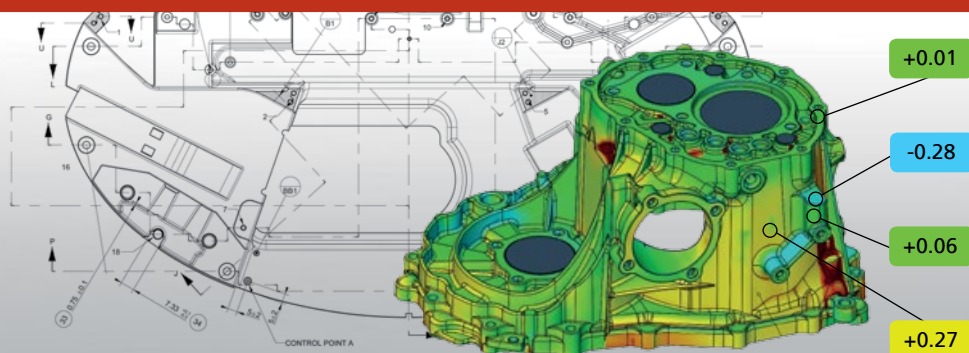


GOM Inspect Software



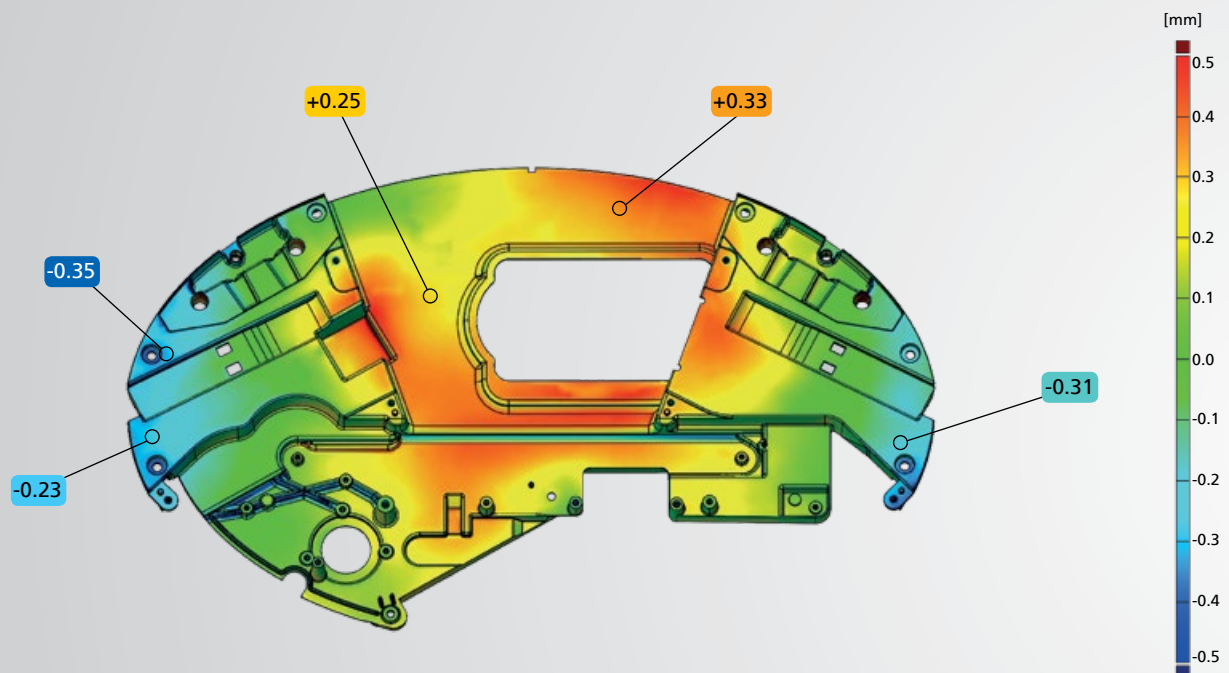
Evaluation Software for 3D Point Clouds

3D Inspection
Polygon Mesh Processing
Share Measurement Results



GOM Inspect Professional

Shape and dimension analysis, 3D inspection and mesh processing for 3D point clouds and CAD data sets.



GOM Inspect Professional and GOM Inspect are software packages for the analysis of 3D measurement data for quality control, product development and production.

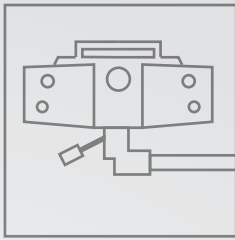
Industrial Requirements

Optical 3D metrology is growing in importance in industrial processes. More measurement data is continuously produced. This data needs to be processed and analyzed, and traditional tools are often not able to meet modern demands anymore. The GOM Inspect software fulfills today's industrial requirements and ensures short development times, optimized production processes and high process safety.

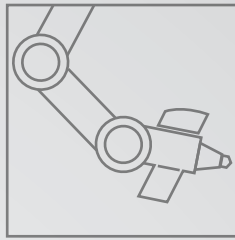
Software for 3D Point Clouds

GOM Inspect Professional polygonizes point clouds into high-quality 3D mesh data and offers a range of mesh processing functions. Inspection is based on a comparison of measurement data with CAD data and an analysis of false color plots, 2D sections or multiple inspection points. The free GOM Inspect software allows easy exchange and further analysis of the measurement results.

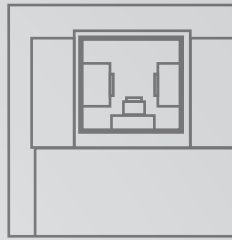
Certified Software for 3D Metrology



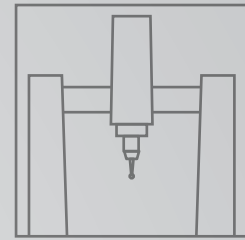
3D Scanners



Laser Scanners



CTs



CMMs

In modern industrial metrology, different measuring technologies are implemented based on application requirements. These solutions produce data for processing and evaluation, and often many different software packages are used. GOM Inspect Professional offers inspection and evaluation functions for measurement data from GOM's measuring systems, 3D scanners, laser scanners, CTs, CMMs and other sources.

In order to ensure precise measurement accuracy, both GOM Inspect Professional and GOM Inspect software have been tested and certified by PTB and NIST institutions. The accuracy of the evaluation software is tested by comparing the results from the software with reference results. The GOM software has been placed in Category 1, the category with the smallest measurement deviations.

Free GOM Inspect Software

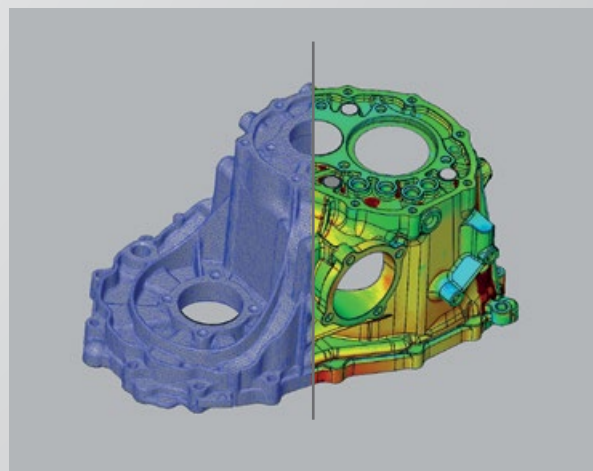


GOM Inspect is a free 3D inspection and mesh processing software for shape and dimension analysis of 3D point clouds and a viewer for measurement results and CAD data.

