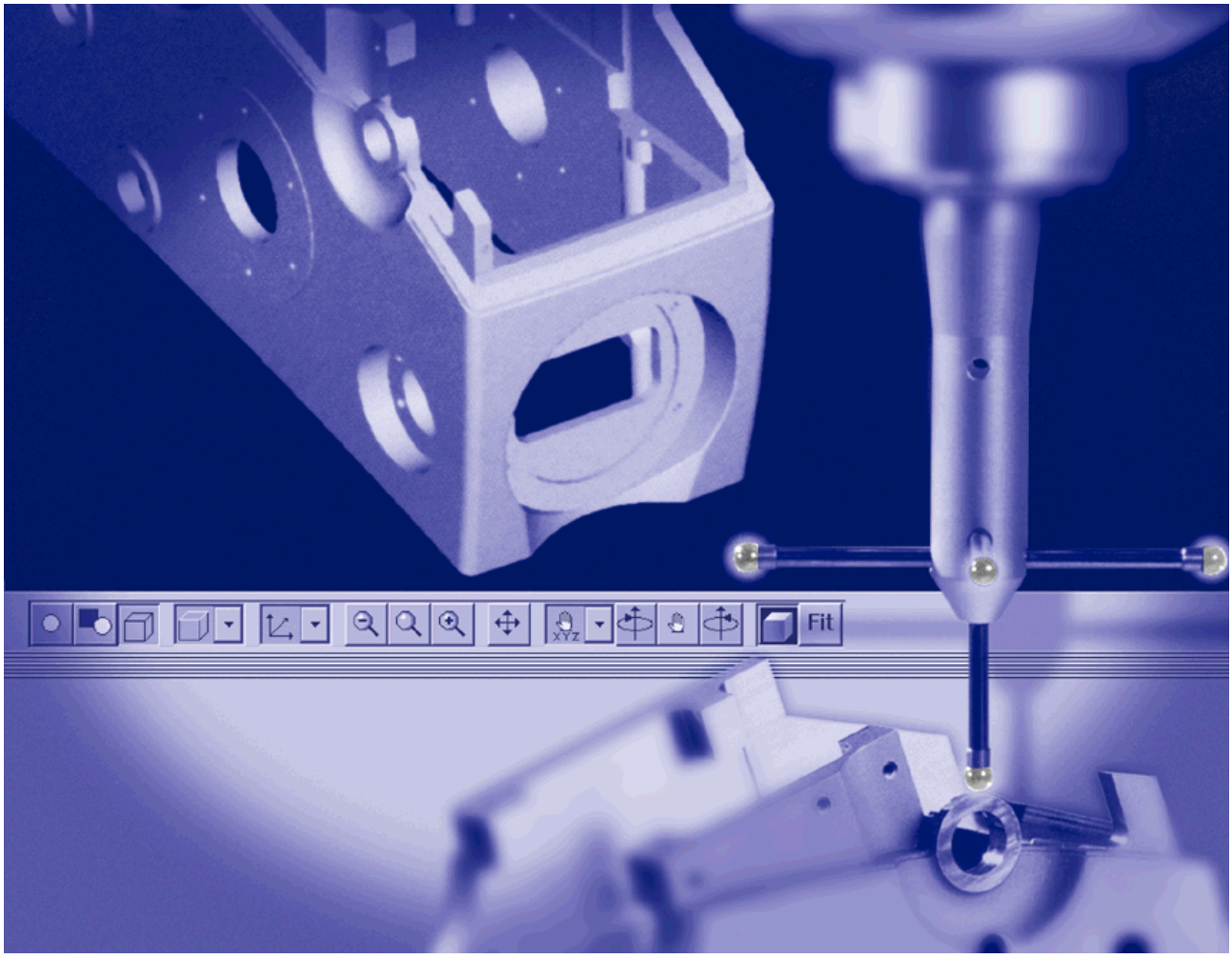


CALYPSO

Release Information
CALYPSO 2021

Documentation for Version 7.2.16

The design and delivered components of the CMM, its options, the program packages, and the relevant documentation are subject to change.

This manual must not be circulated or copied, or its contents utilized and disseminated, without our express written permission. Persons misusing this manual are subject to prosecution.

This manual is subject to modification. All rights pertaining to changes in the CMM and its options reserved.

Although utmost care has been taken in preparing the information given in this manual, we cannot assume any liability for its completeness and correctness, except in case of willful intent.

CALYPSO
Version 7.2.16
Documentation for Version 7.2.16
2022-10-28

Table of Contents

Chapter 1 Notes

1 Notes

This chapter contains:

Pre-installation notes

Note

Be sure to observe the following notes before installing this software!

Requirements for upgrading to CALYPSO 2021

CALYPSO 6.0 or higher and Windows 10 are required to upgrade to CALYPSO 2021. Upgrading from versions older than CALYPSO 6.0 or operating systems older than Windows 10 may cause problems due to changed path settings or new licensing procedures. In such cases, subsequent adjustments of system and program settings may be necessary.

Information on use

Optimization of the bore pattern best fit

The use of a second cylinder as a reference for the bore pattern best fit can lead to deviations that are greater than expected. The use of a circle avoids this problem.

Better results for curve best fit

From this version, the curve best fit based on nominal values frequently leads to better results.

FOSS list available

The FOSS list can be opened via **? → About... → Show FOSS**.

Morphological filter does not work properly with freeform surfaces

The use of morphological filters does not work properly with freeform surfaces We recommend not using this filter for the time being.

Autofocus times optimized

The calculation algorithm has been optimized to further reduce the autofocus times and increase its reproducibility and accuracy. When using an autofocus system, very critical ambient conditions or other unfavorable conditions can cause the system to abort because sensitivity has increased..

In this case, please contact our support team.

Difference to older CALYPSO versions regarding the identification of invalid measurement points in the freeform surface

During the identification of invalid measurement points in the freeform surface, an error is eliminated. The number of invalid measurement points can vary compared to older CALYPSO versions.

False color display of the point sets between PiWeb and CALYPSO harmonized

The false color display of the point sets between PiWeb and CALYPSO has been harmonized.

Files that are not part of a versioned measurement plan are kept

If a versioned measurement plan is opened, files and directories that are not part of the versioned measurement plan are no longer deleted.

CAD report settings in the compatibility settings

In the compatibility settings under **CAD Report: Quality vs. Speed**, you can select if the CAD report will be created in detail or quickly.

Image acquisition feature not available on O-DETECT

The image acquisition feature is currently not supported on O-DETECT.

Projection of points on freeform surfaces enhanced

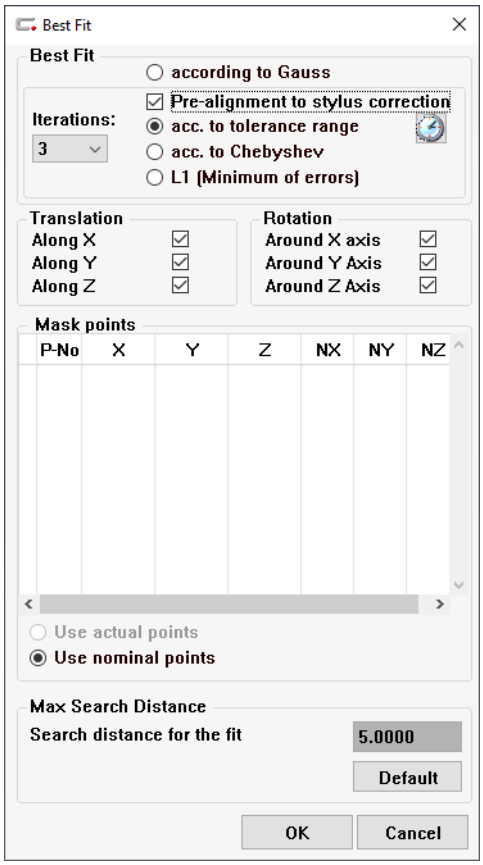
The projection of points on freeform surfaces has been enhanced. This can lead to deviations in the measurement results.

Minimum firmware versions for O-INSPECT changed

It has been determined that the OI322, OI543 and OI863 coordinate measuring machines with a C99L or C99L2 controller will not require a higher firmware version with CALYPSO 7.4. The corresponding notice has therefore been removed from the list.

Pre-alignment to correct the stylus radius for curve best fit in the tolerance band

Pre-alignment of the stylus radius correction has been added to the **Best fit in the tolerance band** function for a 2D curve.



Length of file names and file paths

When saving a measurement plan, the specified file name, including path, must not be longer than 256 characters.

Optimal interaction between CALYPSO and the hardware

To fully utilize the potential of CALYPSO and the hardware, you should use original ZEISS accessories. This is the only way to ensure that the given specifications can be met.

