

INNOVATIONS IN METROLOGY

# WENZEL SOFTWARE SOLUTIONS

Our solutions for your measuring tasks





# WENZEL METROLOGY SOFTWARE SOLUTIONS

The fundamental idea is that we can offer software solutions from WENZEL for all machines and applications that offer the same operating strategies but cover specialist functional scopes. The importance of software in machine engineering has also increased dramatically over the last few years. We recognized this many years ago and with the takeover of Metromec AG in Switzerland, we have established an in-house development center for our core software. At the Swiss site and other sites, around 50 employees are working on our solutions that are installed at several thousand workstations. It is not just the importance of software that is continually changing, so too are the type and intensity of use. Depending on the choice of machine, we offer the ideal software solution from our portfolio for every machine. However, customers now combine different measuring tasks on different machines, they also want toothed gears or turbine blades on classic coordinate measuring machines or they switch between tactile probes and optical sensors.

The WENZEL software architecture is designed for this multiple and redundant integration into different solutions. Based on a common HW abstraction layer, the different application solutions build up (see figure).

- The basics – WM | Kernel
- The all-rounder – WM | Quartis
- The skyscraper – WM | PointMaster
- The construction kit – WM | Software Module

The WENZEL SW family follows a similar concept as Microsoft. There are good reasons for the parallel existence of word processing, spreadsheet, e-mail and presentation software. However, similar interface concepts make it easier to familiarize oneself with and switch between solutions. This is exactly WENZEL's claim! The best possible solution for each application - from WENZEL and from a proven uniform concept.

## **The basics – our WM | Kernel**

The WM | Kernel is delivered in the background with all our solutions. The drivers to connect the probes and sensors as well as the different machine types are plugged into it. Via the I++ interfaces, numerous third-party products can also be integrated into the WENZEL landscape.

## **The all-rounder – our WM | Quartis**

The new version of our flagship – WM | Quartis is presented in detail in this edition of the General catalogue. Even at first glance, it is clear that there is a significant difference. The interface now follows the new Group-wide style guide and has a fresh, modern design.

## **The skyscraper – our WM | PointMaster**

Our WM | PointMaster is distinguished by its processing of large data volumes of point clouds, polymeshes and voxels as well as a high degree of application flexibility. In 2018, the new interface solution was implemented along with a number of additional functions. PointMaster offers a wide range of modules that enable the user to process point clouds, model polymeshes, perform reverse engineering and create CAD models.

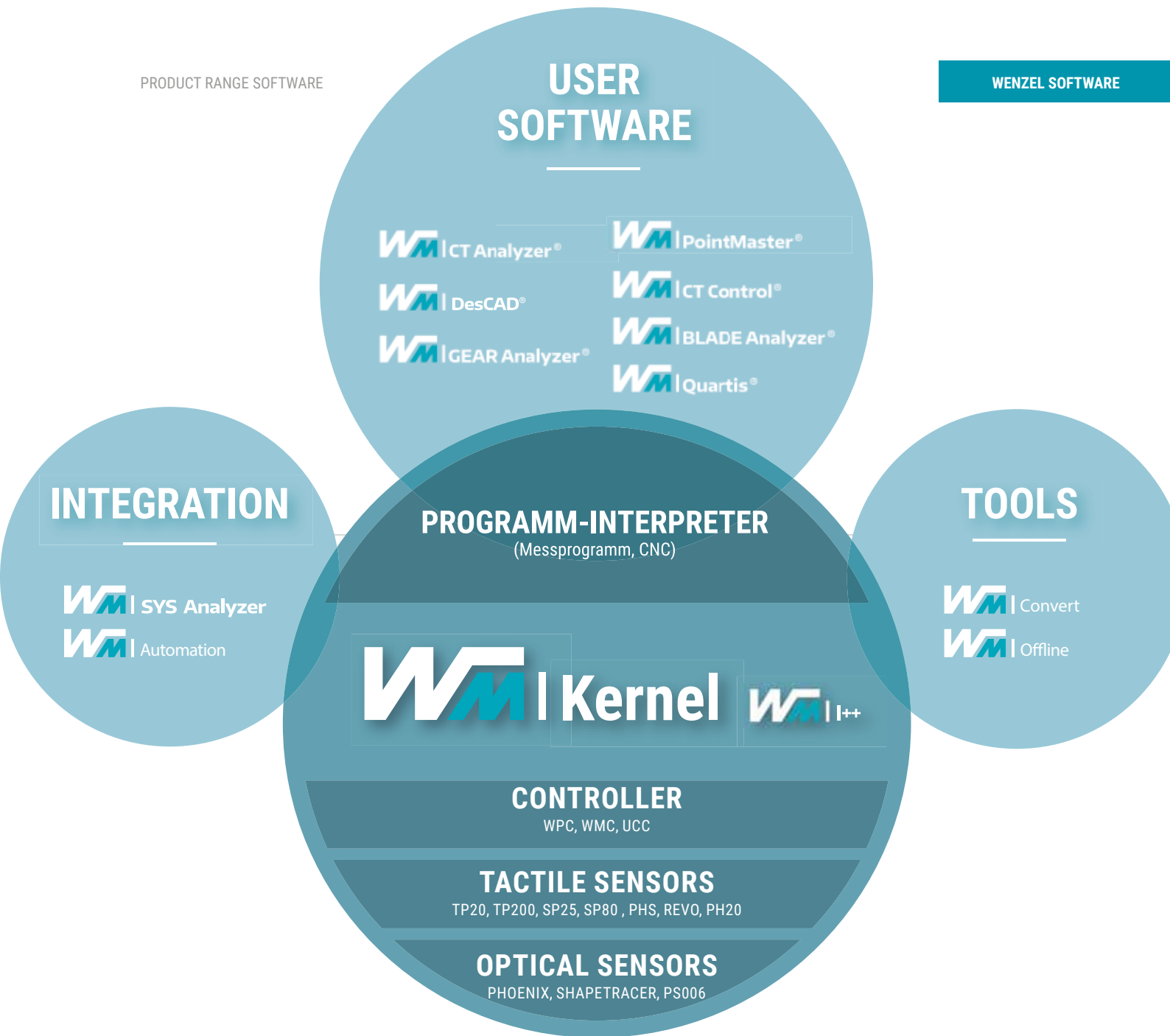
Furthermore, WM | PointMaster forms the basis for our special solutions in computed topography and styling.

## **Automated measurement & evaluation – our WM | Generator**

The WM | Generator is used to automatically generate measuring programs from measuring plans. The newest development at WENZEL, for customers who want to reduce the effort for generating measuring programs.

## **Transparency for operation and control – our WM | SYS Analyzer**

The WM | SYS Analyzer offers all information around the operation and use of the installed WENZEL measurement solutions at a glance.



### The modular system - WM | Software modules for various applications

#### The specialist - our WM | PointMaster for CT

WENZEL's CT control and reconstruction software, specially developed for industrial use, guarantees high precision, a fast scan time and the exact calculation of volume data. On the basis of a single measurement, metrological evaluations, material testing, nominal/actual comparisons against a master component or CAD data, reverse engineering and compensation of shrinkage and warpage are possible within a very short time.

#### Measurement, analysis and visualization of gears - our WM | GEAR & GEAR Analyzer

Demand for evaluating gear wheels have increased dramatically. The WM | GEAR Analyzer solution that is based upon the open GDE standard offers the customer considerably more opportunities for analyzing and visualizing the measurement results.

#### Evaluation of turbine blade measurements - our WM | BLADE Analyzer

In addition to standard parameters, the software also supports evaluations according to various manufacturer standards. Different Best Fit algorithms, for the determination of the blade section position, as well as the evaluation of shroud-tip and root dimensions.

# WM | Quartis

## AUTOMATED MEASUREMENT & EVALUATION

WM | Quartis is the versatile, reliable, modern and easy to use measurement software from WENZEL. With WM | Quartis WENZEL offers a new generation of innovative measurement software with a clear, flexible and result-oriented user interface for all industrial applications. Meaningful measurement reports can be generated even faster and easier. The user interface of WM | Quartis,

based on Microsoft Office Fluent, significantly simplifies the application of the powerful functions. You can obtain correct measurement results, impressive test reports and meaningful statistics more quickly and easily. The optimized screen layout and the dynamic, result-oriented ribbons significantly speed up workflows and ensure greater efficiency in day-to-day business.

