Improvements
WM | Quartis R2024-1

Update Information

Improvements WM | Quartis R2024-1

At a Glance

WM | Quartis R2024-1 offers a wide range of improvements for special applications and areas of use.

WM | Quartis R2024-1 automatically stores your data in **file-based relational databases**. For even greater performance and independence from Microsoft Office installations, the robust **SQLite database format** has been used. The changeover is seamless - nothing changes in the application.

WM | Quartis R2024-1 contains new functions for **improved PDF measurement reports**. Form fields enable the direct editing of text in the PDF report. Text content can be output as editable and searchable text in the PDF document. In order to prevent or trace changes to measurement reports, the PDF report can be provided with a digital signature and thus protected.

WM | Quartis R2024-1 includes additional functions and improvements for **optical measurement** and **evaluation**. The CAD import with automatic STL triangulation saves you valuable time when comparing with actual data. CAD models of an assembly can be triangulated individually and with variable resolution. You capture point clouds more efficiently with optical line scanners. When extracting, you save a work step because reference plane extraction has been integrated. Virtual simulation parameters for point cloud measurements with laser line scanners facilitate offline programming and offline execution of measuring programs.

WM | Quartis R2024-1 automatically **generates** a **measuring program** from your measurement plan (element and feature list) that extracts the elements from the point cloud. This function saves a considerable amount of time during programming.

WM | Quartis R2024-1 simplifies the standard-compliant **evaluation** of the surface profile and line profile features. You benefit from the modernized definition of the reference system.

WM | Quartis R2024-1 contains a new **filter function** that allows you to filter elements efficiently and effectively.

WM | Quartis R2024-1 offers **updated CAD interfaces** as well as other useful improvements and enhancements. You can read more about this on the following pages.

Note:

Some improvements are not included in the standard product WM | Quartis R2024-1 and require additional, chargeable modules. These are described in the document “Products and Modules WM | Quartis R2024-1”.

New File-based Database Format SQLite

SQLite Replaces Microsoft Access

You value the fact that WM | Quartis automatically saves your data such as probe systems, measuring programs, measurements, elements and features in file-based relational databases. These databases were previously based on Microsoft Access.

Now we have switched to the robust SQLite database format for even greater performance and independence from Microsoft Office. The changeover is seamless - nothing changes in the application.

Existing databases from previous WM | Quartis versions are easily and effortlessly converted to the new, powerful SQLite format when opened. With SQLite databases, you are no longer bound by the former 2 GB limit of Microsoft Access. The file size of a SQLite database is not limited.

Experience improved performance without dependence on Microsoft Office!

Microsoft SQL Server Databases

Microsoft SQL Server databases can still be used optionally (with the EDB module) as an alternative to file-based databases. Access to these databases is not affected by Microsoft Office. For multi-user access, where several instances of WM | Quartis work simultaneously and in parallel on the same database, Microsoft SQL Server databases are still required.

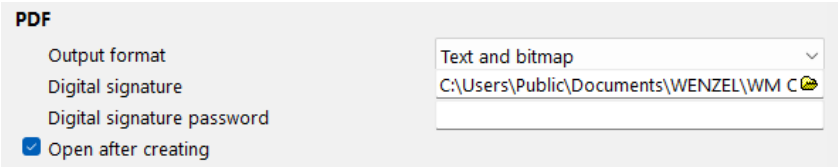
New Functions for Improved PDF Measurement Reports

Form Fields for Easy Text Editing in PDF Reports

The new "Form field" report object enables the direct editing of text in the PDF report, in contrast to the conventional text field. This allows information to be added to the PDF document or typing errors to be corrected without the need for special PDF tools. The form fields can be placed in the report paper, the template or in the actual report.

PDF Report: Text Content Output as Editable and Searchable Text

Previously, report content was saved as images in PDF documents, which protected values but made searching, copying and editing difficult. Now the report can be saved as either 'bitmap' or 'text and bitmap' to overcome these limitations.



PDF Report: Protection and Verification of Content through Digital Signature

To track changes to measurement reports, the PDF report can now be automatically provided with a digital signature and protected.

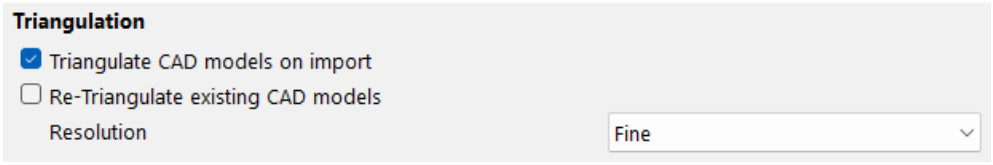
This signature confirms that the report was created, saved and not changed by the signature holder. Although the signature does not prevent manipulation, this can be proven by destroying the signature.