The free software is designed for users who need to process and evaluate 3D data.

GOM Inspect contains passive parametric functionality. This ensures traceability of measurement data, however, the creation of templates, Teaching by Doing and parametric inspection functionality are only available in GOM Inspect Professional.

GOM Inspect enables metrologists, colleagues, suppliers and customers to jointly evaluate and analyze their measurement results.

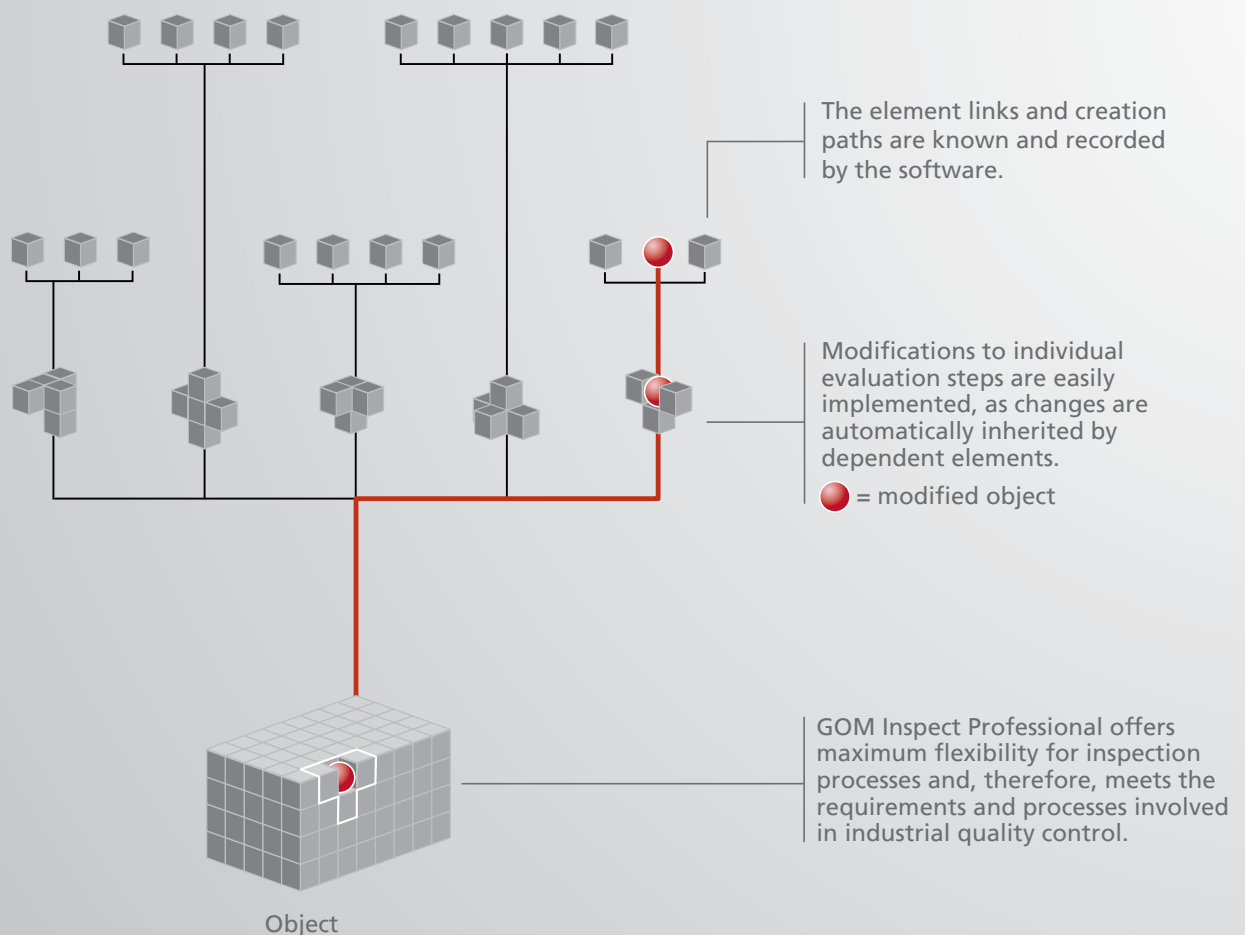


Parametric Software

The GOM software is based on a parametric concept, which forms the underlying foundation for every single function. This parametric approach ensures that all process steps are traceable, ensuring process reliability for measurement results and reports.

Parametric Inspection

With GOM's parametric concept, each individual element retains its creation path within the software structure. All actions and evaluation steps are fully traceable and interlinked. Individual elements can be modified and adjusted at any time, and a one-button solution updates all dependent elements automatically after changes have been made.



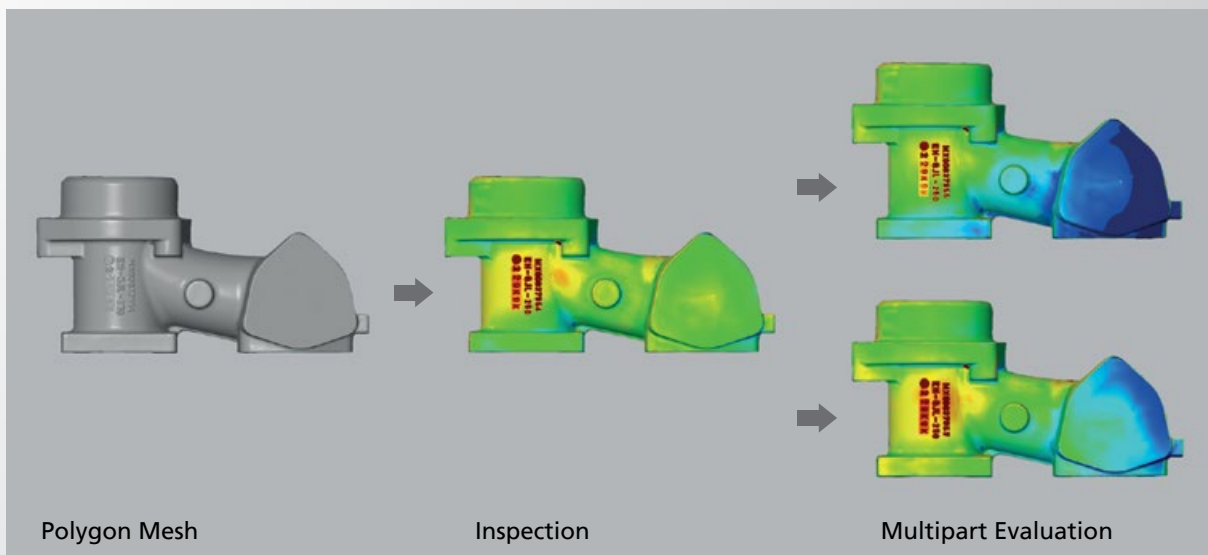


Traceability

The exact creation parameters and the selection of measurements and points for each element can be traced to source, verified, and, where necessarily, adjusted. The traceability of all measurement

results is guaranteed. This property in the parametric concept plays a vital role in the reliability of the quality control process.

- 🔍 **Free GOM Inspect:** Parametric inspection is a passive module in the free software package. All evaluation steps for an element can be traced but not adjusted or modified.