## FEATURES

- **Geometry, freeform and curves** combined in one measuring software
- Supports **manual and CNC** measuring devices of various types
- Scanning with **tactile and optical sensors** and **5-axis measuring heads**
- **Form and position evaluation** according to the latest **ISO GPS** and **ASME standards**
- **DMIS 5.2 Standard** complements the intuitive Quartis programming language
- **Structured data management** in relational database (MS Access / SQL-Server)
- **Report generator** for descriptive measurement reports
- **Operator-friendly operation** with quick selection panel, 1-click program start
- Ready for **special applications** thanks to numerous **interfaces** and **add-ons**

## HIGHLIGHTS

### Universal measuring software

One solution for all task

One software for measuring and evaluating geometry, freeform and curves. WM | Quartis supports manual and CNC measuring machines with tactile and optical sensors. Renishaw REVO and PH20 5-axis probes increase measurement throughput and allow roughness measurement. Efficient creation of measuring programs as well as intuitive teach-in offline and directly at the coordinate measuring machine. Numerous direct interfaces for various measuring machines, but also a universal, manufacturer-neutral measuring device interface (I++ DME). Form and position characteristics can be evaluated according to the latest ISO GPS and ASME standards.



WM | Quartis the universal measuring software

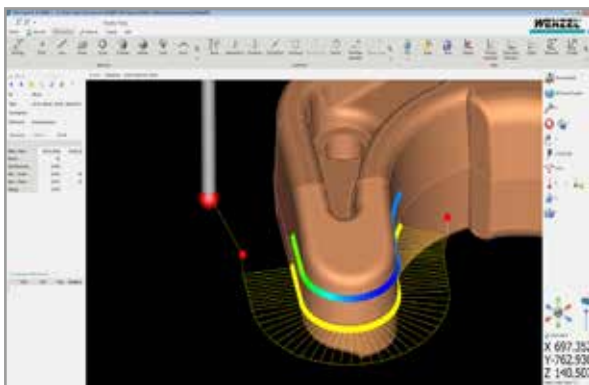
## User interface

Suitable for every task

The easy-to-use, task-oriented and individually configurable graphical user interface is suitable for every measuring task. The measuring programs can be started quickly and easily with just one click via the quick selection panel or by using of a barcode scanner. The relational database also ensures traceable measurement results. The nintegrated statistics package guarantees a rapid assessment of manufacturing processes. The CAD functionality of WM | Quartis is the basis for efficient measurement. The integrated live preview ensures the correct application of the standard-compliant evaluation according to ISO GPS and ASME. WM | Quartis supports 3D mice. The two-handed, simultaneous mode of operation additionally accelerates work in 3D Graphics WM | Quartis impresses with a result oriented, tidy user interface.



WM | Quartis convinces with a result-oriented, tidy user interface

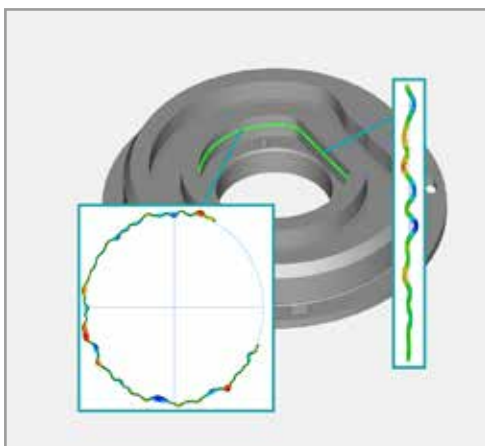


Measure and evaluate curves

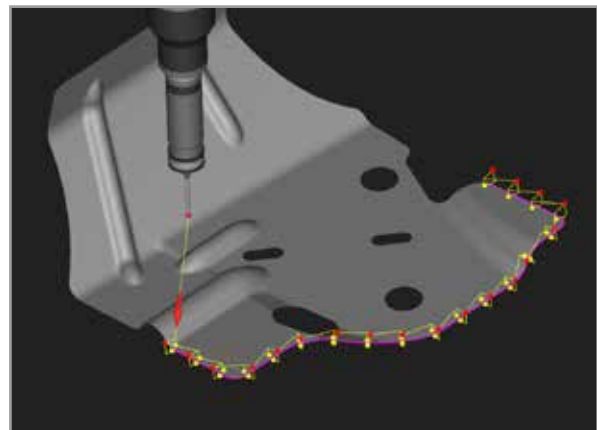
## Measurements

Complete tasks smartly, efficiently and quickly

WM | Quartis measures geometric components, freeform and curves. With the proven Click 'n' Measure™ functionality, a dynamic measurement strategy library and numerous sophisticated tools, measuring tasks are quick and easy. The basis for measuring is the centrally arranged, large working window with the 3D graphics. The live preview shows the active measurement strategy and guides the user more quickly to the correct settings. Measurements can be made by single point acquisition, scanning and self-centering. Safety levels and collision checking prevent damage to the measuring device. With powerful alignment functions and a world-class best-fit, all alignment tasks can be performed easily. Standardized filters and outlier removal eliminate disturbances on the material surface.



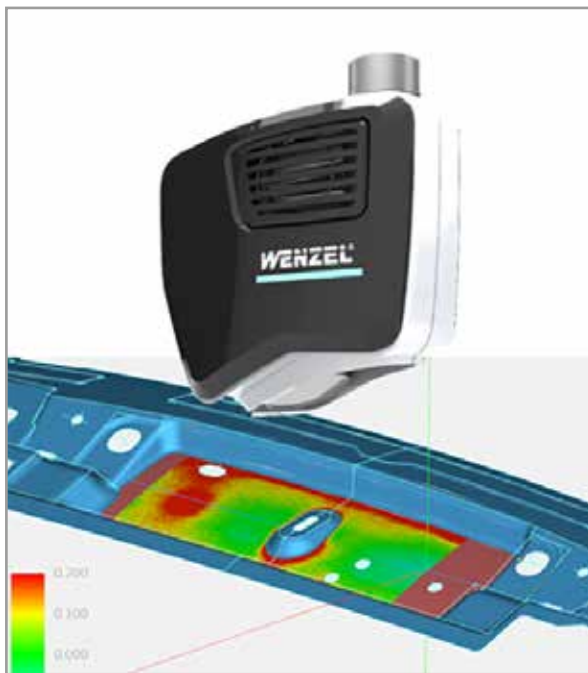
Measure and evaluate curves. The "Extract" construction function generates circles and straight lines from measured curves



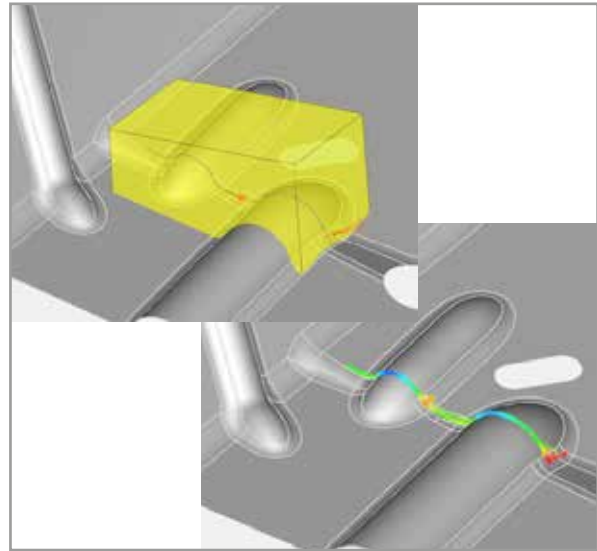
Measuring and evaluating edge points



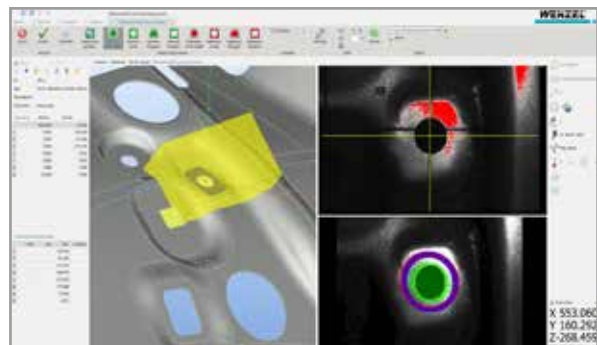
WM | Quartis supports manual and CNC measuring machines with tactile (touching) and optical (non-contact) sensors and is therefore predestined for automated multi-sensor applications. Scanning with high point density allows the acquisition and evaluation of surface shape tolerances as well as the color-coded representation of component deviations.