Improvements WM | Quartis R2024-1

Optical Measurement and Evaluation

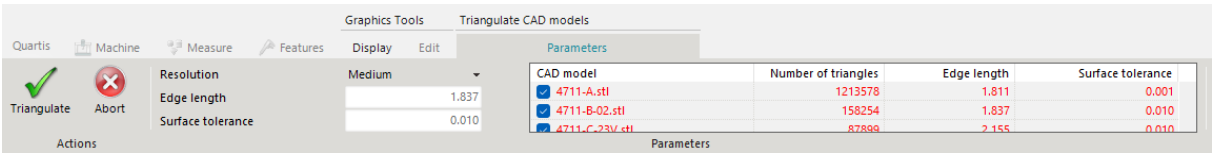
CAD Import with Automatic STL Triangulation

You create the STL files for comparison with actual data (polygon meshes, point clouds) directly when importing the CAD models. You save time by eliminating the step for subsequent triangulation.



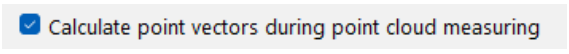
Individualized Triangulation of the CAD Models of an Assembly

You can now triangulate the loaded CAD models individually and with variable resolution.



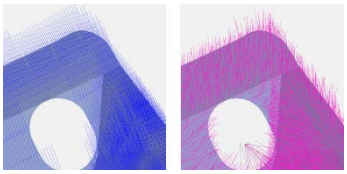
More Efficient Point Cloud Capture with Selectable Normal Calculation

You can capture point clouds with an optical laser line scanner and optionally select the calculation of point vectors. It is now possible to deactivate the immediate calculation of point normals in "Measurement settings". This can be useful to increase performance.



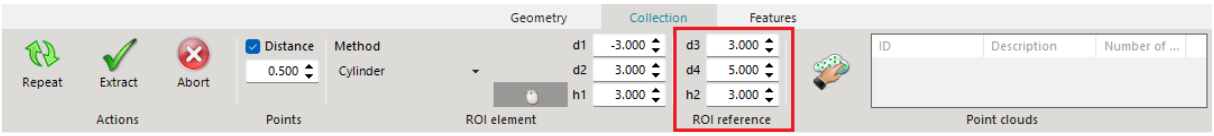
Graphical Display of the Point Cloud Direction Spines

You can now show the direction spines of the point clouds in the graphic. The visualization of the directional data gives you a better understanding of the orientation and structure of the point clouds.



Extraction of the Reference Plane directly with Element Extract

You can now extract the reference plane directly from the point cloud when extracting the "circle, rectangle, slot and hexagon" elements. This saves an additional work step that was previously required. The dimensions of the ROI (Region Of Interest) for the reference plane extraction can be adjusted individually via the corresponding ROI parameters if required.



Generate Extract Measuring Program directly from Measurement Plan

You can now generate a measurement program directly from an existing measurement plan (element and feature list) that extracts the elements from the point cloud. This function saves a considerable amount of time during programming, especially when measuring car bodies with a large number of elements. The following measurement plan formats are supported:

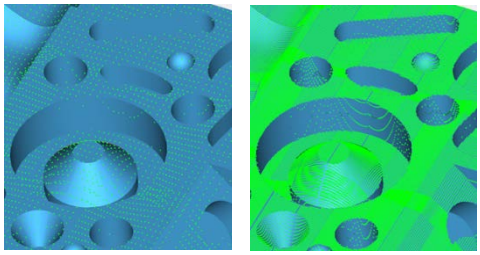
- Daimler/Audi Inspection Feature ASCII Format
- BMWIpp-Format
- Wenzel Inspection Plan Format

Virtual Simulation Parameters for Point Cloud Measurements with Laser Line Scanners

You can now set specific simulation parameters for the laser lines for offline programming and offline execution of measuring programs.

The "Laser line point resolution" and "Laser line distance" parameters allow the simulated point distribution to be adapted to different applications.