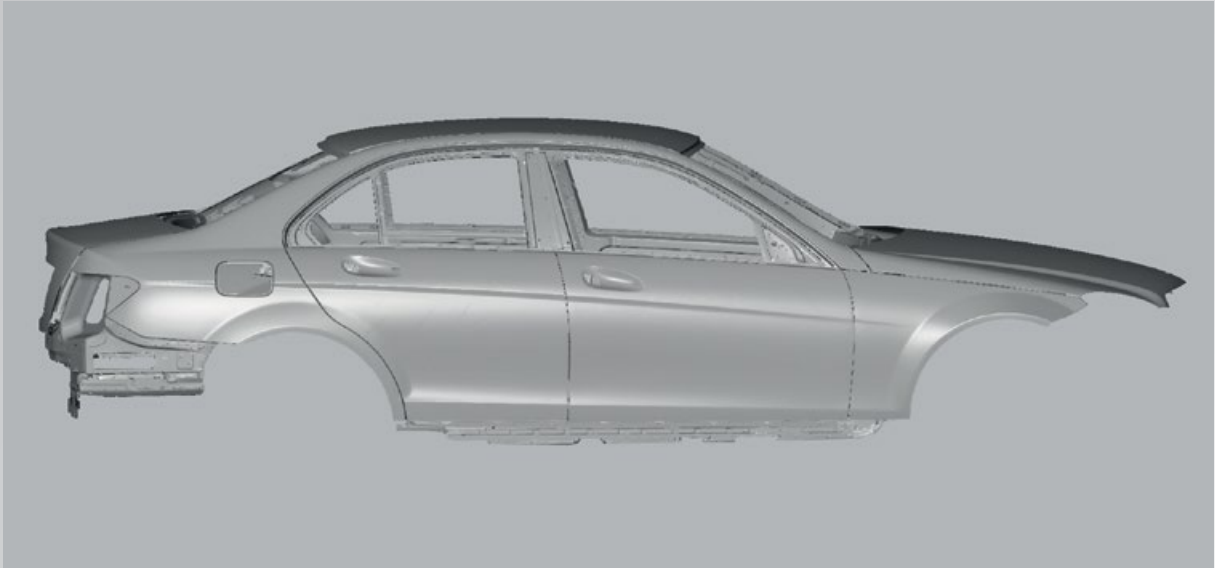


Teaching By Doing

With Teaching by Doing, any completed evaluation can easily be applied to two or more parts. Thanks to the parametric design, the software automatically stores each individual inspection step.

All evaluation steps can be operated without scripting, previous planning or user intervention, so that no time is spent on programming.

- 🔍 **Free GOM Inspect:** Teaching by Doing is not available in the free GOM Inspect version.



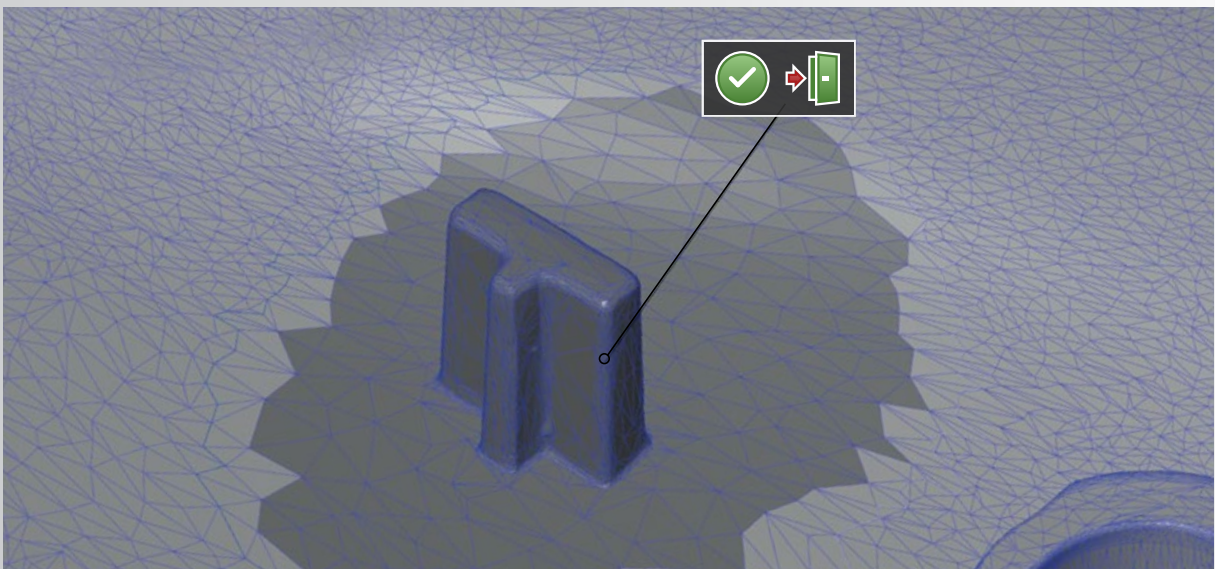
Polygon Mesh

3D meshes for parts and components are calculated from 3D point clouds for visualization, simulation, reverse engineering and CAD comparison. The

precise polygon meshes can be exported to a number of standard formats such as STL, G3D, JT Open, ASCII and PLY.



Free GOM Inspect: Data from 3D scanners, laser scanners, computer tomographs, CMMs and other sources can be imported and polygonized in GOM Inspect.



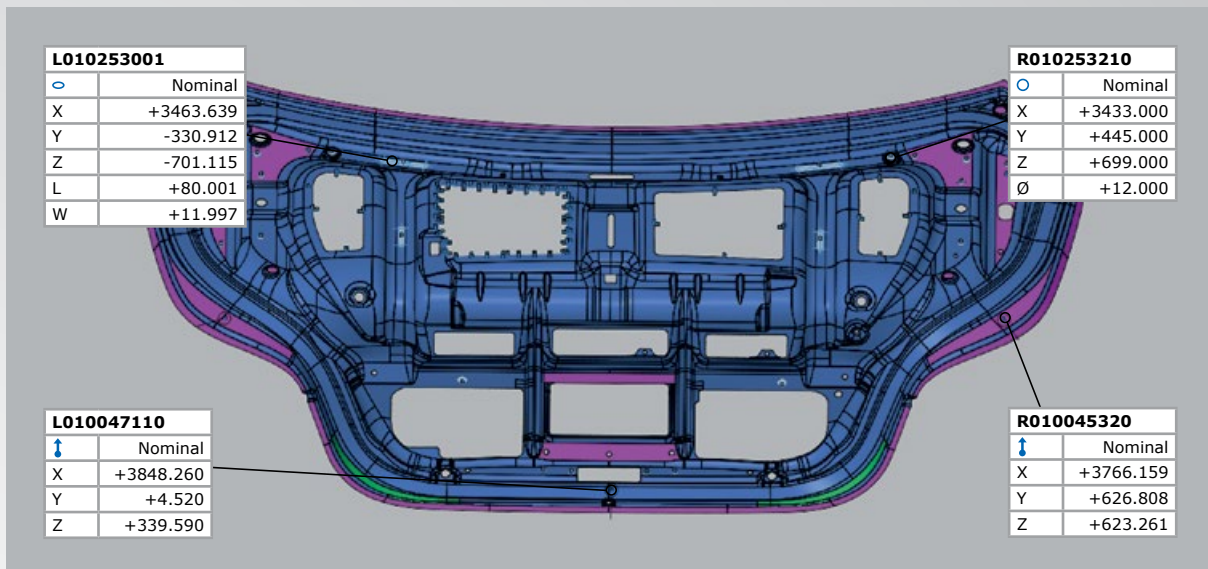
Mesh Processing

Polygon meshes can be smoothed, thinned and refined. In addition, holes in the mesh can be filled and curvatures extracted. The mesh is processed

using curvature-based algorithms and tolerances. The software provides the user with a live preview of each processing step before executing it.



