car environment without contact

No need to place markers or prepare the scene

Complete 3D acquisition in minutes

Accuracy less than 0.5 mm

**Improved FE  
simulation  
correlation**



# + Reduce test variability

- ❑ **By helping you to select the right ATD dummy candidates for the specific test**

You have figured out that 2 certified ATD dummies for the same test may have dimension differences

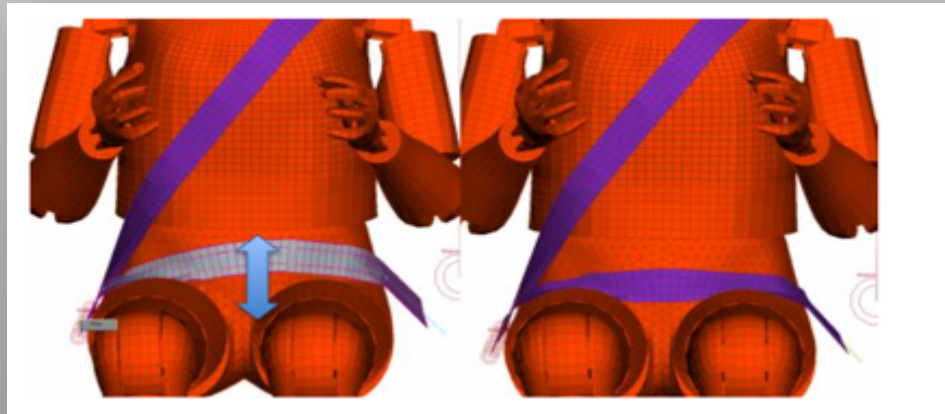
- ❑ **FE model interaction for better correlation**



**Select the best ATD candidates from your dummy fleet based on the 3D scan Data Base**

# + Improved FE simulation Predictability & Correlation

- ❑ By having the perfect belt path
- ❑ Handle the FE simulation to create the Perfect seat belt path





**Learn More**





## **+ Interested in such developments ?**

- ❑ Exposed your issues and needs to see how a 3D Acquisition and Reconstruction can help you become more successful**

Pre & Post Crash, Deformation, ATD, FE simulation and more ...



## Contact



***CTSim GmbH***

***Im Weiher 12  
69121 Heidelberg  
Germany***

**Dr. MALAK Arnould**

Tel: +49 (0)6221.7271510

Fax: +49 (0)6221.7271511

Email: [info@ct-sim.com](mailto:info@ct-sim.com)