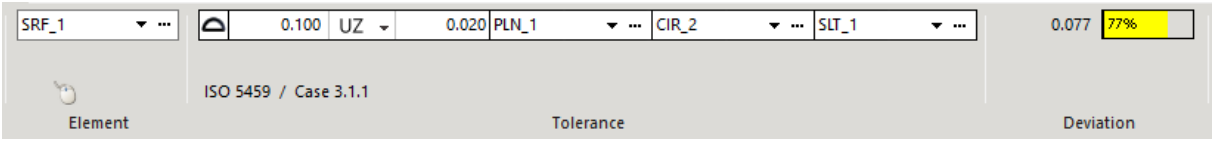
A denser point distribution can be simulated for extract evaluations, while the points can be distributed further apart to achieve a higher scanning speed in the simulation when checking scan paths.



Features and Constructions

Modernized Evaluation of Surface Profile and Line Profile in Accordance with Standards

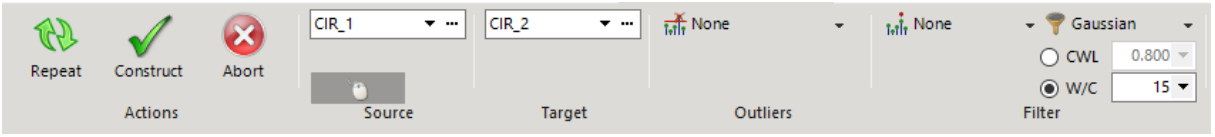
You benefit from the modernized definition of the reference system when evaluating the surface profile and line profile features. As with the position tolerance, the ISO GPS or AMSE Y14.5 default settings are now also effective here. The tolerance indicator is displayed directly in the ribbon and enables all necessary settings, including the tolerance zone divided unequally.



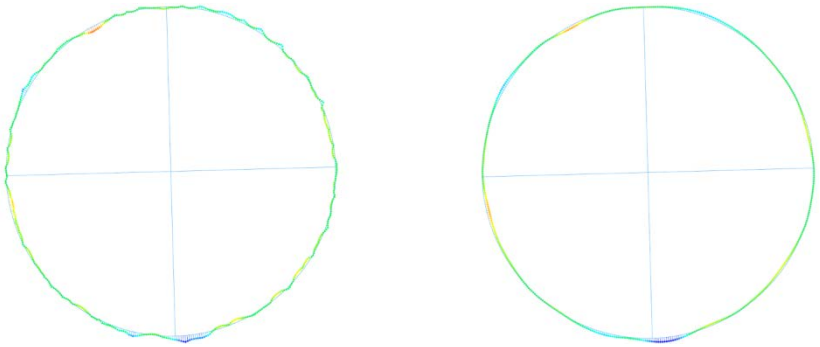
The evaluation is carried out either without a defined reference system (with Bestfit) or with a complete, standardized reference system. Evaluation in the active coordinate system is still possible, which opens up further application possibilities.

New Filter Function with Live Preview for Element Filters after Measuring

The new filter function allows you to filter elements efficiently and effectively afterwards. Filtered, unfiltered or differently filtered elements can be saved without having to measure them multiple times.



The live preview helps you to select and apply the appropriate filter. The effect of the selected filter is directly visible in the graphic so that you can view and check the result in the preview.



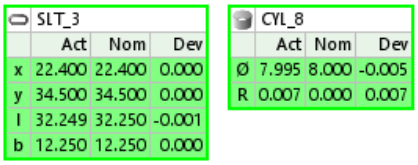
Preview graphic: Left "without filter" and right with "Gaussian filter (15 W/C)"

Improvements WM | Quartis R2024-1

Further Innovations for More Efficient Work

Element Info Boxes with Nominal and Actual Values

The element info boxes now not only show you the deviations, but optionally also the actual values and nominal values of the associated characteristics of the element.

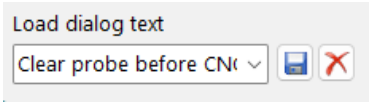


RPS Metrology Measuring Arm with Fixed Probe Supported

WM | Quartis now supports the measuring arms from RPS Metrology, a company from Italy. These measuring arms are sold by FESTO, among others, in conjunction with their automation systems. The following measuring arm models are supported: R-EVO R, R-EVO S and R-EVO Titanium with fixed probe.

Program Dialog: Saving and Reusing User Instructions

You use the dialog in the measuring program to give the user important instructions and notes while the program is running. The application is now even more user-friendly, as used dialog texts can be saved and reused.