Free GOM Inspect: GOM Inspect contains all mesh processing functions.

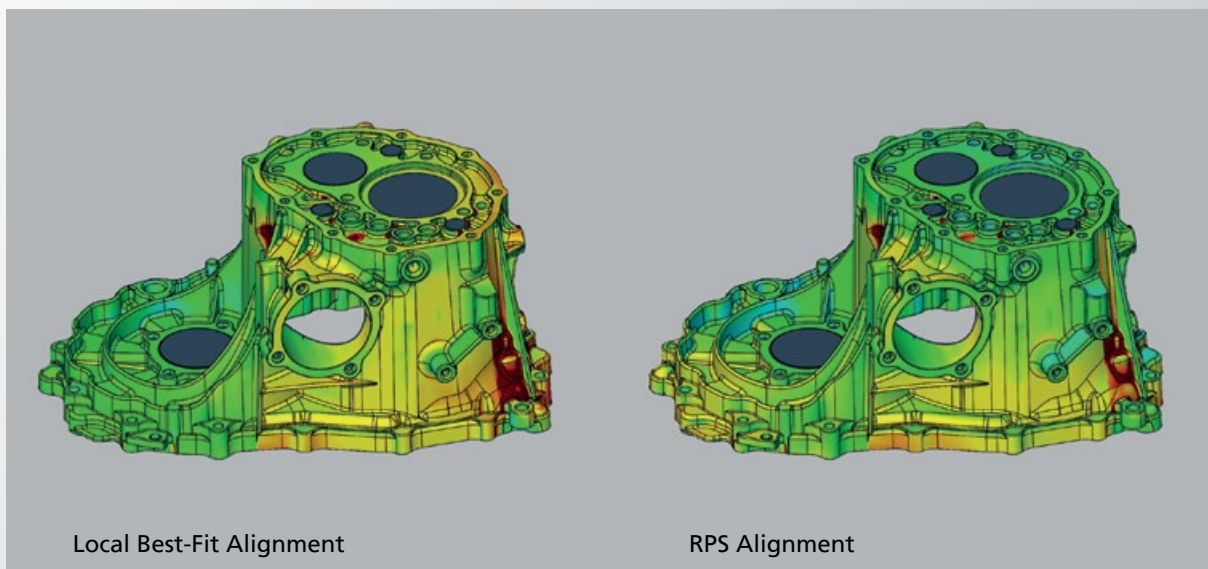


CAD / Measurement Plan Import

Neutral CAD formats such as IGES, JT Open and STEP, as well as native formats like CATIA, NX, Solidworks and Pro/E, can be imported into GOM Inspect Professional at no extra cost. In addition, measurement plans in CSV, DMI, ASCII, IPP and FTA data

formats can be imported as the basis for dimensioning and inspection. The individual data formats are imported via drag & drop and are automatically identified and assigned by the software.

Free GOM Inspect: Neutral CAD formats and measurement plans can be imported and read in GOM Inspect.

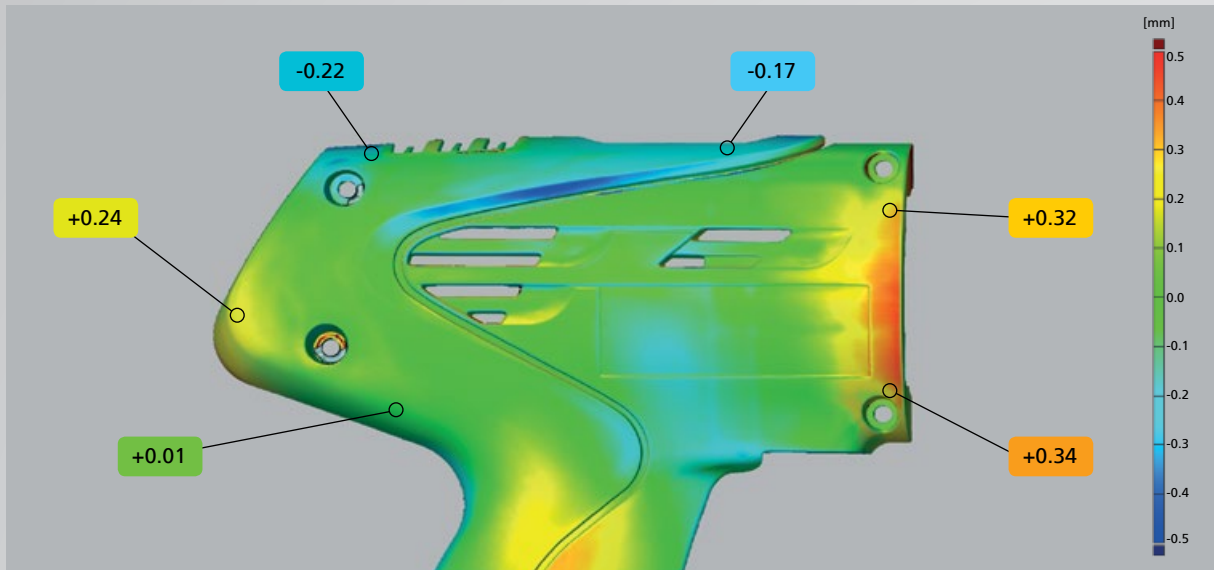


Alignment

The GOM software contains all standard alignment functions. These include RPS alignment, hierarchical alignment based on geometry elements, reference points and various best-fit procedures such as global

best fit and local best fit. Customers can also use their own specific alignments, for example turbine blades, balanced beam or equalized nested alignments.


Free GOM Inspect: The free software package comes with all standard alignment functions. User-defined alignments can be displayed, but not modified.

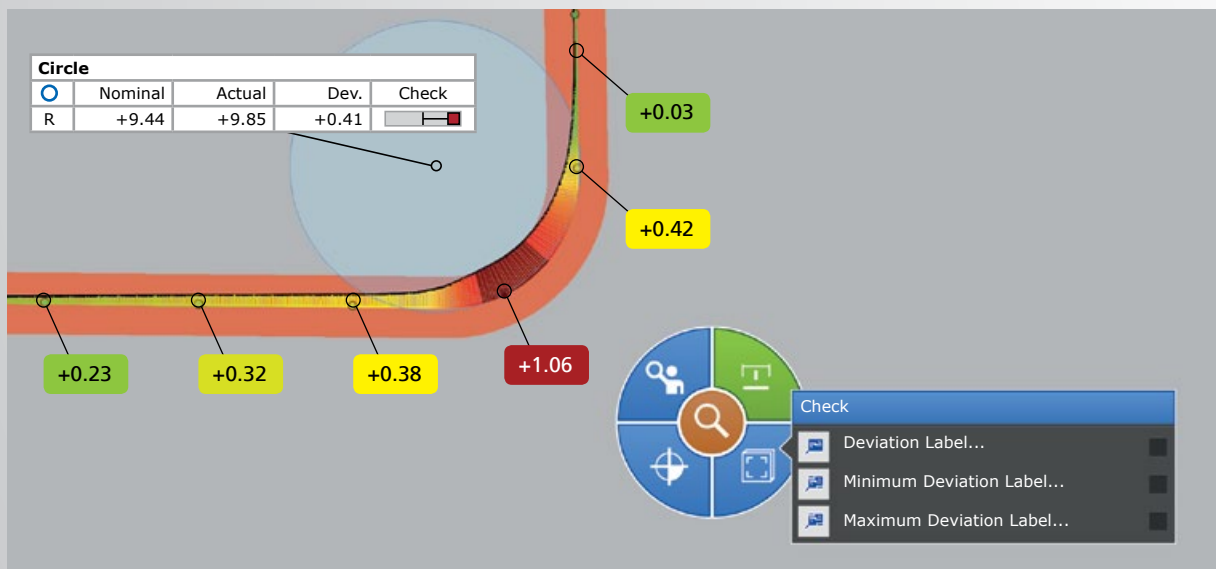


CAD Comparison

The computed polygon meshes describe free-form surfaces and primitives. These can be verified by comparing surfaces with a technical drawing or directly with a CAD data set. A 3D analysis of