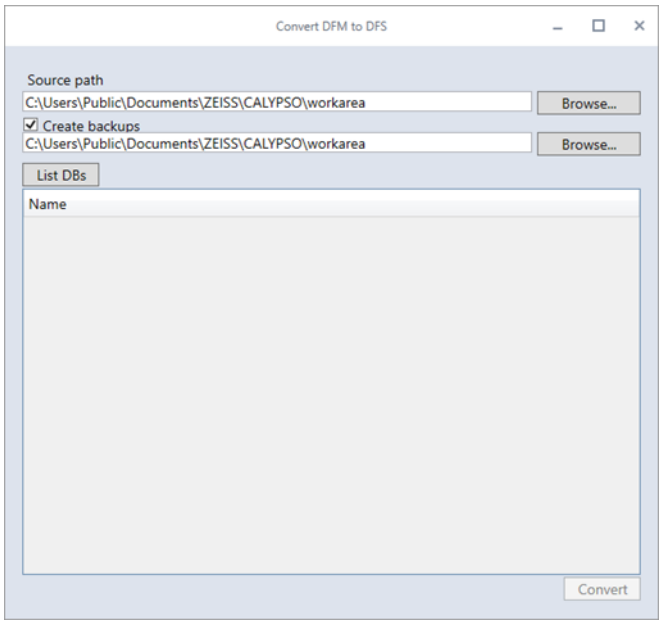
CALYPSO pcm option - Selection in the Formula dialog box

Measurement runs are parameterizable with the CALYPSO pcm option. The scope of the PCM functions and PCM commands is described in the operating instructions for the option. Pressing the **Function** button opens the PCM function list and the PCM parameter list as a selection guide for PCM commands. The prerequisite for programming and running measurement plans which contain PCM commands is the CALYPSO

pcm option. The formula always can be called via the **Nominal value** and **Actual value** buttons. The CALYPSO pcm option is not required for this purpose.

PiWeb reporting database still available only in DFS format (*.dfs)

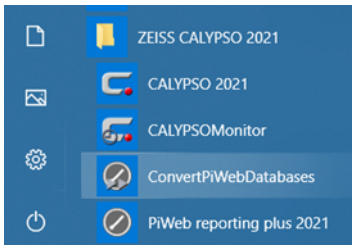
The PiWeb reporting database format was converted to the DFS format as of CALYPSO 2020. CALYPSO 2021 only supports this new format. Older databases must be converted one time.



Advantage of the new DFS database:

- Faster reading of values from the the database.
- Faster writing of values to the database.
- Maximum of 1000 data sets (the old database was limited to a maximum of 4 GB)

A new CALYPSO 2021 measurement plan creates the PiWeb reporting database format (*.dfs) automatically. Older DFM databases created prior to CALYPSO 2020 have to be converted to the new DFS format. If the conversion has not yet occurred, it must be performed once in CALYPSO 2021 under **Windows Start ZEISS CALYPSO 2021 → ConvertPiWebDatabase**.



Use of XXT styli in the DuraMax simulation

To correctly display XXT styli created with the stylus kit for DuraMax, they must be rotated 90 degrees in the stylus kit to correctly show the installation direction for DuraMax.

Improved calculation of position tolerances

The calculation of position tolerances with a slot or rectangular hole in the datums has been enhanced. This can result in different results.

BestFit evaluations of curves

BestFit evaluations of curves from recalled, self-centered measured cylindrical helical paths were not correctly fit if the direction of the nominal and actual standards were significantly different.

Use of NVIDIA graphics cards

The use of NVIDIA graphics cards is recommended. The graphics card drivers must always be kept up to date. The 3D setting must be set to **Autodesk Motion Builder compatible**. This enables maximum performance and system stability.

Creation of a coordinate system from tolerance best-fit

If a coordinate system is created from a tolerance best fit, which will used for the following curves, the stylus radius must be corrected with the measurement points.

Different stylus tip radius in PiWeb report

The stylus tip radius shown in the PiWeb report corresponds to the radius used to calculate the feature. It may be different than the actual stylus tip radius. Use the options available in CALYPSO to check the actual stylus tip radius.

New IPP Export interface

The **IPP Export** function has been integrated into this version of CALYPSO. Results can be exported as an IPP file.

Reset view tolerance best fit method

The calculation method for position tolerance and for the bore pattern best fit was reset to the level of CALYPSO 6.8.12.

Profile element function removed

Measure -> **Additional features** -> **Profile element** has been completely removed.

IVY Export function removed

The **IVY Export** function has been removed from CALYPSO. Selected reports containing the measurement results can no longer be sent to the IVY server.

New switch in QDASCONV.CON

MaskNaN = [INT5]

- Value = 0: Not active
- Value > 0: active
- Value is on [INT5] (s. Q-DAS ASCII transfer format, V12 / 2015 German)

If MaskNaN is activated, the following behavior will be used:

- CHR file: the "actual" column contains exactly the character string "NaN"
- DFX file: K0001 is written "0"; K0002 becomes the value "MaskNaN" (e.g. 90)

The switch works with:

- useKnotation = 0 | 1 | 2

In order to use the MaskNan switch, the setting **Err-characteristics in the chr table file** must be active. This can be performed in the compatibility settings of CALYPSO.

Measurement of surfaces under a transparent surface

The measurement of surfaces under a transparent surface can result in problems with DotScan. If necessary, travel paths and/or probing strategies must be adjusted.

Notes from previous CALYPSO versions

Floating point numbers

Microsoft has changed the way it uses floating point numbers. This can lead to minor changes in the measurement results.

Deviation in the output in an additional coordinate system

The use of an intersection of skewed 3D lines with a projected result could lead to an offset in alignments. This occurred more often when the coordinate system was tilted towards the base system. This behavior has been corrected since CALYPSO 7.0.00 and can lead to changes in the measurement results.

Temperature sensor and workpiece temperature sensor

Simultaneous use of the temperature sensor and workpiece temperature sensor is not possible!

Possible discrepancies between documented error and actual error

The way in which CALYPSO calculates errors for the report was changed starting with the 2019 version.

This can result in discrepancies between documented error and actual error.

Correction of the “Caliper Distance” and “Polar Caliper Distance” characteristics

The “Caliper Distance” and “Polar Caliper Distance” characteristics were not calculated with filtered points.

The correction may lead to changed results.

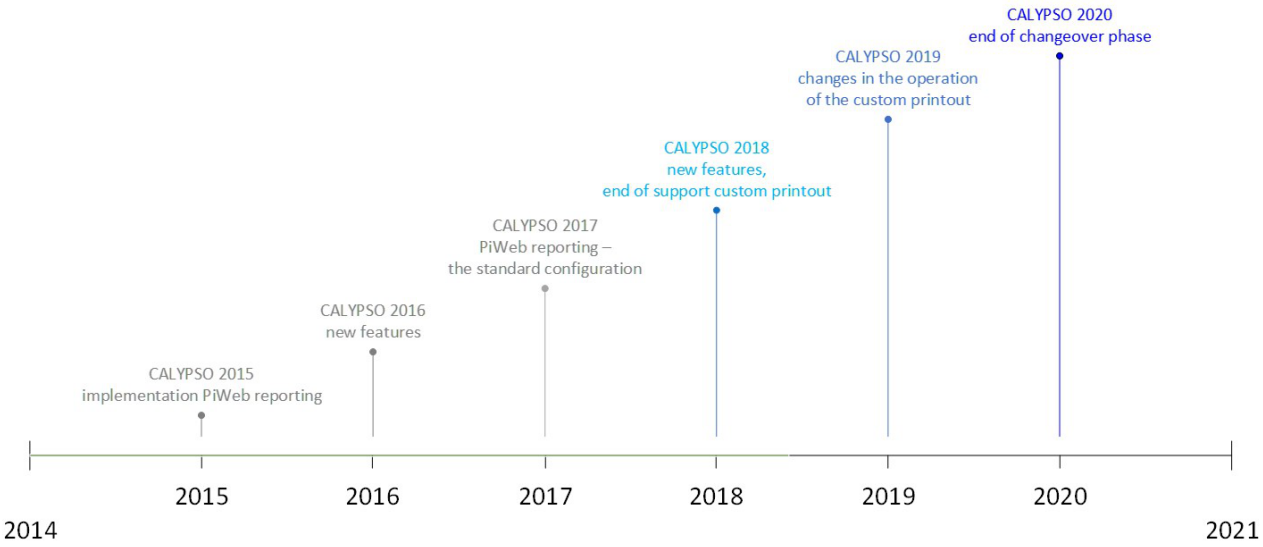
Discontinued report templates: behavior from CALYPSO 2020

PiWeb reporting: timeline for the switchover phase from 2014 to 2020

A new reporting system was integrated into CALYPSO 2015. PiWeb reporting joins PiWeb reporting plus, PiWeb sbs (sbs= small business solution) and PiWeb enterprise as part of the new PiWeb family.

PiWeb reporting is now the standard for reporting at ZEISS. Other reporting methods will no longer be enhanced.

CALYPSO 2019 features many new beneficial functions for PiWeb reporting. Detailed descriptions can be found in the following chapters.