Saving and Loading Expressions as Templates in the Expression Editor

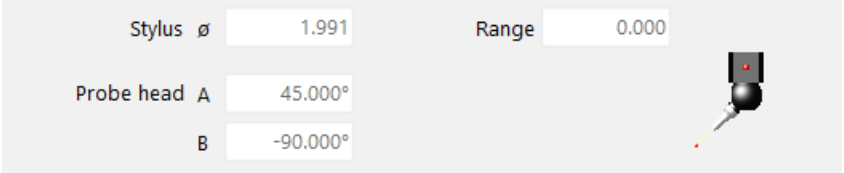
Formulating and applying expressions is made easier as you can now save them as user expressions and load and use them again as templates.

Determine Volumetric Probing Deviation with a Ring Gauge

The volumetric probing deviation according to ISO 10360-5 can now also be determined using a ring gauge in addition to measurement on a test sphere.

Preview of Probe Positions in the "Load / Save Probe System" Dialog

A preview of the probe head is now displayed in the dialogs for loading and saving the probe systems. This shows you the rotation and swivel position of the selected probe system.

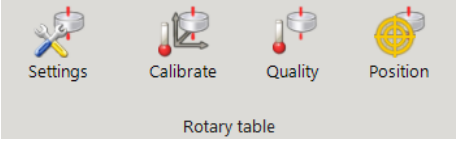


User-Independent Rotary Table Coordinate System for WM | Gear

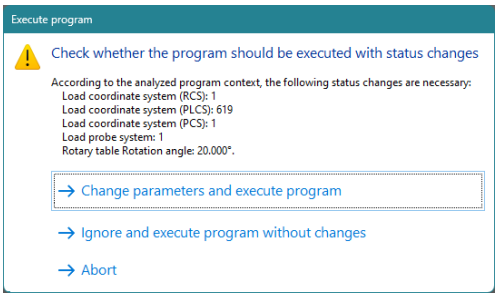
For WENZEL GT gear measuring machines, the user's influence on the rotary table coordinate systems has been minimized to ensure user-independent and precise positioning of the rotary table.

Check Rotary Table Calibration Quality

You use the new function to check the position of the rotary table coordinate system in relation to the physical axis of rotation of the rotary table and the position deviation of the clamping device, e.g. a center pin.



Program Analysis when "Execute from Cursor" with Consideration of the Rotary Table



The rotary table is now also taken into account when analyzing the program context when starting a program from a certain point (i.e. not from the beginning).

As usual, you can select whether the corresponding parameters should be changed automatically before the program is started in the event of status deviations, which increases safety.

New and Actualized CAD Interfaces

WM | Quartis R2024-1 supports the following CAD interface formats:

- CATIA V4 (4.1.9 to 4.2.4)
- CATIA V5 (R8 to **R2024**)
- CATIA V6 (to **R2024**)
- DXF (2000/2002 and R12)
- IGES (to 5.3)
- Inventor (V11 to **2024**)
- Parasolid (9 to **36**)
- Creo, ProEngineer (16 to Creo **10.0**)
- Siemens NX (NX1 to **NX2306**)
- Solid Edge (18 to SE 2023)
- SolidWorks (2003 to **2024**)
- STEP (AP203, AP214, AP242)
- VDA (1.0 and 2.0)

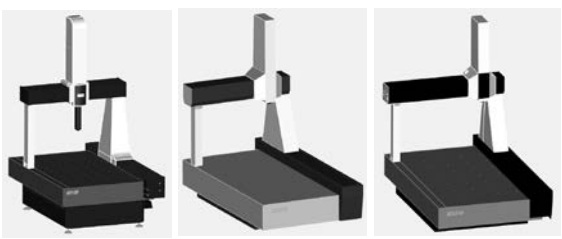
The changed formats compared to WM | Quartis R2023-2 are shown in **bold** in the above list.

You also benefit from general improvements, optimizations and error corrections in the CAD interfaces.

Measuring Machine Display: Additional XO Models Available

In the WM | Quartis configuration, you can additionally select the following measuring machine models for the display in the 3D graphic:

- WENZEL XO (3G) 108 (1200 / 1500 / 2000)
- WENZEL XO (3G) 1210 (1600 / 2000 / 2500 / 3000)
- WENZEL XO (3G) 1510 (2000 / 2500 / 3000)



WENZEL Metromec AG
Rheinfelsstrasse 1
CH-7000 Chur / Schweiz
Phone: +41 81 257 07 00
E-Mail: info@wenzel-metromec.ch
Web: www.wenzel-metromec.ch

WENZEL Group GmbH & Co. KG
Werner-Wenzel-Strasse
D-97859 Wiesthal / Deutschland
Phone: +49 6020 201-0
E-Mail: info@wenzel-group.com
Web: www.wenzel-group.com

Improvements_WM_Quartis_R2024-1_EN_20BD01