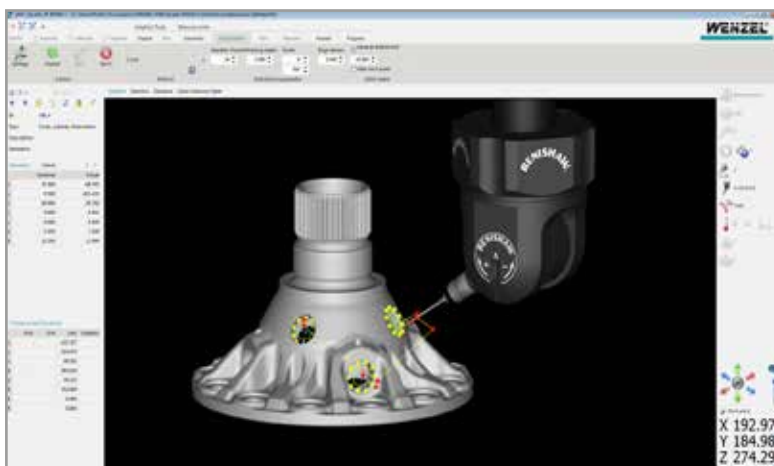
Detection of surface shape with optical sensor and color-coded display of component deviations



Profiles can be captured and evaluated with one image



Non-contact measurement with optical sensors



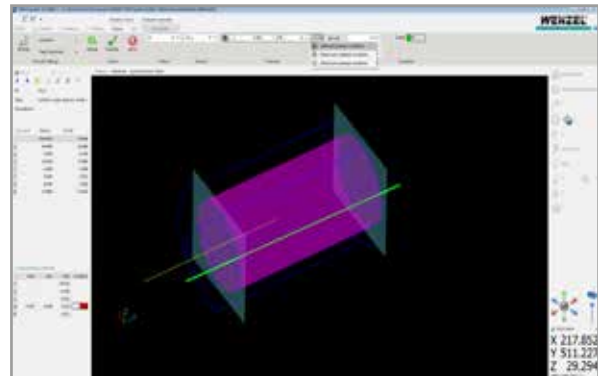
5-axis probes such as PH20 significantly increase measurement throughput

Renishaw REVO and PH20 5-axis probes increase measurement throughput with very high scanning speeds and point rates. Stepless rotation and swivel angles allow time-saving, through optimum alignment of the probe to the component. Measurement with the rotary axes leads to high system accuracy due to minimal traverse paths of the measuring device. In addition, the REVO system allows the measurement of roughness.

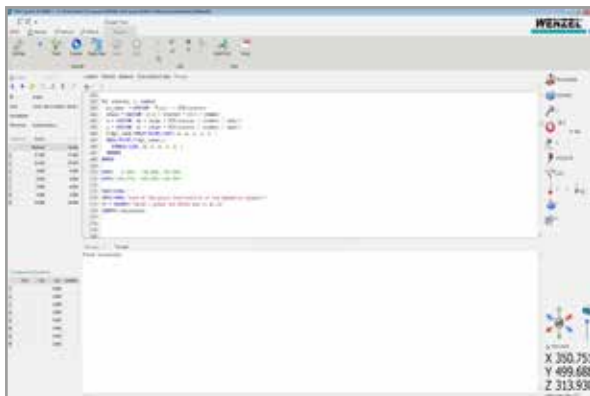
## Evaluation

Determine characteristics according to standards

Standard features such as dimension, position, distance, angle etc. are available to the user. Shape and position evaluations are evaluated according to the current ISO GPS / ASME Y14.5M standards. The live preview ensures correct application and avoids incorrect data input. The input fields in the menu band correspond to the drawing specification. WM | Quartis automatically selects the correct algorithms for standard-compliant evaluation with references and tolerated elements.



Evaluate characteristics according to standards



Powerful and flexible programming in DMIS for programming experts

## Programming

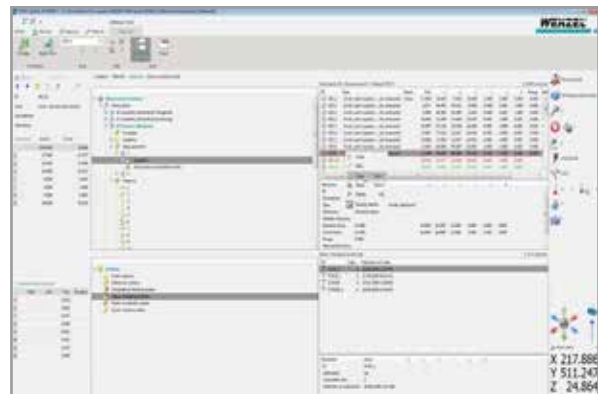
Intuitive and flexible

Measurement programming in WM | Quartis is intuitive and powerful. Measuring programs are efficiently created on the basis of CAD models, online directly on the coordinate measuring machine or offline on a virtual measuring machine. Various intelligent tools help the user to do this. Traverse paths are simulated, collisions are detected and avoided. Measurement sequences can be processed graphically-interactively and very efficiently. For correct programming cracks and even more advanced, flexible measuring programs with variables, formulas, conditional instructions and loops etc., the manufacturer-neutral programming language according to DMIS 5.2 standard is available.

## Data management included

Secure, clear and structured

Data (workpieces, measurements, programs, features, etc.) are secure, structured and in good hands in WM | Quartis thanks to the integrated Microsoft Access® database. This ensures traceability and, if necessary, later evaluation of measurements. For large data volumes and several measuring systems, the system can be scaled to a central Microsoft SQL Server® database. Data management is as clear and simple as in a Microsoft Windows® file explorer. The option of automatic data backup saves users from unpleasant surprises.

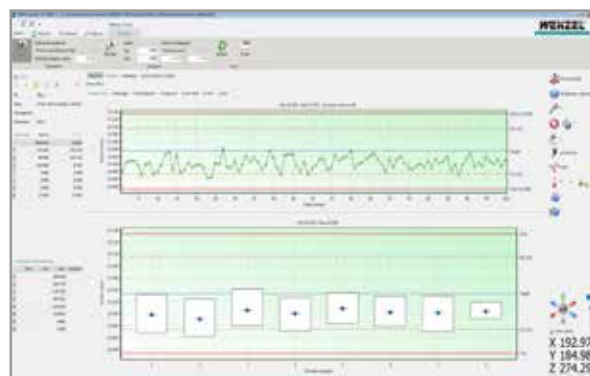


Secure, clear and structured data management

## Statistic

Keeping the process under control

The integrated statistics package guarantees a fast assessment of the manufacturing processes by machine and process capability (SPC), statistical data, trend diagram, histogram, X-, R- and s-card. The most important parameters are always at a glance in the overview window. Configurable views and diagram areas meet all requirements. Data can be exported in various formats for external evaluation.