Discontinued report templates

1. **Custom report, user-defined report**

   Latest version: CALYPSO 5.8

   Replacement: PiWeb reporting

2. **Graphic element, Basic Reporter (PiWeb 5.0)**

   Latest version: CALYPSO 5.0

   Discontinuation of development 8 March 2013

   Replacement: PiWeb reporting

3. **Flex reporter option (PiWeb 5.0)**

   Latest version: CALYPSO 5.0 with PiWeb 5.0

   Discontinuation of development 8 March 2013

Replacement: PiWeb reporting plus

SMA customers with Flex reporter receive a free license upgrade to PiWeb reporting plus.

What happens from CALYPSO 2020?

– **CALYPSO measurement plans created prior to CALYPSO 2020:**

  Older measurement plans that were programmed before CALYPSO 2020 and use the custom report, graphic elements or the Basic Reporter, can also still be used with the old reports. There will be no troubleshooting for old reports.

– **CALYPSO measurement plans created from CALYPSO 2020:**

  The custom report, the graphic element and the Basic Reporter can be opened. There will be no new functions and no troubleshooting for old reports.

– **CALYPSO measurement plans created from CALYPSO 2022:**

  The custom report, the graphic element and the Basic Reporter can no longer be opened. There will be no new functions and no troubleshooting for old reports. All other reports and printouts will remain active.

All other reports and printouts will remain active.

Calculation of angularity: changed results

The algorithm to calculate angularity has been changed. For angularity of planes with respect to a single datum, this possibly results in somewhat smaller tolerance zones, which represent the actual minimum.

LineScan 2-8

Installation of LineScan 2-8 (first-time installation)

1. Run *Carl Zeiss Optical Components LineScan 1.22.1 Setup* as administrator.

Installing LineScan 2-8 with already existing LineScan sensor systems

1. Uninstall the existing LineScan installation via the Control Panel: *Carl Zeiss Optical Components LineScan X.XX.X (Setup < 1.22.1)*.
2. Run *Carl Zeiss Optical Components LineScan 1.22.1 Setup* as administrator.

3. Install the existing LineScan sensors and LineScan 2-8 via the *ToolSetup* on the enclosed CD.
4. Requalify all existing LineScan stylus systems.

Installing LineScan 2-25, -50, -100 with already existing LineScan sensor systems

1. Run the *Carl Zeiss Optical Components LineScan 1.22.1* software update as administrator.

LineScan operation

To use LineScan 2-8, WBScan must be uninstalled before installing CALYPSO.

ROTOS

In the ROTOS alignment windows and in the management of the roughness standards, it is possible to change the measurement direction. Changing the measurement direction leads to malfunctions that can result in damage to the equipment! Therefore, the measurement direction must *not* be changed!

CAD view in the AutoRun mode

The CAD view must remain open in the AutoRun mode. Closing the CAD view may lead to measurement abort or unexpected results.

Using space points

The use of space points with non-axis-parallel directions for the creation of the base alignment, which is also created with a rotation, could lead to a flawed calculation of the base alignment.

Position tolerances with the “2D Line” feature

The use of different styli for measurement of angularity, perpendicularity, and parallelism based on a 2D Line feature may have led to incorrect results in previous CALYPSO versions due to adding the difference between the stylus radii.

XTR

When using the XTR probe, the “Optimized navigation for Rotating Carriers” option must be set to **Off** in the CALYPSO Compatibility Settings.

Rotary table operation

Using the RT-AB rotary table

If you use the RT-AB rotary table, which can be lifted and lowered for loading, the subsequent measurement must be run in the same condition as when the base alignment was defined. Otherwise, the subsequent measurement will not relate exactly to the previously defined base alignment!

Using the RT-AB rotary table

The lowered state of the RT-AB is only intended for loading the rotary table and is not suitable for measurements! Make sure that base alignment definition and subsequent measurement take place in the lifted state of the RT-AB.

RT-AB displacement on CMM

Operation of the RT-AB rotary table requires the reference mark to be requalified after any displacement of the rotary table. To do so, select “Qualify RT Alignment Mark” under “Other” in the stoplight window or, when qualifying the rotary table axis, select “Feature for rough pos. of RT axis” in the RT menu.

RT location for the RT-AB rotary table

When performing a rough qualification of the RT-AB rotary table angle in CALYPSO “RT location”, the user is prompted to probe the reference point within the RT location function. **The rotary table must be positioned at 0 degrees**. Observe the 0 degree information.

“Missing Bore” function

When using the “Missing Bore” function in connection with measuring probes (e.g. VAST, etc.), a measuring force of at least **100 mN or higher** is required to qualify the stylus used. Otherwise the function cannot be guaranteed. This also applies to the “Search distance after nominal position” function.

Probes, stylus systems and qualification

RC list qualification using LineScan and LineScan II

List qualification is a special type of CNC qualification. The set limit values are monitored during this process and the stylus will be marked as invalid if a limit value is exceeded. In the standard CALYPSO installation, limit value monitoring for Sigma is set to 0.01 mm. This limit value is too low for a LineScan sensor and may have to be corrected or disabled.

ROTOS light

If more than ten active Bluetooth devices are in the vicinity of a ROTOS sensor used with CALYPSO 2021, the ROTOS sensor may not be detected automatically when a stylus system is created for the first time. In such cases, users can enter the Bluetooth ID manually.

The Bluetooth ID is specified on the sensor. Any existing leading company number (e.g. 0080e1) must NOT be entered, otherwise the ID will not be accepted and the connection not established.

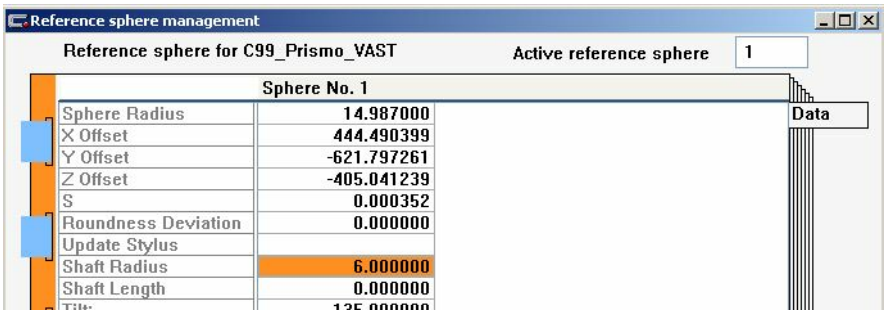
Once the stylus system has been successfully added, neighboring Bluetooth devices will no longer cause interference.

Canceling a list qualification

If a list qualification process is canceled, the articulating system may stop in an undefined position and the stylus system name changes to not_defined. In this case, you must reject the prompt (Probe in direction of the stylus shaft) and reinsert the stylus system before restarting the qualification. Otherwise, a collision may occur.

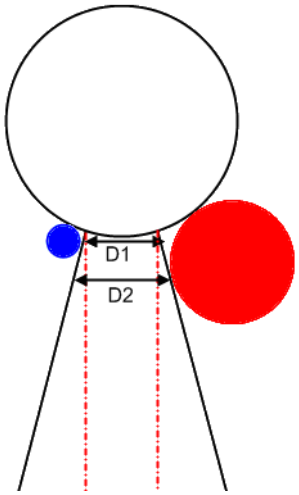
Shaft radius of the reference sphere

The shaft radius of the reference sphere entered on the Reference sphere management page must be large enough for any stylus radius:



To avoid collisions during stylus qualification, the shaft radius entered must be increased to a value that takes into account the largest stylus tip radius (see D2 for the red sphere in the sketch).

However, if you select a shaft radius that is too big, the number of possible qualifiable angular positions (RDS, DSE, etc.) is limited. To avoid this problem, the same reference sphere can be created several times, each time with a different shaft radius, and selected for stylus qualification as required.



Optical systems

O-INSPECT: control console potentiometer

⚠ CAUTION

The potentiometer on the control console of the O-INSPECT has no influence on the rotary table movement.

GigE camera installation

The use of a GigE camera (OI 322) requires adjustments to the firewall of the CALYPSO computer. Please observe the enclosed information sheet or the notes in the **600061-4107.010_Konfiguration_Firewall_Kurzversion.pdf** file stored in the Tools\GigE Sensor Tools directory of the DVD.

ViScan – manual CNC mode

In the manual CNC mode, the probing method must be selected again manually after focusing.

CMM controller, Windows system, and software

METROTOM measuring module

An existing version of CALYPSO must be uninstalled before CALYPSO with the METROTOM measuring module is installed! Multiple installations of CALYPSO with the METROTOM measuring module are not permitted.

FACS automation – individual adjustment required

The FACS automation interface is tailored to each customer's needs and must be adapted individually. Contact our support team before using CALYPSO with your FACS application.