surfaces as well as a 2D analysis of sections or points can be implemented in the software. CAD-based generation of primitives such as lines, planes, circles or cylinders is also possible.


 **Free GOM Inspect:** All inspection and CAD comparison tools are available in GOM Inspect.

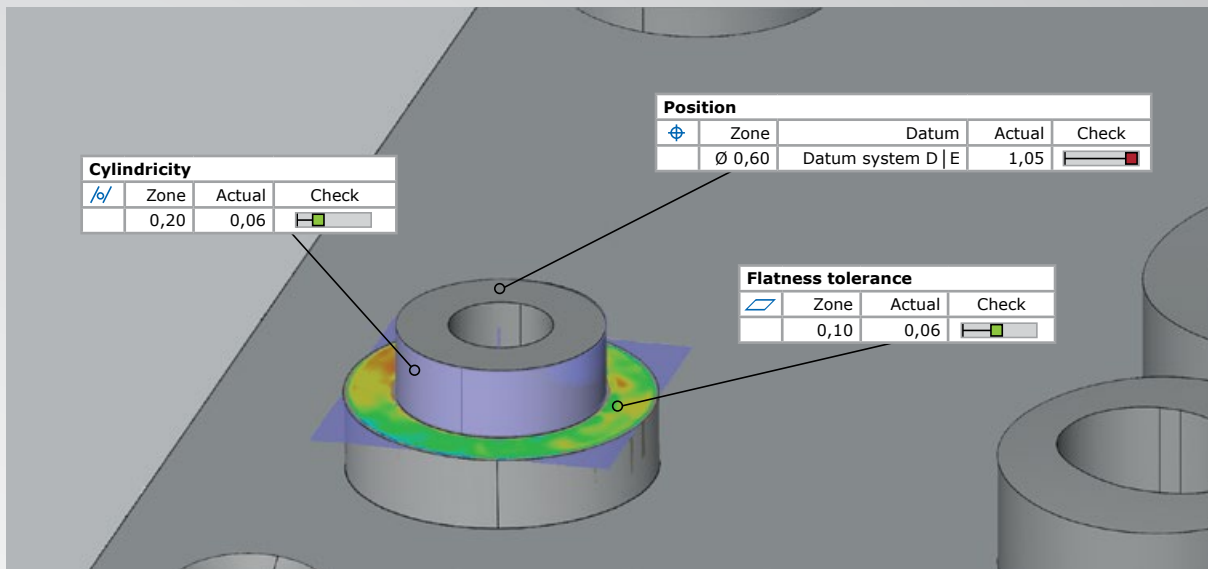


I-Inspect

The I-Inspect button stands for intelligent inspection and guides operators through the inspection process. I-Inspect suggests suitable measurement

principles and inspection criteria to suit the selected element. With I-Inspect, even complex inspection tasks can be implemented quickly and easily.

 **Free GOM Inspect:** The I-Inspect button is available in GOM Inspect without any restrictions.

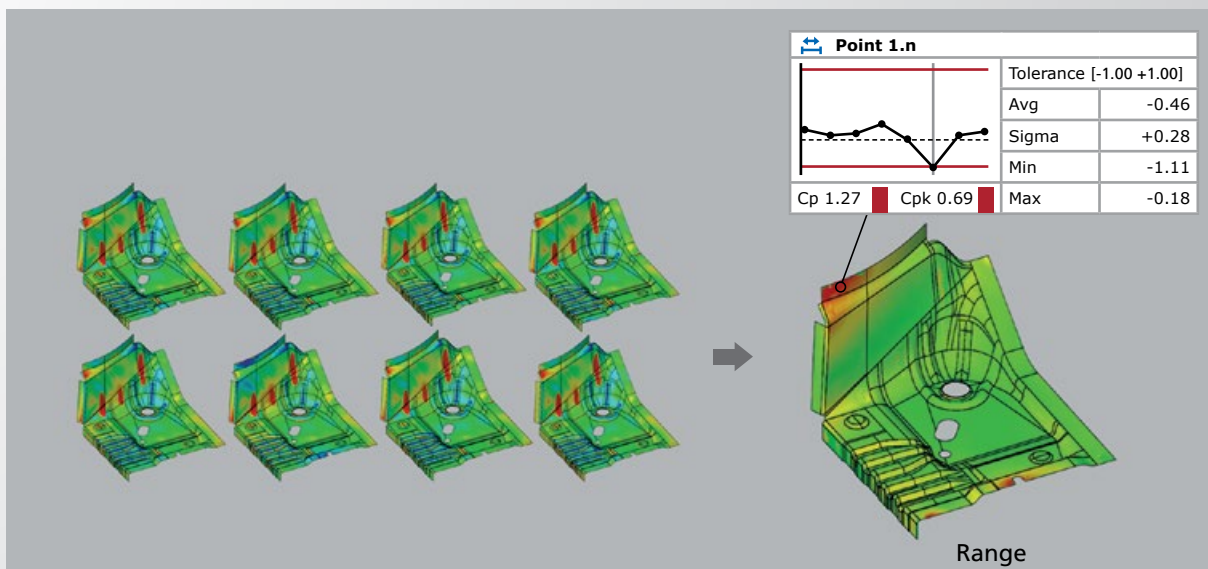


GD&T Analysis

In contrast to basic measurement analyses, GD&T analysis focuses on the functional aspect of a part. The software conforms to ASME und ISO standards and allows extensive GD&T analysis, including

planarity, parallelism and cylindricity, two-point distances, maximum material conditions as well as position tolerance in local and global coordinate systems.

Free GOM Inspect: Full GD&T analysis can be executed in the free GOM Inspect software.

