

Improvements

# WM | Quartis R2021-2

Update Information

# WM | Quartis



# Improvements WM | Quartis R2021-2

## At a Glance

WM | Quartis R2021-2 offers a wide range of improvements for special applications and areas of use.

WM | Quartis R2021-2 supports the **rotary table as the fourth measuring axis**. You measure rotationally symmetrical workpieces with minimal movement of the linear axes. The main movement is performed by the rotary table, both when scanning and when probing individual points. You benefit from shorter measuring times, optimized measuring sequences and further application possibilities.

WM | Quartis R2021-2 makes **measuring and constructing** easier by providing additional functionality. You now also edit the corner points that were automatically inserted at the height of the safety plane in scanning measurement sequences. You combine several axial curves to form a surface, for example to evaluate the surface shape of a lifting curve. If required, you can switch off probe radius compensation and thus obtain the probe ball centers instead of the probe radius-corrected points.

WM | Quartis R2021-2 includes additional functions for **optical measurement and evaluation based on point clouds**. In addition to the geometric elements circle, cylinder, cone, sphere or plane, you can now also extract surfaces from point clouds. You select the working distance of the line scanner used, activate the optimum video settings and thus scan your components even more flexibly.

WM | Quartis R2021-2 supports the **WENZEL line scanner WM | LS 50** as a further optical sensor in the extensive portfolio of laser triangulation sensors. You use the WM | LS 50 with PH10 as well as with the continuous Renishaw PHS-2 articulating probe head.

WM | Quartis R2021-2 evaluates **position tolerances** according to **ISO GPS** and **ASME Y14.5** with additional material conditions on the references. This allows you to emulate the function of a gauge.

WM | Quartis R2021-2 extends the **DMIS functionality**. This improves **compatibility with OpenDMIS**, among other things. A DMIS preprocessor automatically cleans up deviations from the DMIS standard in OpenDMIS programs, relieving you of manual adjustments.

WM | Quartis R2021-2 offers **updated CAD interfaces** as well as other useful improvements and enhancements, such as improved configurability for **Q-DAS export**. You can read more about this on the following pages.

### Note:

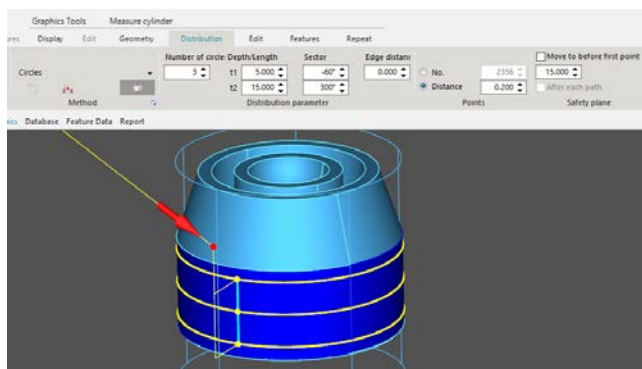
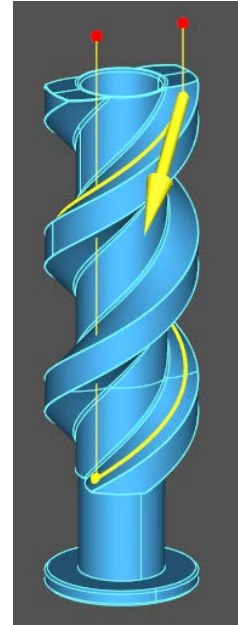
Some improvements are not included in the standard product WM | Quartis R2021-2 and require additional, chargeable modules. These are described in the document "Products and Modules WM | Quartis R2021-2".

## Measure Rotationally Symmetrical Elements with Rotary Table

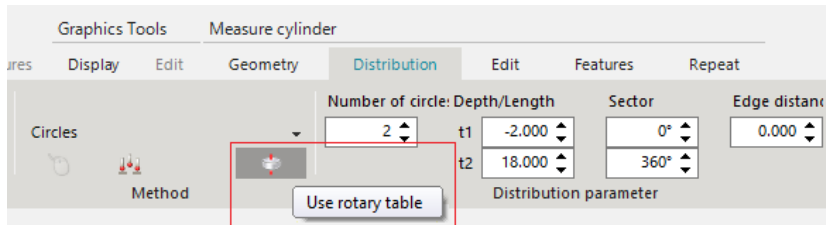
WM | Quartis now also supports the rotary table as the fourth measuring axis. Previously, the rotary table was used as a feed axis for positioning the workpiece.