64-bit Ghostscript is incompatible

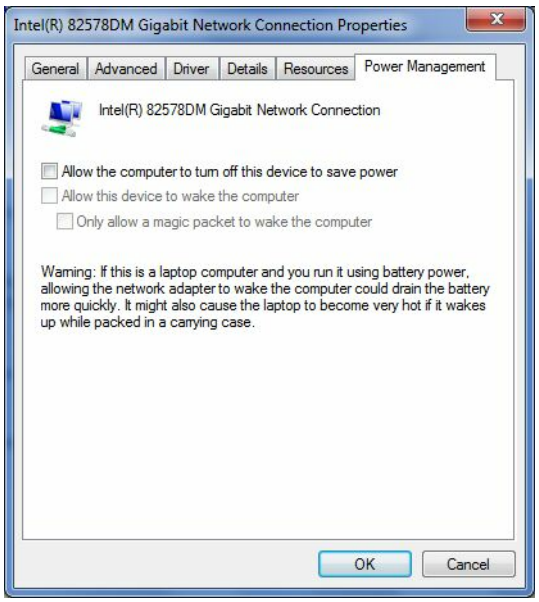
The 64-bit version of Ghostscript does not work with CALYPSO. If you want to use Ghostscript, install the **32-bit version**.

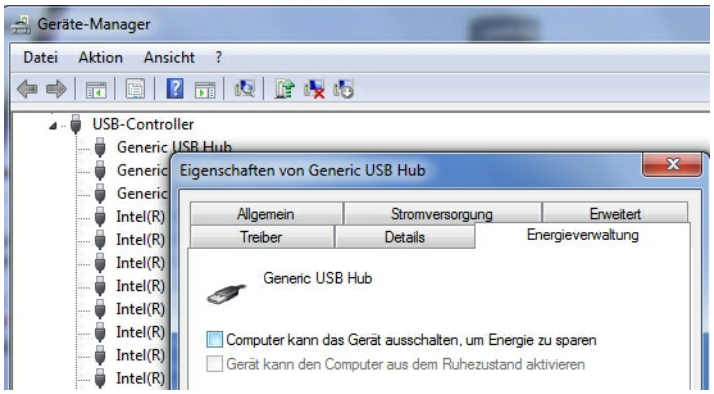
.pdf output – cumulative function

Ghostscript is required for cumulative output in .pdf format. Version 8.56 or higher is required for problem-free use.

Configure power management for network boards and USB hubs

On Windows systems, the power management of the network boards must be configured so that it can no longer be turned off by the operating system. To do this, set the following configuration in the Device Manager for the respective network boards or USB hubs:





Uncheck the box next to Allow the computer to turn off this device to save power.

Recommendation: set the power mode to Never and High Performance in the system power options.

64 bit – graphics card driver for NVIDIA FX1800

With an NV FX1800 graphics card and a 266.45 driver, the driver must be modified for 64-bit systems. The 3D setting must be set to **Autodesk Motion Builder compatible**. Otherwise CAD models may react much slower when you rotate or move them.

Modification of installed files

Installed CALYPSO files must not be modified! Renaming or removing files (including measurement plans!) that are stored in the CALYPSO directory during installation can lead to malfunction when using the graphic element. The automatic repair installation triggered by this usually fails. Manually inserting program files (e.g. via Windows Explorer) can also lead to malfunctions.

2 New Features

This chapter contains:

New features in CALYPSO 2021

General information about the “New features” chapter

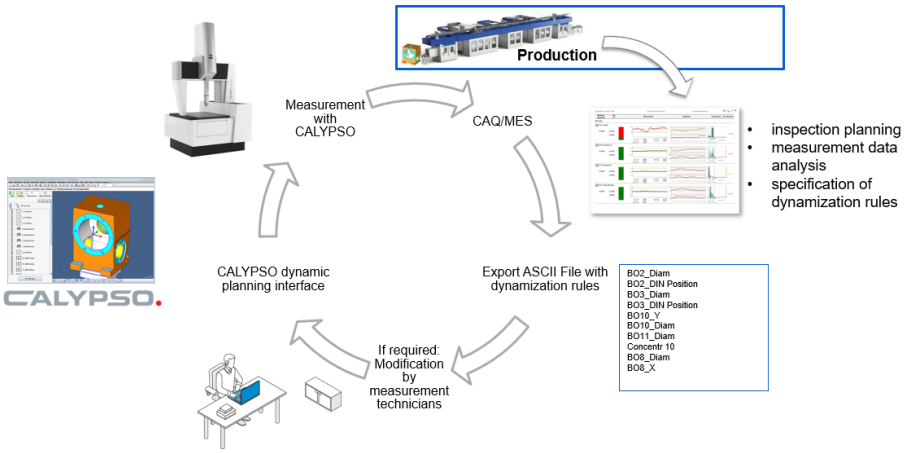
NOTE

Images of the software interface in the *New features* chapter are only available in German or English in some cases.

New CALYPSO dynamic planning option

154090

You can use the CALYPSO dynamic planning option to dynamically control the scope of inspection via prepared files.



Benefit

The CALYPSO dynamic planning option increases the productivity of your component inspection by using the characteristic inspection level. Automatic adjustment of the inspection level with changes of important influencing factors in the QA process is possible. At the same time, quality control costs are reduced in the process.

Details

Basic concept and systematic procedure

The inspection scope files are simple text files, each of which contains a list of the measurement plan characteristics to be inspected. Each line contains the name of exactly one characteristic here.

You can control the scope of the measurement plan and the measurement runs depending on which files you save to which directories.

– CALYPSO initially searches for inspection scope files in the *char_selections* subdirectory of the project directory and offers them for selection in the CNC Start window.

– If such a directory is not available, CALYPSO searches for inspection scope files in the *...\workarea\char_selections_wa\measurement plan name* subdirectory.

Exporting a characteristics list

Select all characteristics and, via the **CNC** context menu, open **Define a Group of Characteristics**.

When the file extension is specified, the corresponding selection file is automatically created in the desired directory.

– **.seli* = storage in inspection directory

– **.selw* = storage in work area directory

Importing a characteristics list

Possibility for defining the scope of inspection via external files:

– The file contains the list of the characteristics to be measured.

– Different files in the *char_selections* subfolder of the measurement plan.

– The selection of characteristic groups on the CNC start page will be extended.

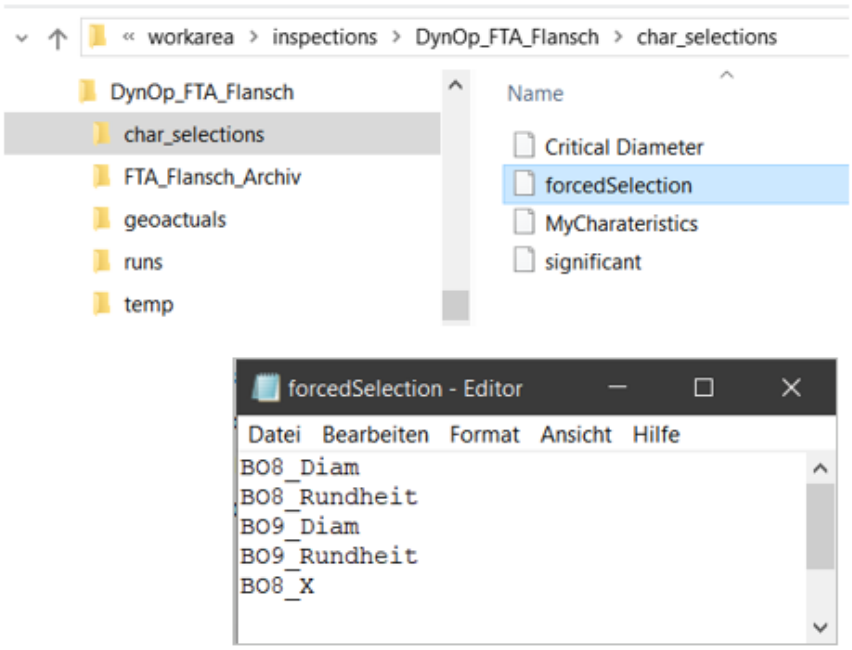
Search order:

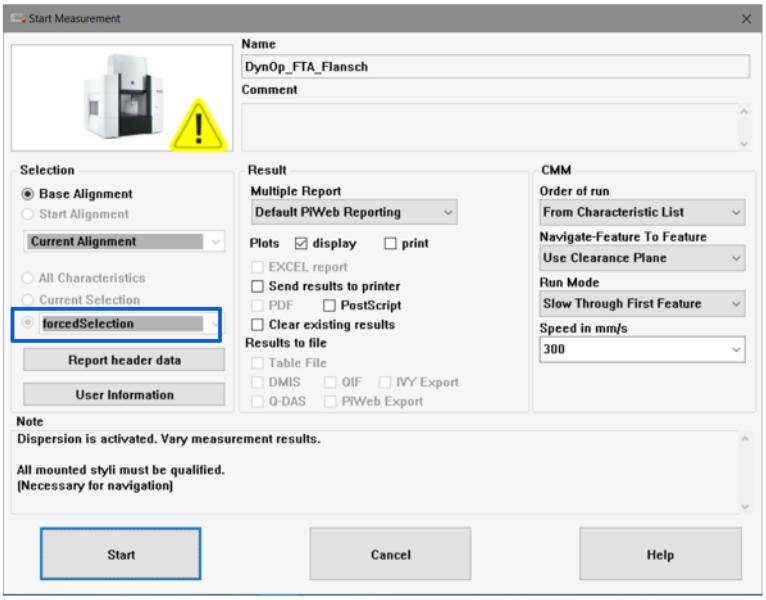
1. List the file list in the *char_selections* subdirectory of the measurement plan folder.
2. If nothing is found in the measurement plan folder: Search for the *char_selections_wa* subdirectory in the *workarea* directory. Search for the folder with the name of the measurement plan in this subdirectory.
3. Show the file list.