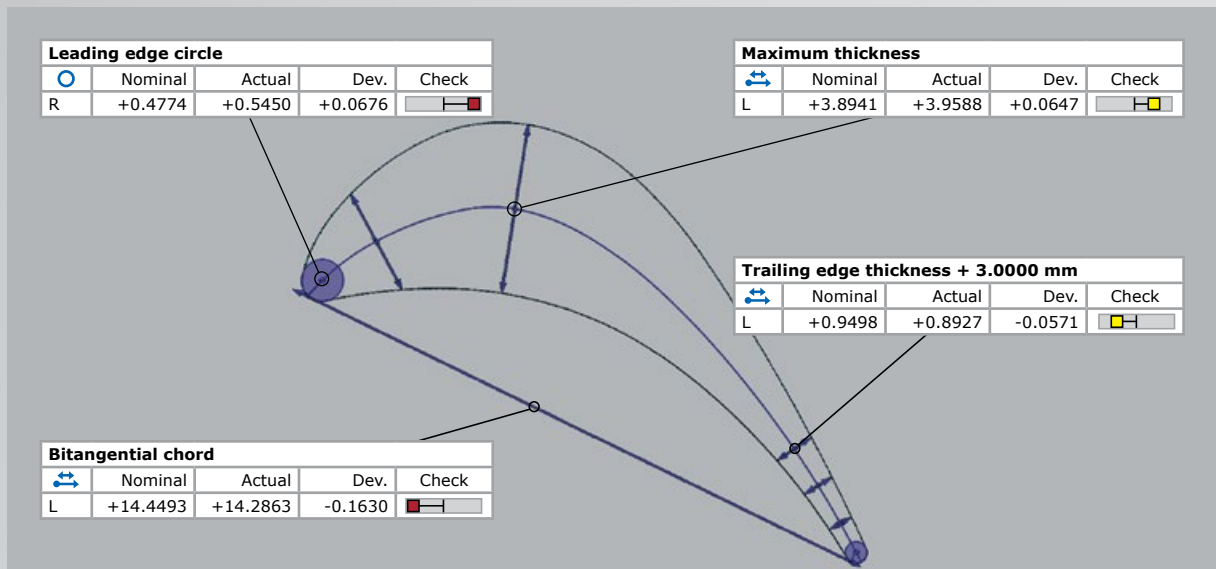


Trend, SPC and Deformation Analysis

The underlying parametric concept of the GOM software makes it possible to implement trend analysis for multiple evaluations, for example, in statistical process control (SPC) or for deformation analysis.

This enables full-field evaluation of several parts or stages within a single project and offers functionalities for determining statistical analysis values such as Cp, Cpk, Pp, Ppk, Min, Max, Avg and Sigma.


Free GOM Inspect: Functions for trend analysis are fully integrated in GOM Inspect. However, trend projects cannot be generated.

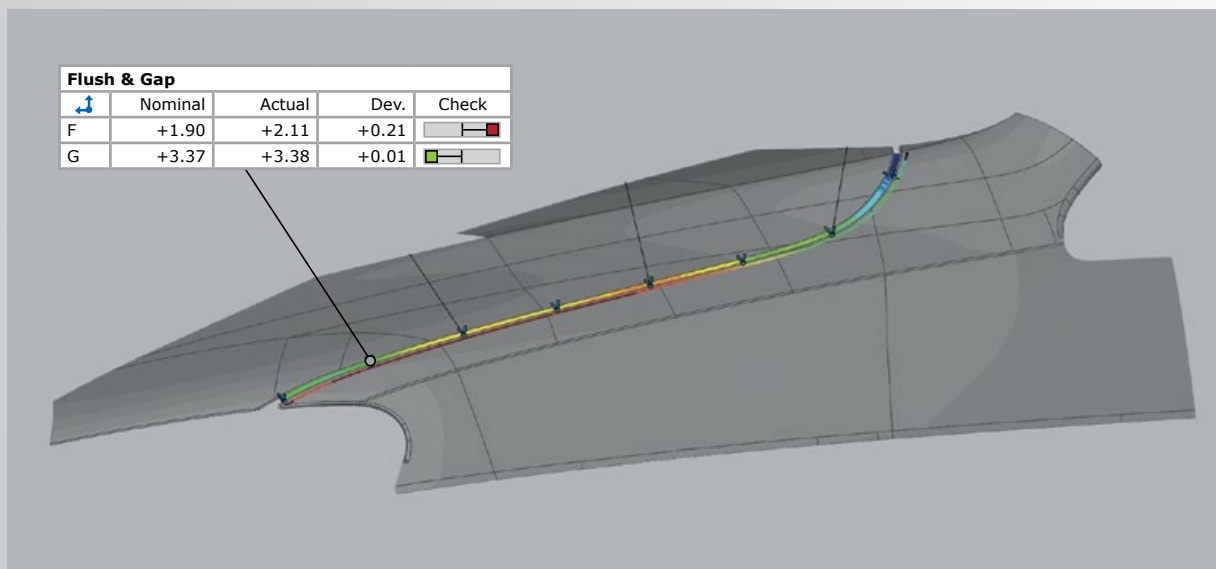


Airfoil Inspection

GOM Inspect Professional combines general inspection functions with application-specific evaluations. Native quality control functionality for the analysis of airfoils and turbine blades include: inspection of

profile mean line, profile centroid and profile thickness of turbine blades on the basis of 2D sections. The profile's center of gravity, radii and twist can also be calculated.


 **Free GOM Inspect:** The free version of the software contains the full array of airfoil functions.

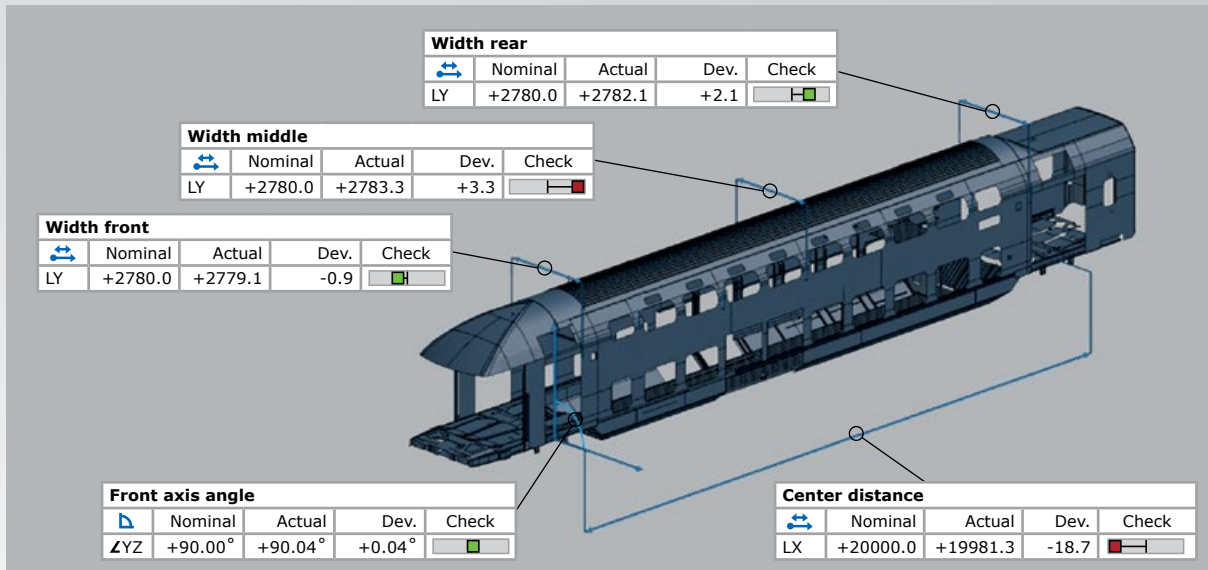


Curve-Based Inspection

GOM Inspect Professional closes the gap between point-based and surface-based inspection. Full-field digitized data is used to apply construction functions for curves and to visualize their individual properties.

Edge curves can, for example, be captured, radii and character lines analyzed and spline curves created. Flush & gap analysis is another element provided in curve-based inspection.