You scan rotationally symmetrical elements with the rotary table as a measuring axis. You use a touch probe to measure the workpieces with minimal axis movements. Between the points, the rotary table rotates the workpiece until the next point is at the current probe position.

You benefit from shorter measuring times, optimized measuring sequences and additional application possibilities. For example, helices can also be measured more easily.



The new function "Use rotary table" measures the elements circle, cylinder, cone, sphere, plane and curve (planar and axial) with all suitable distributions, such as circles, spiral and axial lines.



Measuring with rotary table works with the WPC 2040 controller with controlled rotary tables as well as with rotary tables with clamping function.

### Rotate Rotary Table (C Axis) via Joystick on HT400

The rotary table can now always be rotated via the joystick on the HT400 control panel if the WPC 2040 controller is in joystick mode and the C button on the HT400 is activated.



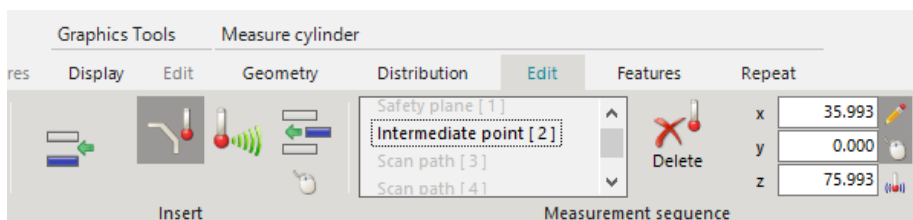
Pressing this key activates the C axis.  
When turning the joystick, the turntable is now rotated.



## Improvements in Measurement and Construction

### Edit Intermediate Points in Scan Measurement Sequence

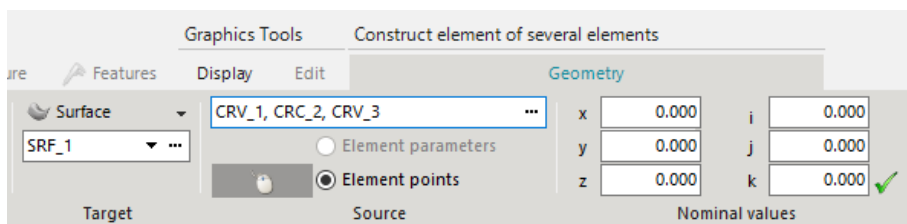
You can now also edit the intermediate points in the scanning measurement sequences. Previously, this was only available when measuring with the probing mode "Triggered".



This is useful, for example, when scanning with a rotary table, if it is not possible to approach or move away via the intermediate points automatically inserted at the level of the safety plane.

### Construct Lifting Curves (Curve, axial) to a Surface

You can now also select lifting curves (curves, axial) in the construction "Construct element of several elements" for the target element "Surface". Previously, the elements surface, point with projection on CAD and the plane curves (curve, planar) could already be selected as source elements.



This means that several axial curves can now be linked to form a surface in order, for example, to evaluate the surface profile tolerance of a lifting curve.

### Switch Off Probe Radius Compensation during Measurement

When measuring, there are applications where the probe tip centers are needed instead of the probe radius corrected points. For this purpose, you can switch probe radius compensation off and on in the probe system settings.

If probe radius compensation is switched off, a warning sign is displayed next to the stylus symbol in the status window.

Probe radius is compensated	Probe radius is <u>not</u> compensated
<p><b>Probe radius compensation</b></p> <p><input checked="" type="checkbox"/> Compensate probe radius</p>	<p><b>Probe radius compensation</b></p> <p><input type="checkbox"/> Compensate probe radius</p>

## Optical Measurement and Evaluation Based on Point Clouds

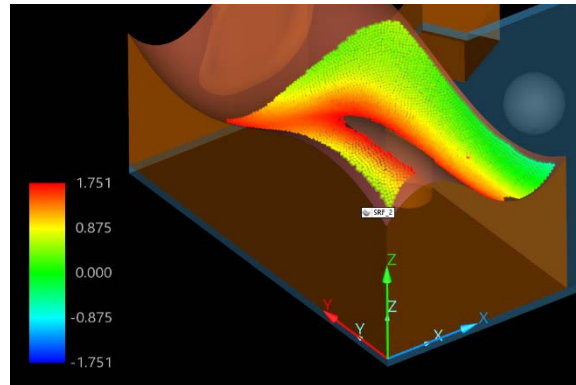
You measure optically by capturing point clouds with line scanners and extracting the required elements from point clouds easily and reproducibly for evaluation.