The selected external file from the selection list is the default value of the scope of inspection.

Characteristic list as forced default value

If the subdirectory contains a *forcedSelection* selection file, this selection is always applied and no other selection is possible.





Default value of report header parameters of an external file

Default value of report header parameters of an external file:

– Place the external file *setProtHeadParam* in the selection directory for characteristics.

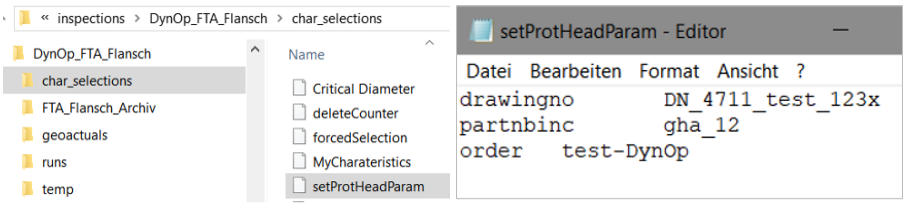
– Enter a line with a language-neutral keyword and value for each parameter to be set, separated by a TAB stop (list of report header parameters, see Online Help).

Example:

drawingno DN_4711

order OR_0815

u_cust CUST_123



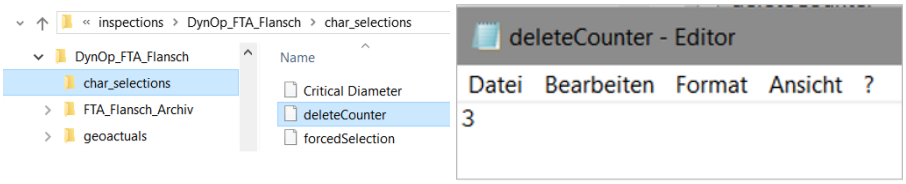
For the automatic measurement run, the existing parameters are replaced by the contents of *setProtHeadParam*. An automatic reset of the forced selection with *deleteCounter* also deletes the default file*setProtHeadParam*.

Specifying a counter for the scope of inspection

As an option, the *forcedSelection* file can be be deleted automatically after a certain number of measurements.

– Specify a *deleteCounter* file with the desired number of forced measurements in the selection directory.

– Once the measurement plan has been run this number of times, the forced selection is reset. Regardless of whether the run was started individually or in a pallet.



The following files are deleted:

– Number of components to be checked: *deleteCounter* is deleted.

– Forced default value of scope of inspection: *forcedSelection* is deleted and stored as *forcedSelection_OLD*.

– Report header parameter: *setProtHeadParam* is deleted and stored as *setProtHeadParam_OLD*.

More flexibility for special applications

Selection directory deviating from measurement plan name:

If the selection file for a measurement plan is not located in a subfolder which bears the name of the measurement plan, the value of a report header parameter can be used as an alternative.

– To do this, save the *charSelSubDir* file to the *char_selections* subdirectory of the measurement plan.

– This file must contain the keyword of a report header parameter (e.g. partid).

STEP AP 242 now also with PMI

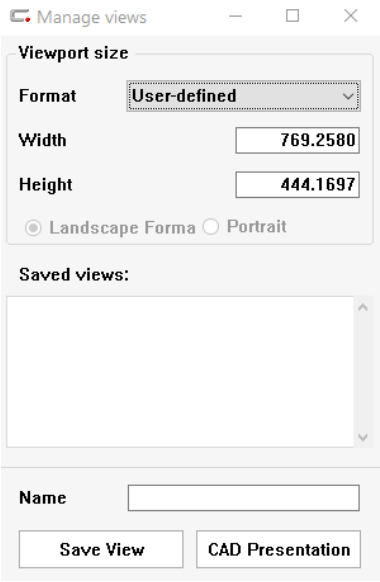
Now PMI information which is available in the STEP AP 242 format also can be imported directly. The STEP interface is sufficient for this purpose.

Improving the workflow: Defining CAD/CAD view/Redefining report/hyperlink according to CALYPSO/CAD view

148088

New dialog

CAD → Manage views



General function

CAD presentations can be created by entering a name or by selecting a previously saved view.

CAD views can be saved, renamed, loaded and deleted.

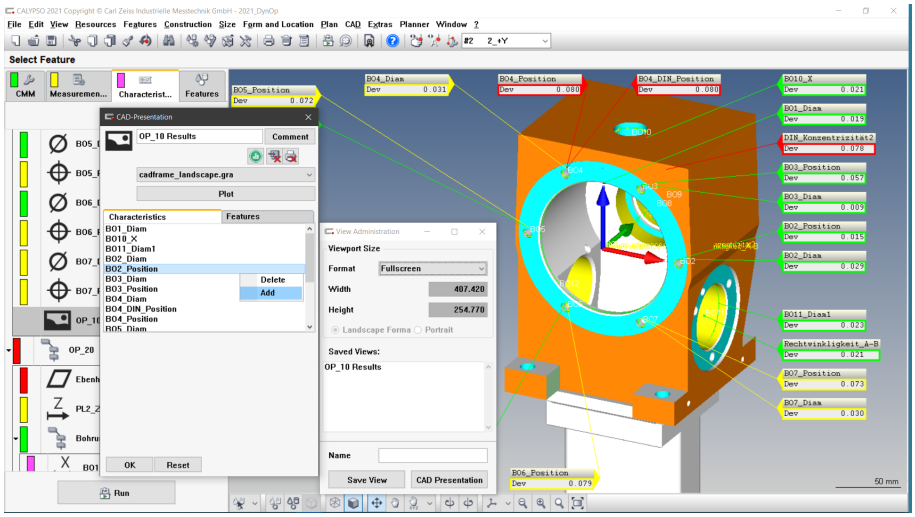
The size of the view can be set by selecting a standard paper format or user-defined by entering the length and width.

Editing CAD presentations

When a CAD presentation is selected, the corresponding view is displayed. The window of the CAD presentation contains a list of characteristics and features that are displayed in the view. Entries can be deleted from or added to the list. The view also can be changed via **CAD → Evaluation**.

The menu items **CAD → View → Save view…** and **CAD → View → Load View…** from previous CALYPSO versions have been removed. Now all settings can be accessed under **CAD → Manage views**.

When the name of the CAD view is selected in the PiWeb reporting report, the correct CAD view is selected in the TreeViewer by the hyperlink action in CALYPSO.

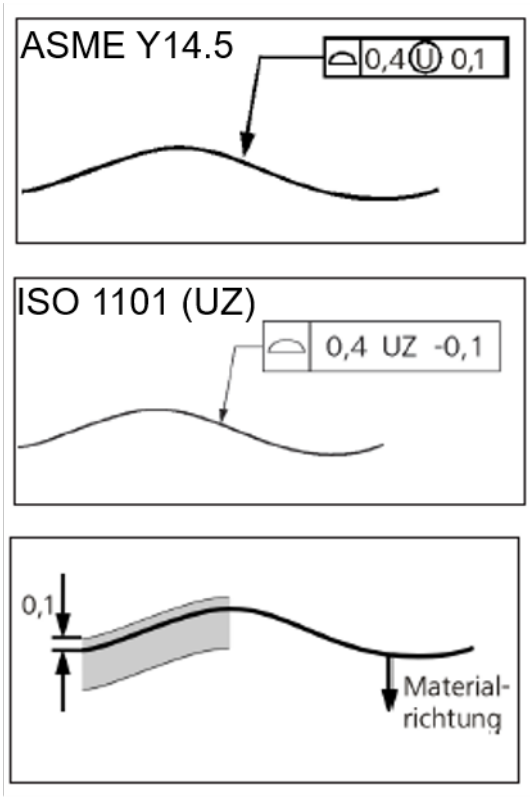


Unilaterally displaced tolerance zone of a profile

104162

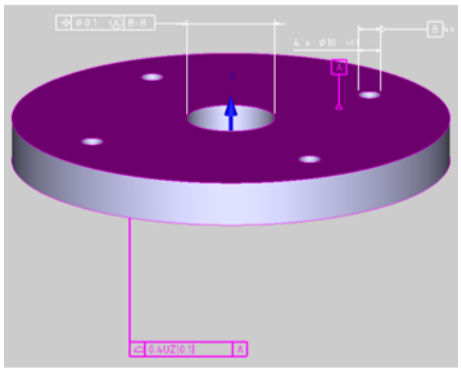
With a CAD model from CATIA, CALYPSO can detect the offset tolerance zone in profile tolerances and move it in the corresponding characteristic. If you create the Profile or Line Profile characteristic from a CAD

model with PMI, the dialog elements Shape of Zone, Tolerance, and Tolerance (one side) will automatically be filled with information from PMI in the definition template of the characteristic.