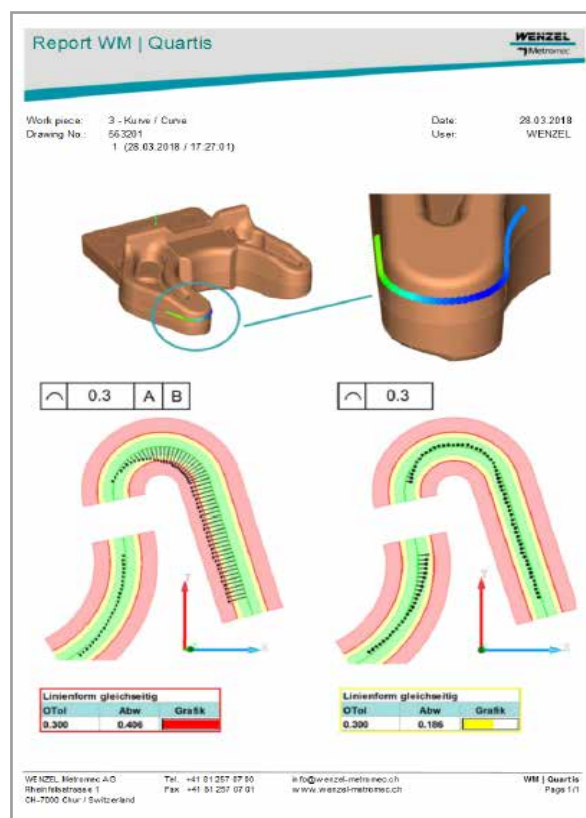
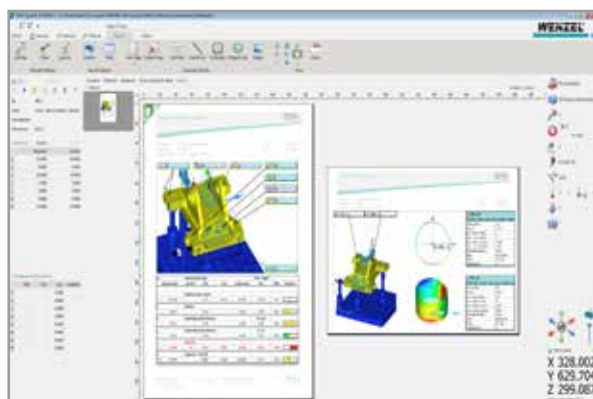
All important characteristic values at a glance with the built-in statistics

## Impressive, vivid measurement reports

The results at a glance

The integrated report generator allows a free configuration of the measurement reports (table and graphic views with freely configurable data- and statistics boxes). With the extensive template-library you can create impressive presentations of measurement results in no time. Deviations can be displayed color-coded. With the powerful drawing

tools, inserted images and texts, measurement reports can be completed. Language and units of measurement in the measurement report can be configured independently of operation. WM | Quartis also offers various export options (PDF, ASCII, MS Excel®).



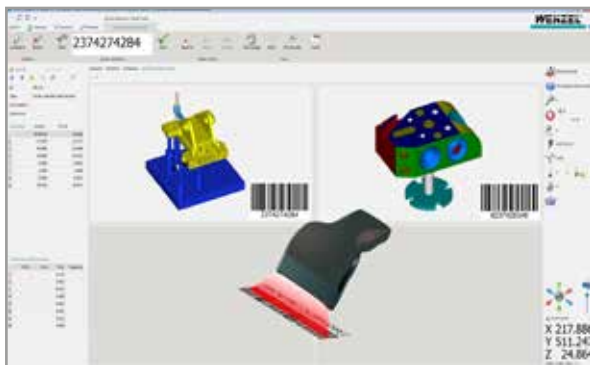
Geometry and freeform, graphics and tables can be displayed quickly and easily in a meaningful measurement report



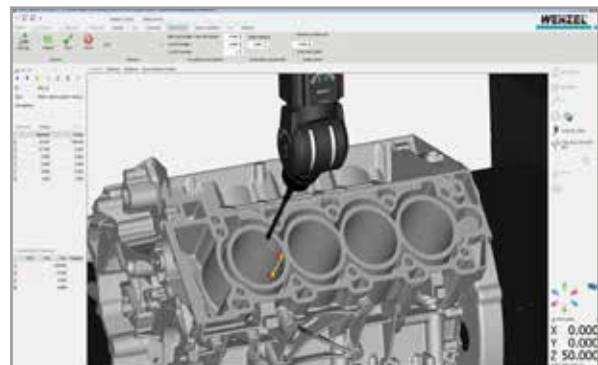
## Special applications

Get the most out of your measurement software

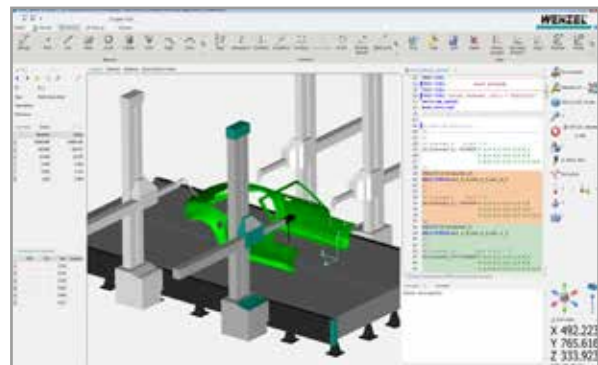
- Measure and evaluate roughness with Renishaw REVO
- Use of third-party measurement software via WM | I++ DME Server based on WM | Quartis
- Virtual measurement on actual data from Computertomographs and optical scanners using WM | CTAnalyzer and WM | PointMaster
- Multi-column systems can be operated simultaneously and collision-free with up to 8 CNC measuring devices. This dramatically reduces the measuring cycle time
- Measurement of turbine blades in WM | Quartis and evaluation in WM | BladeAnalyzer on WENZEL CORE multi-sensor measuring devices
- Export of tool correction data, e.g. for eroding machines
- Automation and integration of the measuring system in the production process
- Use as a test device with the Renishaw Equator



Program start and data transfer from bar and data matrix codes



Measure roughness with Renishaw REVO SFP2 roughness sensor



Multi-device operation with up to 8 measuring devices

## YOUR ADVANTAGES AT A GLANCE

- **Powerful, universal measurement software**  
Measurement of standard geometry, freeform and curves | For manual and CNC measuring devices | With tactile and optical sensor technology | For single point and scanning acquisition | Standard-compliant evaluation | Impressive measurement reports
- **Simple operation**  
User-friendly Microsoft Fluent Interface | Dynamic Ribbons | Structured Workspace
- **Low operating costs**  
Low training costs | Investment protection thanks to ongoing further development and regular updates | Software maintenance contract at a reasonable price | Volume discounts
- **Connectivity**  
Imports from all common CAD systems | Data transfer to external statistical software | Connection of various measuring machines | Automation solutions
- **Swiss Made Quality**  
Reliable | Precise | Innovative | Down-to-earth | Windows 10 compatible



# WM | PointMaster

## THE ALL-ROUNDER FOR SCAN DATA PROCESSING

The processing of optical and tactile measured data is an indispensable and efficient element in the development and manufacturing process in many industrial sectors and applications, such as tool and mould making and in quality control. WM | PointMaster primarily supports users in the further processing of point

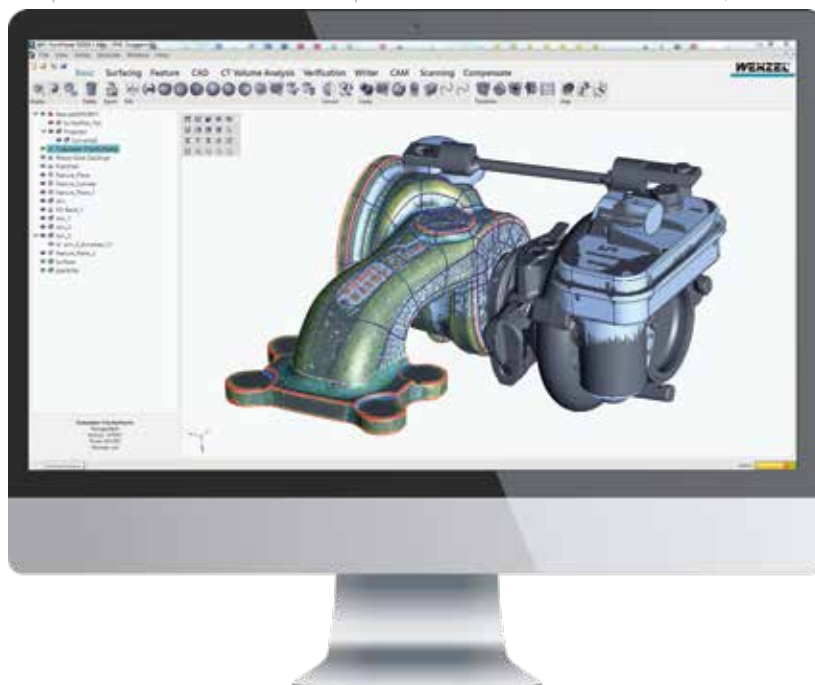
clouds and polymer meshes right up to the reverse engineering process and quality control. The innovative processes and process chains are based on the WM | PointMaster geometry kernel and ensure excellent data quality and outstanding machining processes.