### Extract Element Surface from Point Cloud

In addition to geometric elements, such as circle, cylinder, cone, sphere or plane, you now also extract surfaces from point clouds.

Extracting surfaces is a good alternative to measuring the surface element directly.

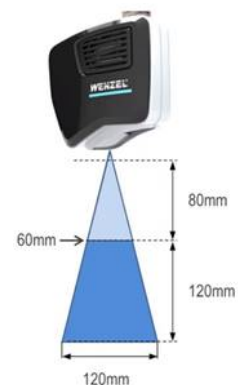
After a point cloud scan, you can flexibly extract and evaluate multiple surfaces.



### Line Scanner: Working Distance Adjustable

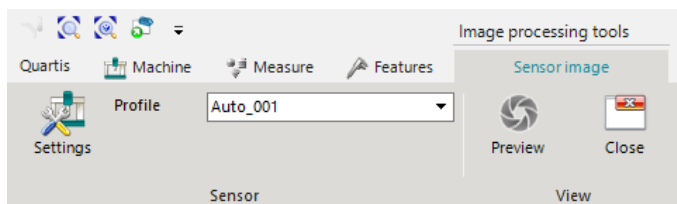
The working distance of the line scanner can now be adjusted. This allows you to scan the point clouds on your components even more flexibly.

- With a larger working distance selected, scanning will be performed with a greater line width.
- With a smaller working distance selected, scanning is performed with a higher resolution.
- In tight spaces, a larger working distance gives you more room to maneuver. Obstacles such as clamps can be overcome. The number of sensor swivels required is reduced.



### WENZEL Line Scanner: Load Video Settings

You are using a WENZEL line scanner WM | LS 150, WM | LS 50, WM | LS 70 or WM | MLS. The profiles saved via the "Video Settings" dialog can now be loaded during scanning.



This allows individual scans to always be performed with the same sensor settings optimized for the component and the measurement task. This replaces the previous "exposure time" setting for the above-mentioned line scanner sensors.

### WENZEL Line Scanner WM | LS 50 Supported

With the WM | LS 50 line scanner, another laser triangulation sensor is available in WM | Quartis. The configuration and application of the WM | LS 50 sensor is identical to the WM | LS 150, which has already been supported since WM | Quartis R2020-2.



# Improvements WM | Quartis R2021-2

## Evaluate Features According to Current ISO and ASME Standards

### Position Tolerance: Further Reference Systems with Material Requirement / Boundary

You evaluate position tolerance according to ISO GPS or ASME Y14.5 with material conditions on the references. The calculation algorithms in WM | Quartis emulate the function of the gauge.

Material conditions on the secondary and tertiary reference are now possible in the following reference systems: ISO case 3.1.1, 3.1.5, 3.5.1 and 3.5.5 as well as ASME case 3.3 and 3.9.

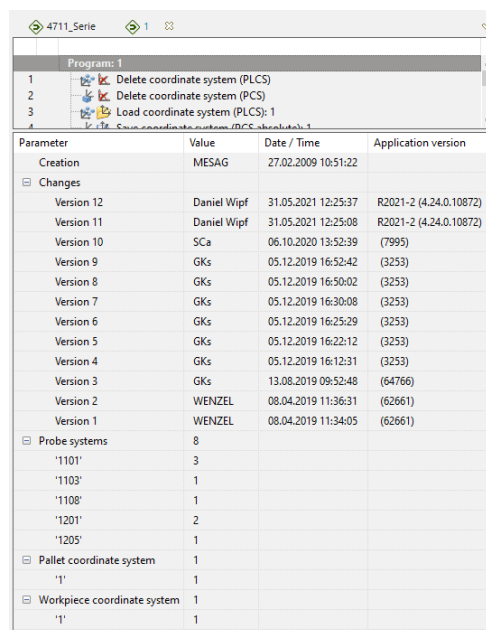
## Programming

### Program Header Shows Change Status, History and Further Information

You want to see the change status and history in the measuring program.

All program versions are now displayed in the program header. It is now also documented with which WM | Quartis release the program was changed.

In the program details, you can also see which probe systems, pallet coordinate systems and workpiece coordinate systems that are used in the program.