Benefit

The automatic generation of measurement plans from PMI is thus improved. The user saves more time when creating the measurement plan.

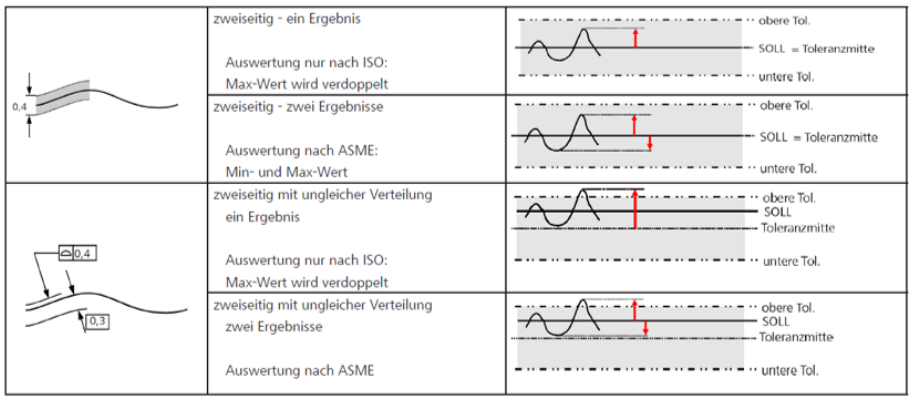


Details

CALYPSO detects the unilaterally offset tolerance when importing a profile tolerance from PMI.

- The tolerance zone is moved according to ISO / ASME when the profile tolerance is created.
- When the profile tolerance is created from PMI, **outside of the material** is always set automatically.

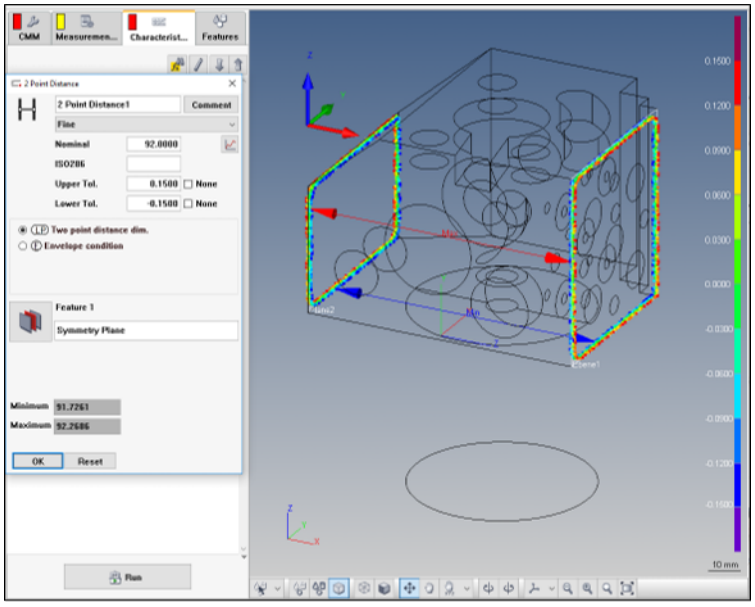
- Then the tolerance zone (one side) is calculated: (Currently available for CATIA).
  - The TEF (theoretical exact feature) tolerance center is moved according to ISO 1101 (UZ).
  - The tolerance value located directly outside of the material is specified according to ASME Y14.5.
- The **Bilateral with unequal distribution** setting is applicable for ISO and ASME:
  - For ISO: **Bilateral with unequal distribution - one result**.
  - For ASME: **Bilateral with unequal distribution - two results**.



Generating two-point distance for parallel planes from PMI

151431

PMI characteristics defined as the distance between planes are created as the two-point distance for parallel planes according to ISO 14405-1.



Benefit

There are two results in CALYPSO 2021:

- Maximum distance
- Minimum distance

Both values are displayed graphically in the CAD area.

Highlighting the selection in the CAD window in the list of features

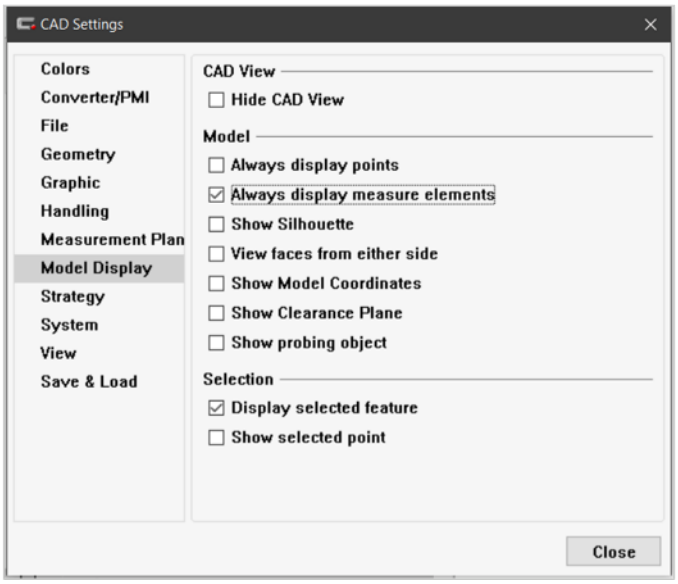
158711

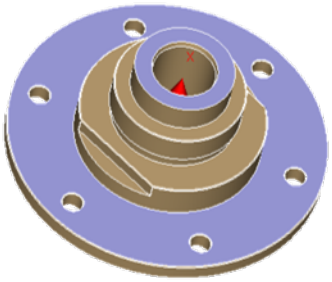
The selection in the CAD window (with the loaded CAD model) can be highlighted in the list of features.

If the **Always show features** menu item is activated, the features will always be shown.

This menu item can be activated as follows:

- **CAD → Settings → Model Display → Always show features**
- **CAD → CAD Model Control → Always show features**



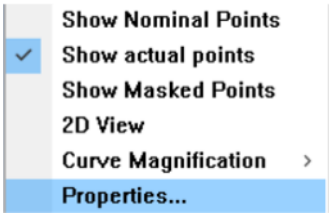


CALYPSO freeform - Better performance

150153

Improvements:

– Adjustable number of point output in CAD window, new dialog for measurement point display. With the feature open, **Right-click → Settings**.



– Enhanced and faster Gaussian/Chebyshev best fit for tactile and optical points.

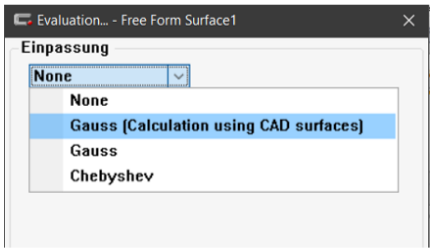
– The user interface for free-form measurement was optimized.

– The CAD presentation in the report output can be adjusted interactively.

– PiWeb reporting reports offer a PDF output of enhanced quality.

Old:

New:



Benefit

Clear improvement of performance.

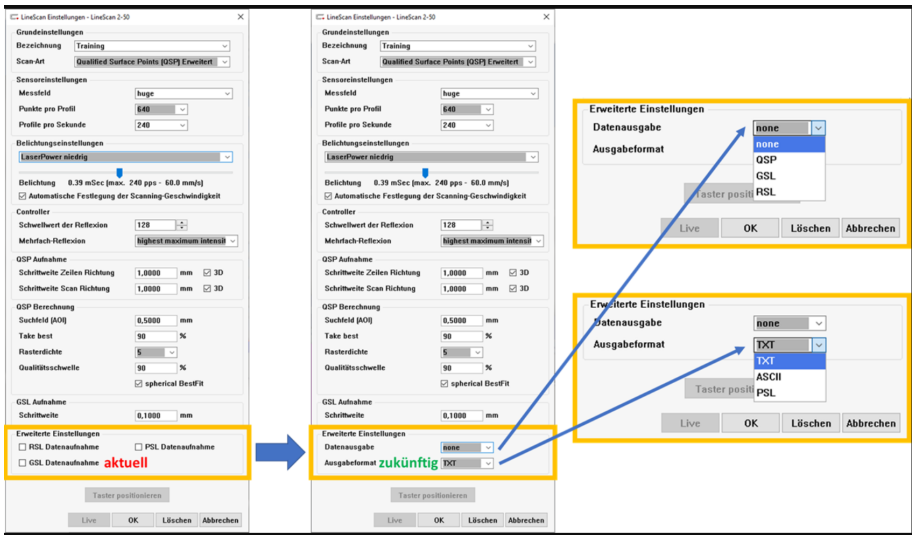
Adjustment and extension of the view for "Advanced settings"

169143

The **LineScan Settings → Advanced settings** dialog was adapted.