### Precise digital 3D models

Whenever it comes to converting existing components of physical objects into virtual data by scanning, we recommend our WM | PointMaster. You will receive digital 3D models for industrial design, construction, medical technology, mold and tool making and manufacturing quickly

and precisely. Modeling complex and detailed organic shapes, as well as modeling based on regular geometry bodies, is effortless with our industry-leading, powerful tools.

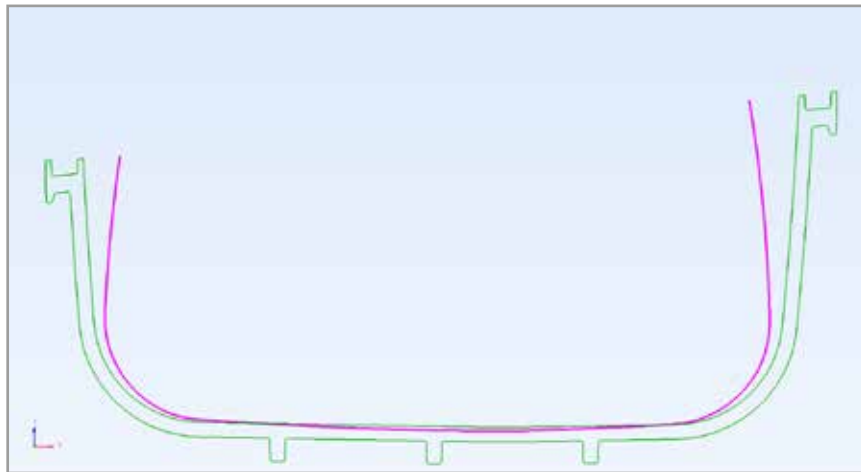
Compensation surfaces for a new tool shape that have been reconstructed with the WM | PointMaster



### New Compensation Module

With WM | PointMaster, almost all existing geometric types can be processed. Due to this enormous flexibility, the WM | PointMaster offers, in addition to the geometric reconstruction of scanned components, analysis methods such as the comparison of scanned components (actual data) with CAD data (nominal data). The measured devi-

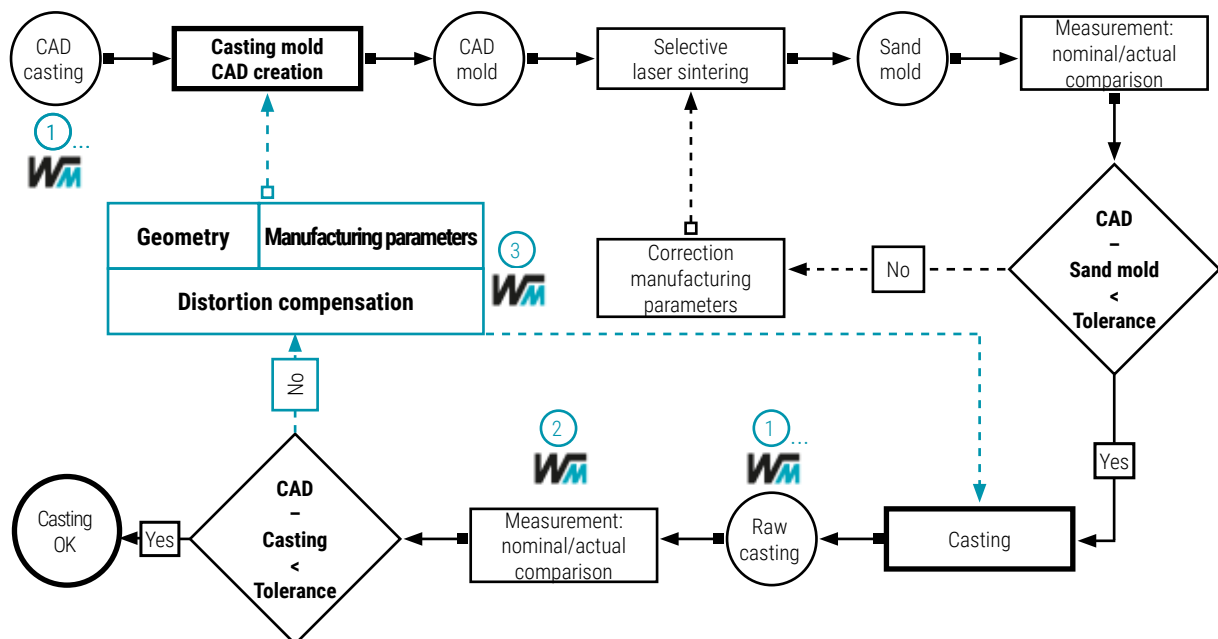
ations are displayed in a so-called deviation color map. In addition, with WM | PointMaster we also offer complex process-leading applications, such as a comparison of actual data with nominal data, which is used to control conversion and original forming processes



Comparison of the nominal contour (green) with the scanned actual contour (red) of a component whose mold form was not compensated for shrinkage and distortion

### Analysis and process control in tool and mould construction

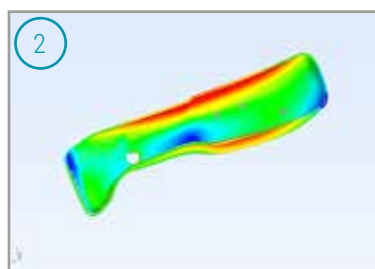
Fully automatic calculation of error-compensated new tool geometry taking into account a nominal geometry, the shrinkage factor of materials as well as the original tool geometry (represented in the process diagram for the compensation of shrinkage and warpage for tool and mould making).