 **Free GOM Inspect:** All curve functions can be applied.

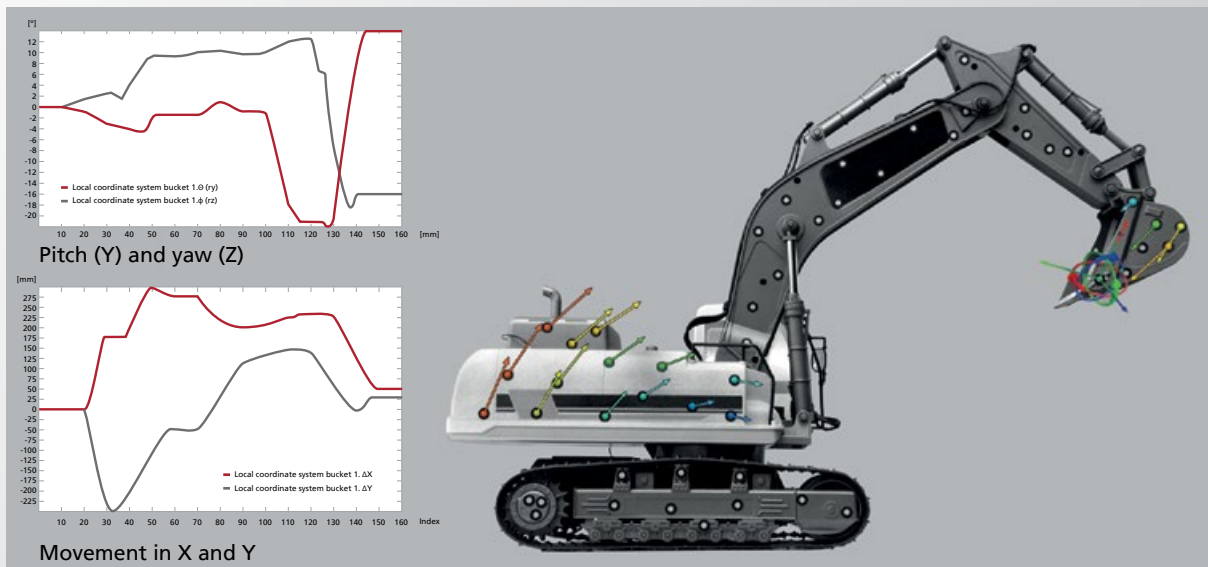


Point-Based Inspection

All evaluation functions can also be used on point clouds. This includes, for example, measurement of distances between individual points and a comparison of points with the CAD model. Construction

functions can then be applied to create geometry elements based on several points. This all allows GD&T analysis on the generated elements, including flatness, cylindricity or positional accuracy.

Free GOM Inspect: Point-based inspection can be performed without any restrictions in the GOM Inspect software.

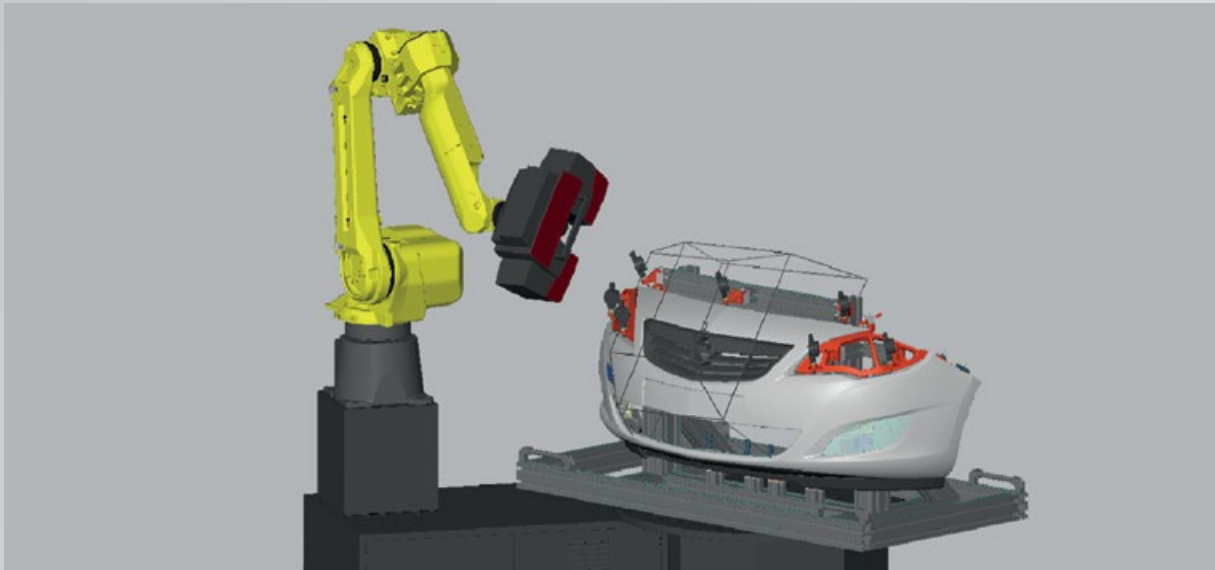


Point-Based Motion and Deformation Analysis

Analysis of motion and deformation is carried out using a component concept. Points are divided into coherent groups and defined as components. Transformations or corrections to rigid body movements can then be calculated for these components. 6DoF

analysis can be applied to determine the translation and rotation movements in all directions. Vector fields then help visualize point movements and deformation over time.


Free GOM Inspect: Existing data can also be processed in the free GOM Inspect software.

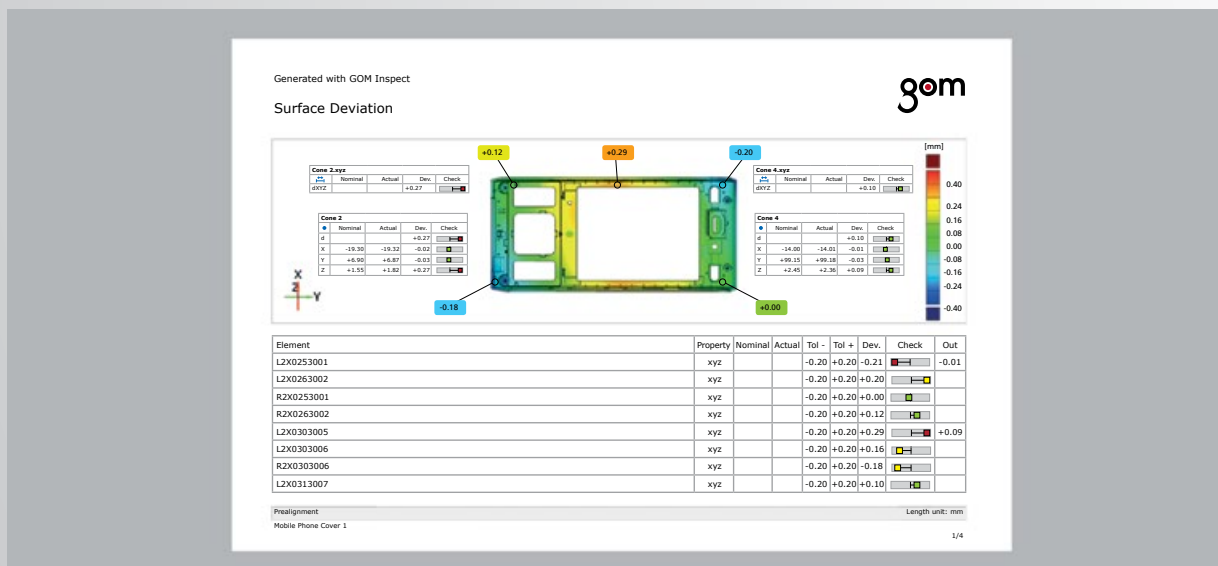


Virtual Measuring Room (VMR)

The VMR is a virtual, yet functional representation of the real world. The VMR is a fully integrated solution, allowing for the complete reproduction of automated measurement processes. Combining the parametric inspection processes offered by GOM Inspect

Professional, the VMR enables the execution of automated measurements: import of measurement plans, offline and online programming, 3D measurement simulation, collision control, safety, data capturing, inspection and reporting.