Benefit

Output formats are additionally possible:



CALYPSO optics - Much faster tactile-optical alignment

The tactile-optical alignment (toA) times on an O-INSPECT are much faster:

toA times in CALYPSO 2019 and earlier:

– approx. 15-20 min

toA times in CALYPSO 2021:

– approx. 8 minutes (all 10 magnification levels)

– approx. 3.5 minutes (three magnification levels)

– approx. 2 minutes (one magnification level)

Starting with CALYPSO 2020 you can individually select which styli/magnification levels are to be aligned.

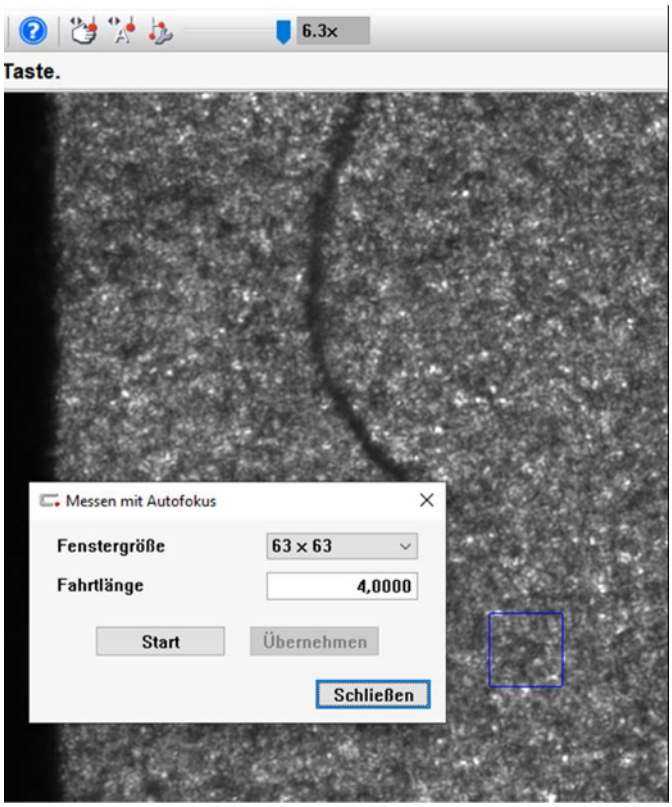
Advantage: Significant time savings, depending on the number of “optical styli”.

CALYPSO optics - Faster autofocus and larger range

The autofocus is now faster and the range of high magnifications has been increased. For example to max. 4 mm at 6.3x.

Benefits:

– Faster, more stable CNC run – reliable measurement even of “bad” parts.
– Due to higher flexibility of the autofocus travel length, user-independent pallet measurements are possible.



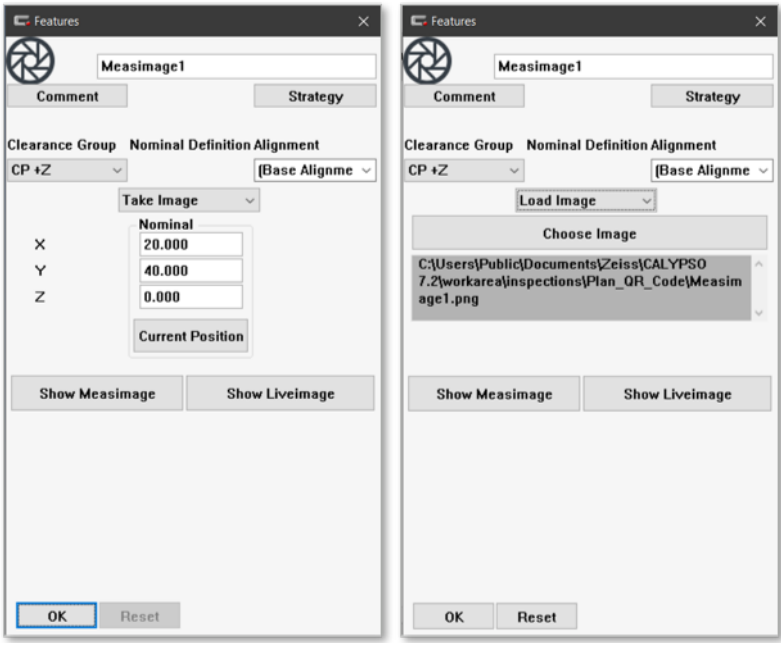
CALYPSO optics - “image acquisition”feature

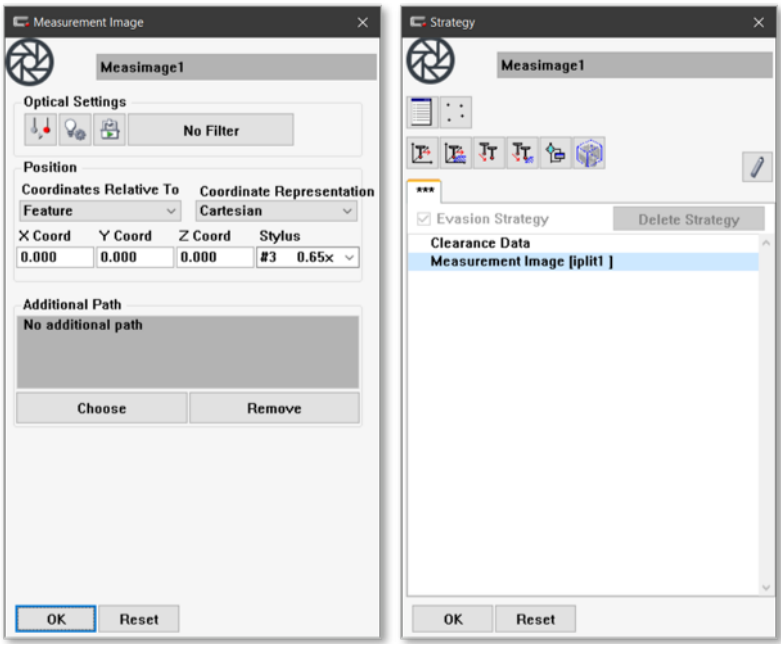
150529 162929

New **Image acquisition** feature for optical sensors with camera. Function call: **Features → Additional Features → Image Acquisition** or via the optical tool list.

Benefit

The **Image acquisition** can either load an existing image or capture an image at the defined position with the camera.





Details

The following settings can be changed in the strategy:

- Light settings / camera gain:
- Image processing filter

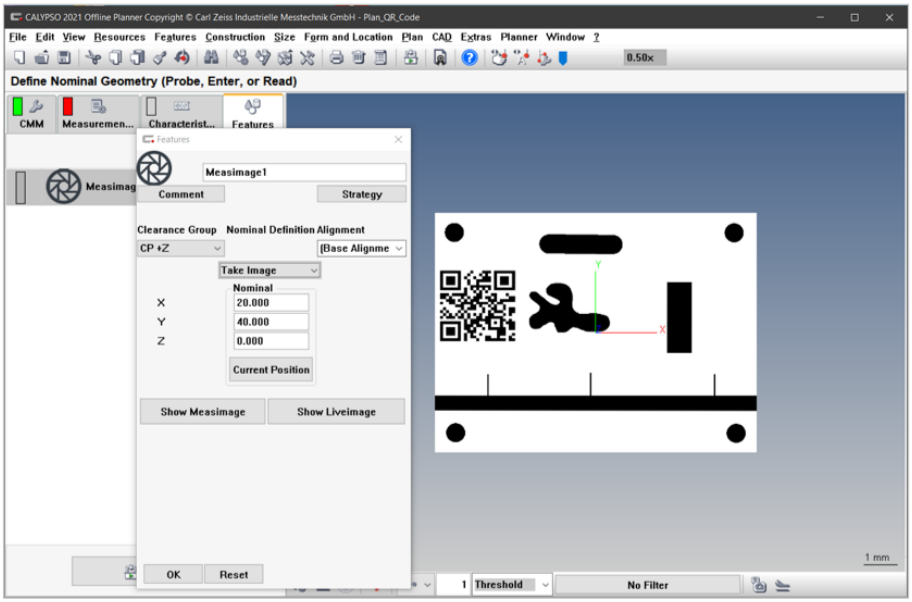
CALYPSO optics - Barcode and QR code

157698

CALYPSO can now read out barcodes and QR codes. The function can be called via **Features → Additional Features → Image Acquisition**.

The **Code scanning** feature also is available. The characteristic can be called via **Resources → Utilities → Code scanning**.

The characteristic writes the barcode or QR code to a report header variable.



Benefit

Barcodes and QR codes are detected on the workpiece. The value can be transferred to a reader head field if required.