Alignment of actual- to nominal component

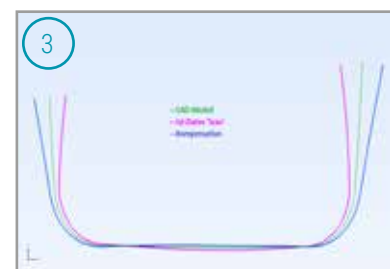


Analysis of the actual component



by nominal/actual comparison

Compensation strategy



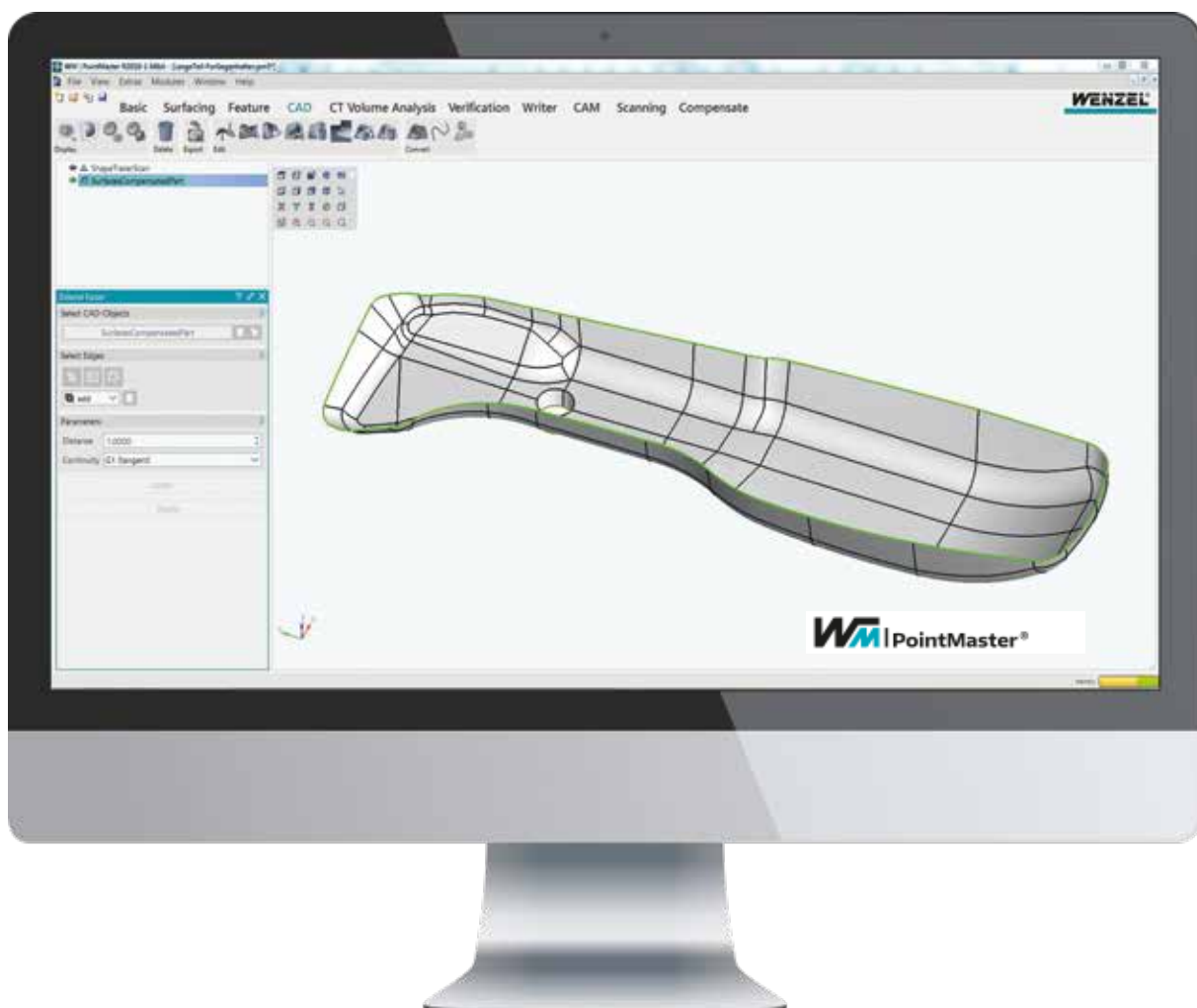
represented by sections

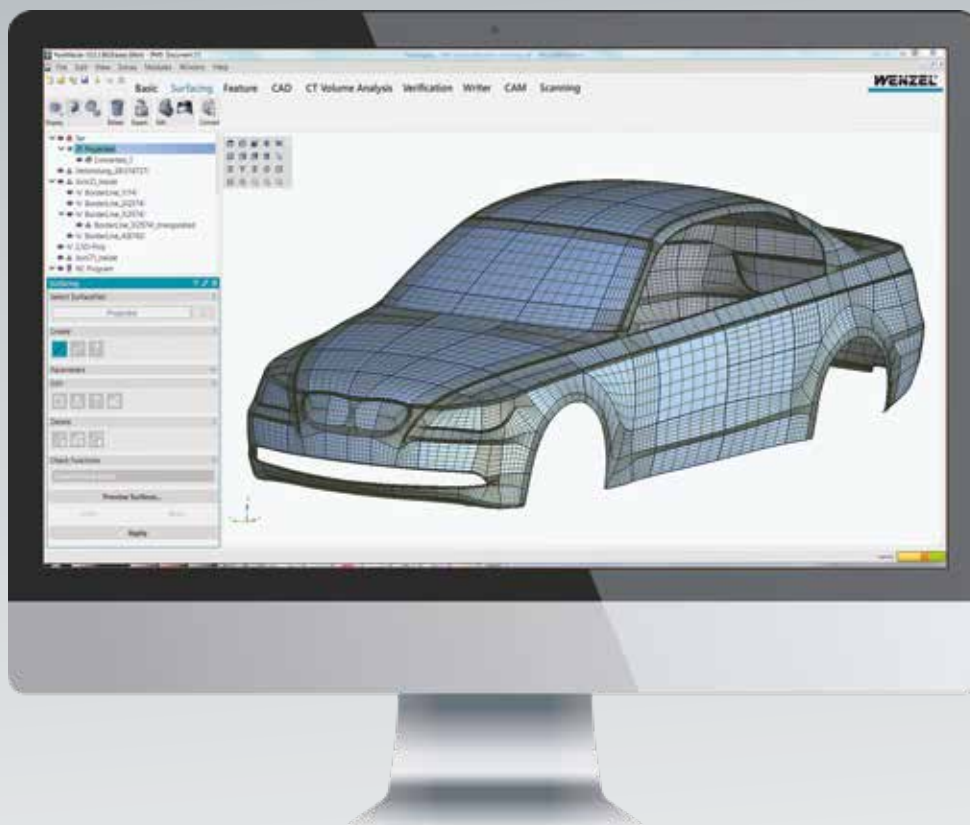
Green section = Nominal geometry  
 Red section = Nominal geometry (Scan)  
 Blue section = Compensated geometry

### Fully automatic calculation of warping results

After the demoulding of plastic parts, a deformation occurs due to shrinkage and distortion of the plastic component. This deformation is usually compensated in the injection mould by the shaping, so that the plastic part is first shaped into a "wrong" shape. After the plastic has cooled down, the component is then deformed back into the desired shape due to shrinkage and distortion in order to correspond as closely as possible to the nominal shape. The traditional compensation of the tool geometry is carried out by iterative post-processing (milling, grinding or eroding) of a new or existing tool shape. This post-processing is associated with immense effort and

ultimately leads to the fact that the mould insert can often no longer be used. In virtual deformation, on the other hand, the deformation specifications are derived from simulation systems or measurement results of actually scanned components. This enables WM | PointMaster to calculate the deformation result fully automatically. Factors such as local volumes, shrinkage and the experience of toolmakers are taken into account. The fully automatically calculated distortion-compensated geometry is then converted into CAD surface models using the powerful reverse engineering functionality of WM | PointMaster and entered into the existing tool data.

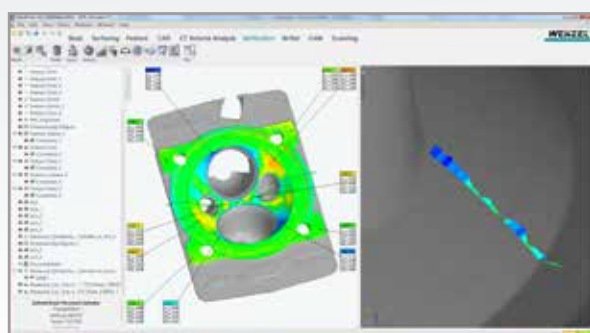




### Reverse engineering

A surface boundary on the polymesh is sketched interactively. The Geometry Navigator then calculates the optimal boundary curves for this area and approximates the surfaces. At the touch of a button, the entire surface structure is given continuous curvature surfaces (C2-continuity). A plus point of WM | PointMaster is the visual support by the interactive feature "Shading".

Artifacts and discontinuities as well as the form guidelines important for the surface structure are displayed. New functions such as surface trimming using B-Spline curves, the transfer of surfaces created in CAD for reverse engineering and rule geometry recognition round off the range of functions.



### Nominal/actual value comparison

The user transforms the measured data (scan data = actual data) into the coordinate system of the reference object (CAD data = target data), starts the analysis and receives a deviation color map as result. The measured deviations are displayed in a so-called deviation color map. Measuring points can be taken directly from the analysis object and transferred to a measuring protocol. Measuring programs created for a tactile measuring machine in WM | Quartis can be sent via I++ to WM | PointMaster. WM | PointMaster then functions as a virtual measuring machine, calculates the contact point from probe to component and then sends it back to the measuring software.