 **Free GOM Inspect:** GOM Inspect can be used as a viewer for the Virtual Measurement Room.



Reporting

The reporting module enables users to create reports containing snapshots, images, tables, diagrams, text and graphics. The results can be presented and edited in the user interface as

well as exported to a PDF document. Custom templates are reusable, and each snapshot stored in a report can be restored in the 3D window.

 **Free GOM Inspect:** The report module is fully integrated in the free software package. Only exception: It is not possible to create personalized report pages.

Industries

The GOM Inspect software combines basic inspection tools with application specific functions supporting a broad range of different industry sectors and their varying requirements.

Metal Forming

Flush & gap, Trim & springback, Hemmed edges, Design lines, Hole pattern (grayscale feature)

Injection Molding

Material thickness, Part warpage & shrinkage, Shape and position tolerances, Dimensional analysis, Assembly analysis, Local alignments

Design, Reverse Engineering, 3D Modeling

Mesh processing, Section generation (export), Golden mesh

Casting

Allowance check/machining allowances, Material thickness, Part warpage & shrinkage, Shape and position tolerances, Dimension analysis

Airfoil, Turbines and Power Generation

2D section analysis, Profile mean line, Centroid, Edge points/curvature, Center of gravity, Twist, Alignments, Standard alignments, User-specific alignments

Prototype Development, 3D Printing

Mesh processing, Volume determination

Resources

GOM offers diverse support options for both GOM Inspect and GOM Inspect Professional software.

Online Support

Manuals & Tutorials

Software users have access to manuals, written training documentation and application-specific video tutorials.

Sample Data

Numerous data sets covering both software features and different application areas are available to download in the GOM Support Area.

Knowledge Base

The GOM Knowledge Base contains around 500 articles and hints and tips for frequently asked hard- and software questions.

Online Community

GOM Forum

Over 5000 GOM Inspect users exchange experiences and questions with fellow experts and the GOM team around the world.

GOM Support

E-Mail and Telephone Support

GOM's support team delivers professional advice on both hard- and software and also supports customers with specific application and process knowledge.

Training

GOM offers training for both beginners and advanced users. In hands-on training sessions, users learn how to implement and operate the software.

Precise Industrial 3D Metrology

The GOM Inspect software can be implemented in diverse applications for analysis of both third-party data sets as well as data from GOM metrology systems.



ATOS is an industrial optical 3D scanner, capturing the complete geometry of a part in a high-resolution point cloud and delivering precise 3D measurement data for 3D inspection and reverse engineering.

Global Partner for Optical 3D Coordinate Measurement Techniques

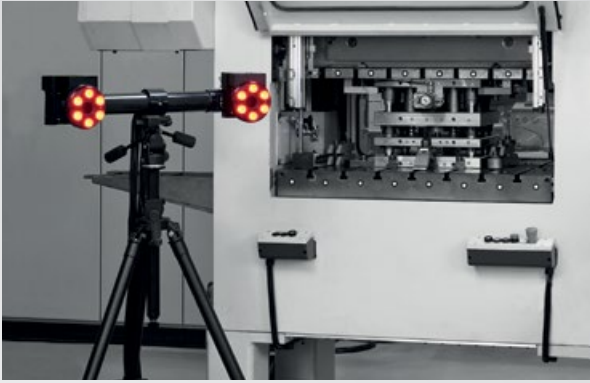
Global GOM network for sales and support

GOM is a global industrial manufacturer that develops and produces optical measurement solutions and technologies for 3D coordinate measurement and deformation analysis.

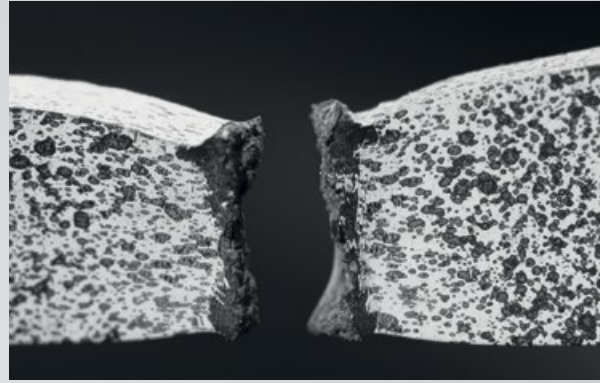
GOM's measuring systems are based on digital image processing and are used in product development, quality assurance as well as in material and component testing. GOM's metrology solutions

deliver full-field data, they help increase product quality and accelerate modern product development and production processes.

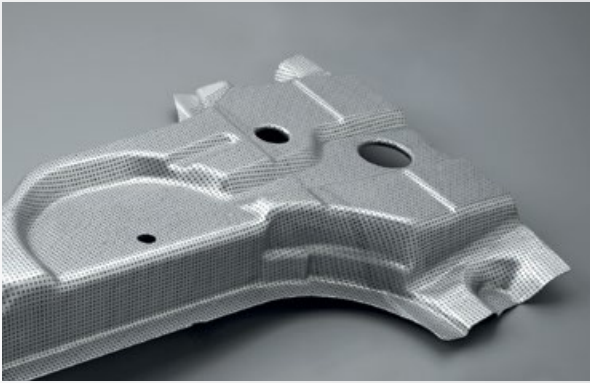
Users of GOM systems include international companies from the automotive, aviation, aerospace and consumer goods industries, their suppliers as well as research institutions and universities.



PONTOS replaces conventional displacement measurement systems and accelerometers. The non-tactile process records 3D displacements and deformation for structures, parts or components.



ARAMIS is used for optical 3D deformation analysis of materials and parts. The non-contact and material-independent measuring system supplies full-field 3D surface, displacement and strain results.



ARGUS delivers results for forming analysis of sheet metal parts and is used to optimize metal forming processes.



TRITOP measures the coordinates of three-dimensional objects and calculates 3D displacement and deformation. In the same way as tactile machines, it records 3D coordinates and their orientation in space.



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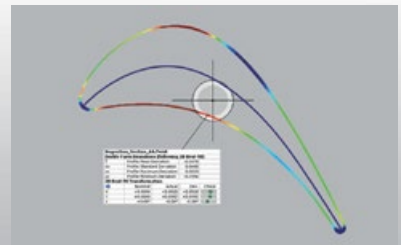
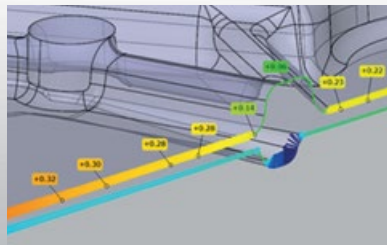
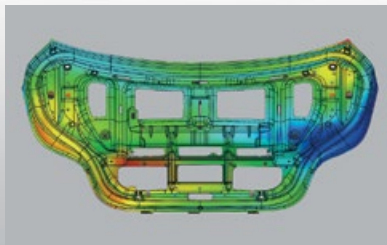
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