Parameter	Value	Date / Time	Application version
Creation	MESAG	27.02.2009 10:51:22	
Changes			
Version 12	Daniel Wipf	31.05.2021 12:25:37	R2021-2 (4.24.0.10872)
Version 11	Daniel Wipf	31.05.2021 12:25:08	R2021-2 (4.24.0.10872)
Version 10	Sca	06.10.2020 13:52:39	(7995)
Version 9	GKs	05.12.2019 16:52:42	(3253)
Version 8	GKs	05.12.2019 16:50:02	(3253)
Version 7	GKs	05.12.2019 16:30:08	(3253)
Version 6	GKs	05.12.2019 16:25:29	(3253)
Version 5	GKs	05.12.2019 16:22:12	(3253)
Version 4	GKs	05.12.2019 16:12:31	(3253)
Version 3	GKs	13.08.2019 09:52:48	(64766)
Version 2	WENZEL	08.04.2019 11:36:31	(62661)
Version 1	WENZEL	08.04.2019 11:34:05	(62661)
Probe systems			
'1101'	3		
'1103'	1		
'1108'	1		
'1201'	2		
'1205'	1		
Pallet coordinate system			
'1'	1		
Workpiece coordinate system			
'1'	1		

## Enhanced DMIS Functionality

You execute measurement programs which are written in the neutral DMIS language. This release offers numerous enhancements in the supported DMIS language scope, which among other things improves compatibility with OpenDMIS measurement programs.

- PRCOMP/OFF and PRCOMP/ON are supported
- OPEN/DID(Iname),FDATA,... is read over
- DAT() is allowed as reference when evaluating position tolerances
- TOL/DISTB,...,AVG ..., MIN ...,MAX are supported for Quartis features
- Improved handling of macro parameters
- DID(Iname) = DEVICE/INCR,'filemask' is supported

## Preprocessor Cleans Up OpenDMIS Programs



The QrtDmisPreProcessor software tool automatically cleans up certain DMIS standard deviations.

In the current release, the scope of the cleanup has been extended.

This relieves you from manual adjustments.

## Further Innovations Simplify Daily Work

### New and Actualized CAD Interfaces

WM | Quartis R2021-2 supports the following CAD interface formats:

- CATIA V4 (4.1.9 to 4.2.4)
- CATIA V5 (R8 to R2021)
- CATIA V6 (to R2021)
- DXF (2000/2002 and R12)
- IGES (to 5.3)
- Inventor (V11 to 2021)
- Parasolid (9 to 33)
- Creo, ProEngineer (16 to Creo 7.0)
- Siemens NX (NX1 to **NX1953**)
- Solid Edge (18 to SE 2021)
- SolidWorks (2003 to 2021)
- STEP (AP203, AP214, AP242)
- VDA (1.0 and 2.0)



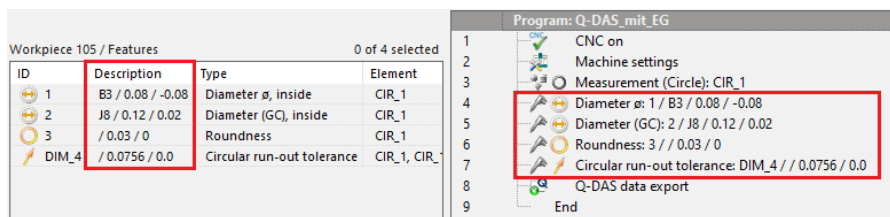
The changed formats compared to WM | Quartis R2021-1 are shown in **bold** in the above list.

You will also benefit from general improvements, optimizations and bug fixes in the CAD interfaces.

### Q-DAS Export: Updated K-Fields, Improved Configurability

You export feature data to a Q-DAS file and benefit from the updated and extended list of usable K fields according to Q-DAS ASCII transfer format (V12 / 2015).

Any content can now be assigned to all non-predefined fields. For the output of feature-specific values, such as the feature class (K2005) or the warning and intervention limits (K8012, K8013, K8014, K8015), you can store the values in the feature description.



### WM | I++ DME Server: Further I++ DME Commands Supported

You use WM | Quartis as I++ DME server. The commands AlignmentVolume() and CollisionVolume() are now supported. The I++ DME client Zeiss Calypso, uses these methods to query the collision volume of the probe system.

### Measuring Machine Display: Further WENZEL LH Models Available

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

- WENZEL LH (3G) 2012 (5000)
- WENZEL LH (3G) 2617.5 (4500)
- WENZEL LH (3G) 2617.5 (6000)





**WENZEL Metromec AG**

Rheinfelsstrasse 1  
CH-7007 Chur / Schweiz  
Phone: +41 81 257 07 00  
E-Mail: [info@wenzel-metromec.ch](mailto:info@wenzel-metromec.ch)  
Web: [www.wenzel-metromec.ch](http://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](mailto:info@wenzel-group.com)  
Web: [www.wenzel-group.com](http://www.wenzel-group.com)

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Subject to technical modification and to changes in scope and design.