## YOUR ADVANTAGES AT A GLANCE

### ■ Shrinkage and distortion correction

For tool and die makers | Sophisticated functions and algorithms | Compensation of the formed or original components

### ■ Comprehensive format support

Handling scan and CT data | Support of all common scan, CAD, CT and CNC formats

### ■ Extensive functions

Creation of documents including presentation tools for measurement reports, documentation | Reports for order preparation | Freely available viewer

### ■ Support of numerous data types

Point clouds, polylines, polymasks | Surfaces and curves of higher order | Pixels and voxels | CNC traversing polyhedron



# WM | GEAR & GEAR Analyzer

## THE ALL-ROUNDER FOR GEAR MEASUREMENT

WM | Gear, together with the WM | Gear Analyzer is the innovative software package for data acquisition, measurement and evaluation of involute gears with coordinate measuring machines. Users can use the extensive possibilities of the measuring software WM | Use Quartis without additional training effort (e.g.

probe management, calibration of probes, determination of the workpiece position and determination of the rotary table system). Communication between WM | Gear and WM | Gear Analyzer is based on the open GDE standard (VDI / VDE Guideline 2610).

## APPLICATION EXAMPLES

Spur and helical gears with involute profile, internal and external gears.

Gears



Bearings and clutches



Shafts and axles



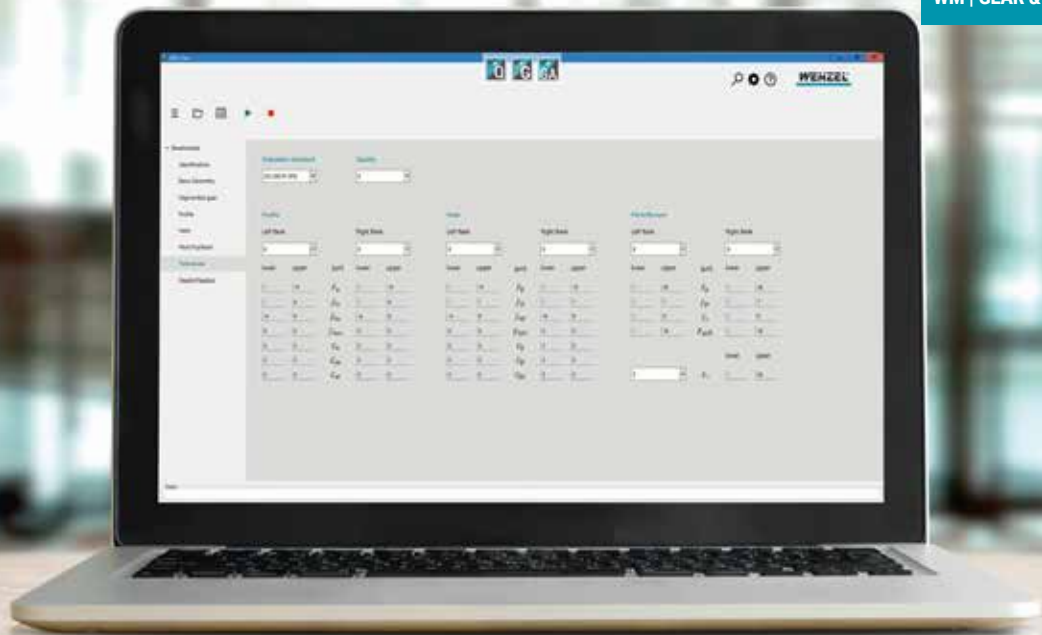
## HIGHLIGHTS

### Profile inspection

Extensive parameterization of the measuring tasks. All common profile characteristics can be determined. Profile testing on any number of teeth possible. Several profile inspections on one tooth possible. Profile corrections can be selected separately for each measuring position (convexity, head/foot relief, nominal inclination, K-template, design profile).

### Flank line testing

Extensive parameterization of the measuring tasks. All common edge line characteristics can be determined. Flank line inspection on any number of teeth possible. Several flank line inspections on one tooth possible. Flank corrections can be selected for each measuring position (crowning, end relief, nominal inclination, K-template, design flank).



### Pitch and concentricity inspection

Extensive parameterization of the measuring tasks. All common pitch and concentricity characteristics can be determined. Up to three pitch tests at different tooth positions possible. Eccentric-corrected evaluation possible.

Division inspection & absolute dimensions



### Determination of absolute dimensions

The following features are possible at up to three different tooth positions:

- Diameter of tip circle
- Base circle diameter
- Ball dimension
- Two-ball dimension
- Single roll dimension
- Double roll dimension
- Tooth width
- Tooth thickness

## YOUR ADVANTAGES AT A GLANCE

### ■ User-friendly data management

Input of geometry data, measuring tasks, evaluation regulations and tolerances | Any number of workpieces can be saved | Import / export of gear data

### ■ Extensive evaluation possibilities

Support of recognized standards | Free tolerances for each feature possible | Transparent filter configuration | Company standards possible on request

### ■ Interactive measurement sheet display

Over-height automatic / fix | Stretching automatic / fix | mm / inch switching | Subsequent modification of the measurement sheet form | Temporary switching of the output language | Archiving of measurement results in PDF format | Coupling to statistical system possible

### ■ High flexibility

Fully automatic measuring sequence | Evaluation and presentation parameters can be modified subsequently | Manufacturer-independent evaluation of measurement results | CNC traversing polyhedron

# WM | BLADE Analyzer

## EVALUATION OF TURBINE BLADE MEASUREMENTS

With the program WM | Blade Analyzer WENZEL introduces a new tool for the evaluation of turbine blade measurements.

the software supports standard parameters such as

- Maximum thickness
- Entry and exit edge radius
- Edge thickness
- Blade length
- Blade angle

Defined elements can be freely placed on the measurement report



Analyses according to various manufacturer standards (GE, Safran, Royce Rolls, Pratt & Whitney). Different Best Fit algorithms for determining the blade position are just as much a part of the scope of services as the evaluation of tip and root dimensions.

A defined workflow makes it easier for the user to create the measurement report. A generated report can

be saved as a template and used for all further measurements. The measurement data is transferred in file format. Different formats like vda, iges, csv and xml are supported. In addition to manual use by an operator, the software can also be automated by command line parameters. The data can be stored in various formats for statistical recording of the results.

Different views can be defined in the designer







# WM | SYS Analyzer

## TRANSPARENCY FOR OPERATION AND CONTROL

With the WM | SYS Analyzer software solution WENZEL offers extensive possibilities for controlling and analyzing measurement tasks and machines used. This allows the customer to have a "digital twin" of their part and analyze their measurement data in an intelligent and flexible way. The WM | SYS Analyzer offers total data transparency for measuring machines and their measuring environment. Authorized users are provided

with all necessary information in real time through an attractive interface. The WM | SYS Analyzer consists of three software modules. The basic module "Monitoring" is installed on the machine's computer as standard on delivery. The advanced modules "Operations" and "Analytics" can be added at any time depending on the requirements of the machine.

## FEATURES

- **Networking of local and global information** of all connected measuring machines
- **Intuitive** interface and usability
- **Automatic backup of all information**, e.g. machine data and data from the measuring environment
- Possibilities of **further analyses**
- **Platform independent** usage and encryption

## VERSIONS

	Monitoring	Operations	Analytics
<b>Max. Number of users (simultaneous)</b>	1	3	unlimited
<b>Machine status</b>	++	++	+++
<b>Error status</b>	+	++	+++
<b>Machine use spatially</b>	0	+	++
<b>Measurement program information</b>	0	+	++
<b>Service information</b>	+	++	+++

+ = Basis, ++ = Extended scope, +++ = Maximum scope





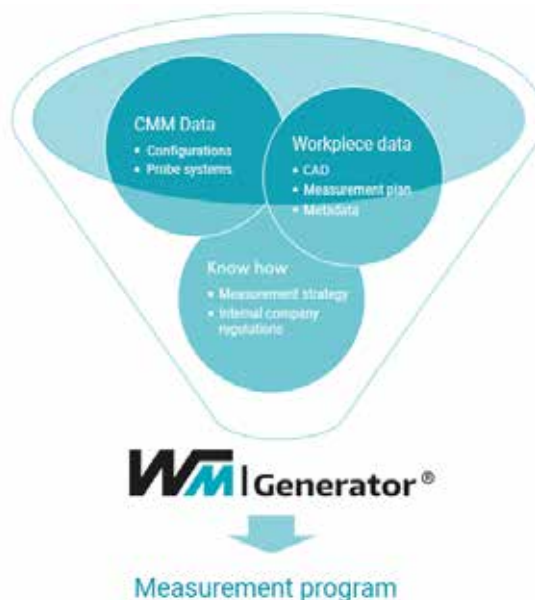
## YOUR ADVANTAGES AT A GLANCE

- **High machine utilization**  
Monitoring of machine running times |  
Reduction of errors | Lower downtime
- **Transparency of information**  
Machine data | Measurement environment |  
Measurement sequences
- **Versatile use on all platforms**  
Smartphones | Tablets | Desktop Computers
- **Improvement of service**  
Wear indicator | Open maintenance |  
Avoidance of downtime
- **Backup and Reuse**  
Automatic storage | Versatile comparability |  
Automatic archiving

# WM | GENERATOR

## AUTOMATED MEASUREMENT & EVALUATION

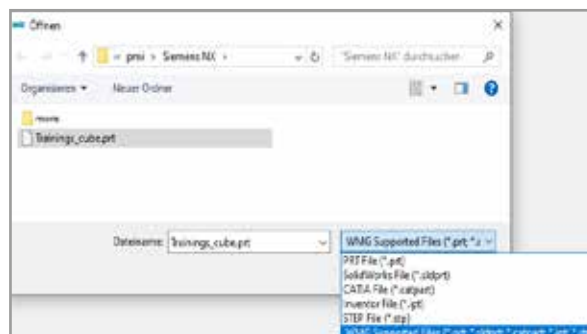
The WM | Generator is used to automatically generate measuring programs from measuring plans. The WM | Generator is still a very visionary product in the early stages of development. It will still take years until the CAD-models contain the corresponding information all over the country, but WENZEL is on the topic. The WM | Generator is being developed for customers who want to reduce the effort of generating measuring programs. Initially, the focus is on tactile, touch trigger probe systems with PH10 in combination with CAD models that contain measurement plans in the form of semantic PMIs. Other technologies - and other measurement plan formats - will also be supported later. At the trade fair Control 2019 we presented a Proof of Concept of the WM | Generator.



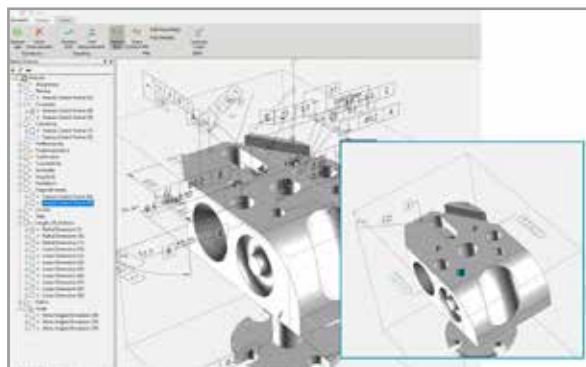
## FEATURES

Import various CAD formats, including their semantic PMIs

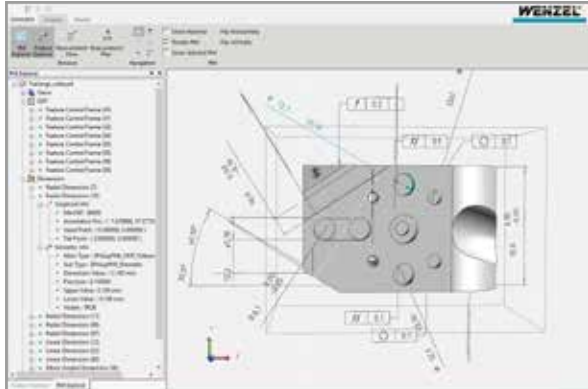
- Siemens NX
- CATIA V5
- Inventor
- SolidWorks
- STEP AP242



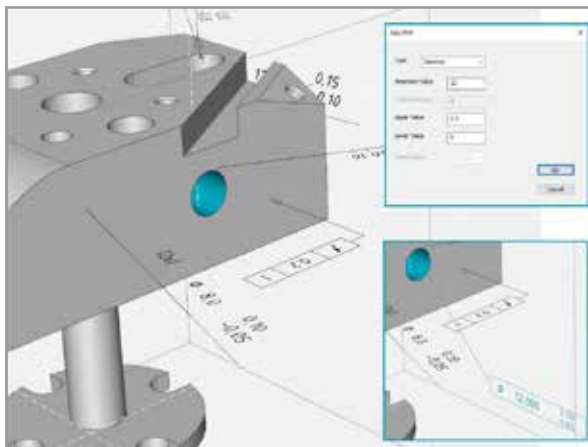
- Create measuring program with few user interventions
- View original PMI data in the PMI Explorer
- Keep the overview by optionally displaying only selected PMI in the graphic.
- Add Missing Tolerances in Feature Explorer / Add Incomplete Tolerances
- Calculate time-optimized, collision-free measuring sequence



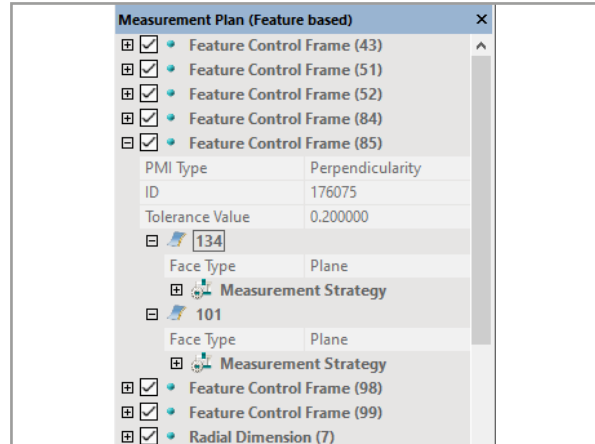
## FUNCTION



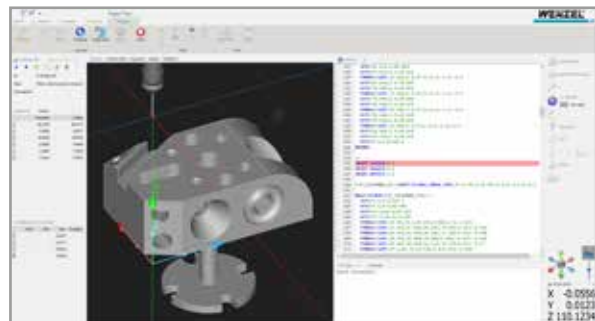
When importing the CAD model, not only the CAD data but also the semantic PMI are converted.



If necessary, PMI can still be added or edited.



The measurement plan is automatically generated from the PMI - the basis for the measurement sequence. For the characteristics to be evaluated and the corresponding elements to be recorded, the measurement strategy can still be edited in the measurement plan if required. Characteristics that are not to be evaluated in the measuring program are deactivated.



Based on the measurement plan, the measurement procedure is calculated, which represents the preliminary stage for program generation. From the measurement plan, the WM | Generator generates the measurement program, which can be executed in WM | Quartis..

## YOUR ADVANTAGES AT A GLANCE

- Reduce the time required to generate measuring programs
- Improve resource utilization through time-optimized measuring program procedure
- Electronic data exchange saves time and reduces transmission errors
- Creating time for the essentials by automating processes that can be automated

## INNOVATION MEETS TRADITION

The WENZEL Group is a market leader in innovative Metrology. WENZEL offers a comprehensive product portfolio in the fields of Coordinate Metrology, Computed Tomography and Optical High Speed Scanning. The technology of WENZEL is used in all industries, including the automotive sector, aeronautics, power generation and

medicine. WENZEL looks at today on an installed base of more than 10,000 machines worldwide. Subsidiaries and agencies in more than 50 countries support sales and provide after-sales service for our customers. The WENZEL Group today employs more than 600 people.



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