Details

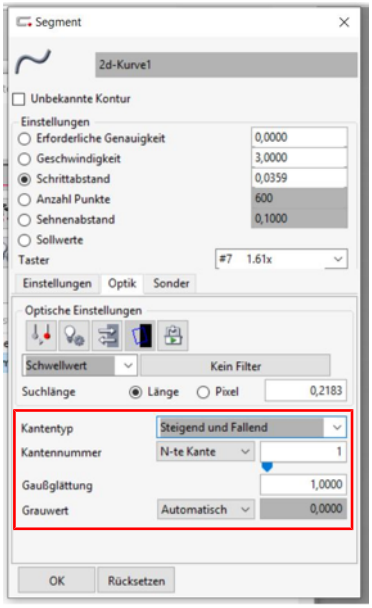
CALYPSO optics - Defining the report header field in PiWeb

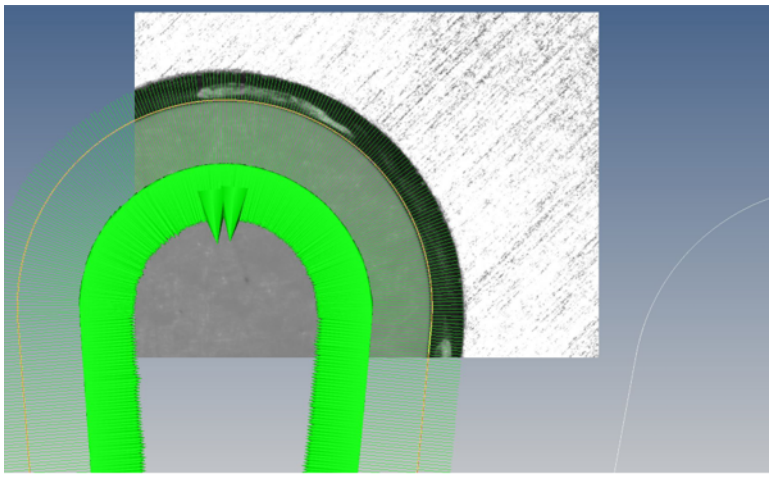
The procedure for creating report header fields is described in the operating instructions of CALYPSO and PiWeb reporting.

CALYPSO optics - Edge detection in a curve

169615

The edge type and edge number are now also adjustable in the feature curve.

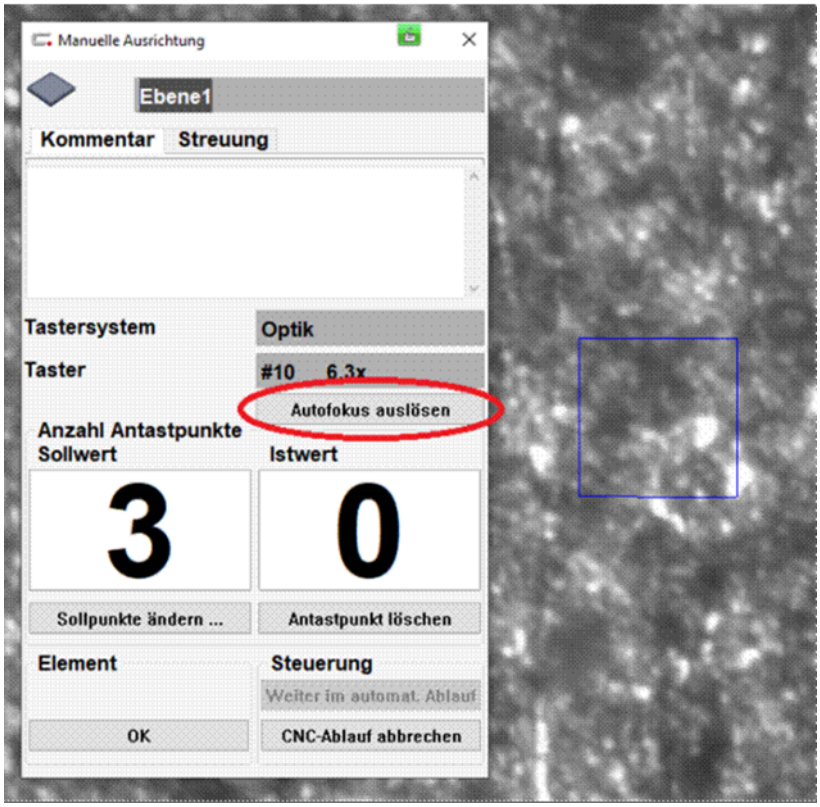




CALYPSO optics - Setting an autofocus point during manual measurement also possible without control console

172247

When measuring manually (during the base alignment), the autofocus point also can be triggered in the **Manual Alignment** dialog box.



Benefit

Previously, an autofocus point could be set only via the control console. Now this function also can be called without a control console.

CALYPSO optics - Notice for crosshair measurement also on CMM

172241

The dialog box shown in the simulation during crosshair measurements is now also displayed on the CMM during the measurement run.

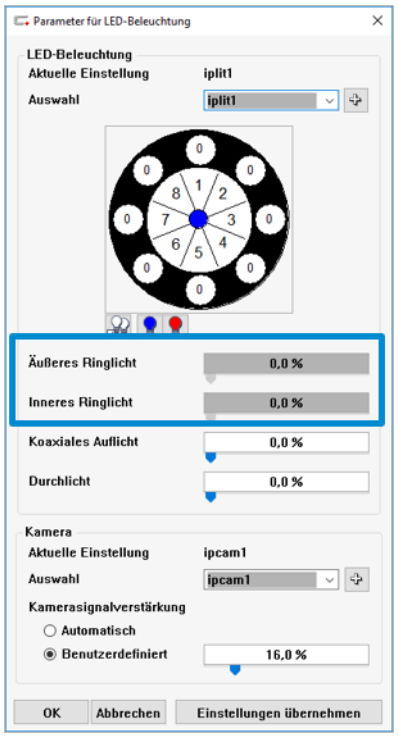
CALYPSO optics - High-resolution adjustment for new O-INSPECT hardware

NOTE

Observe the hardware requirement!

CALYPSO adjustment for high-resolution variants of O-INSPECT.

- ID chip automatically detects new camera optical sensors.
- The names of the magnifications and the default values in X, Y, and Z are adjusted according to the given lens when creating the camera.
- Adjustment of the illumination window for the CSP 240 variant.
- The illumination settings and stylus assignment of default measurement plans may have to be adjusted manually by the user.



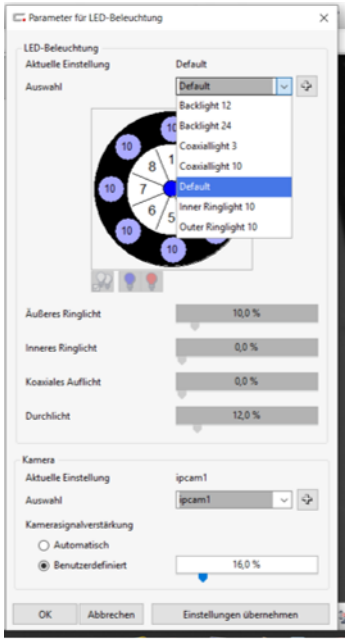
CALYPSO optics - High-resolution adjustment for new hardware

161917

The settings in the **Parameter for LED lighting** menu have been adjusted.

The following settings can be selected:

- Backlight (12% and 24%), for different zoom levels.
- Coaxial light (3% and 10%), mainly suitable for higher zoom steps (> 0.93x).
- Start setting, suitable for navigation and orientation.
- Inner and outer ring light (10% each).



Digital signature of measurement plans

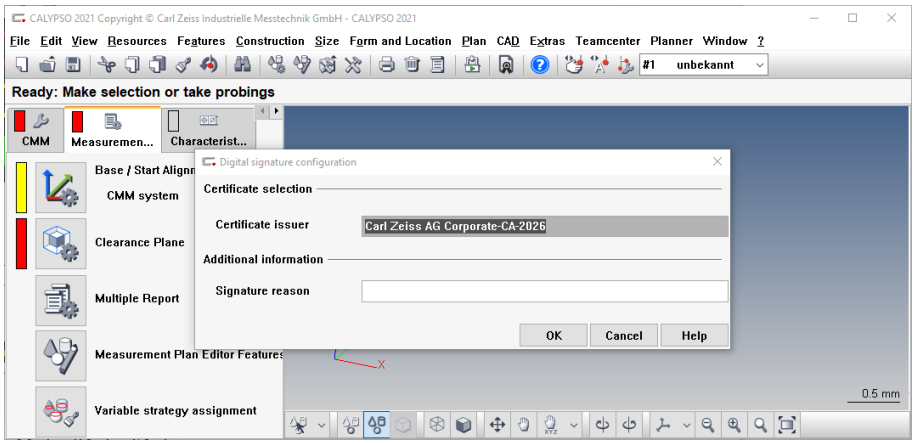
115468

CALYPSO enables digital signing of measurement plans. Unauthorized changes in the measurement plan can be prevented by verification of signed measurement plans.

Benefit

It is possible to sign a measurement plan in order to prevent unauthorized changes to it in the future. The user can automatically create signed reports from a signed measurement plan.

Details



Output of the Fourier analysis table in the report

153719

Output of the Fourier analysis as a table in the report.

- **Top three harmonics**

  Only up to three of the largest harmonics are transferred to PiWeb.

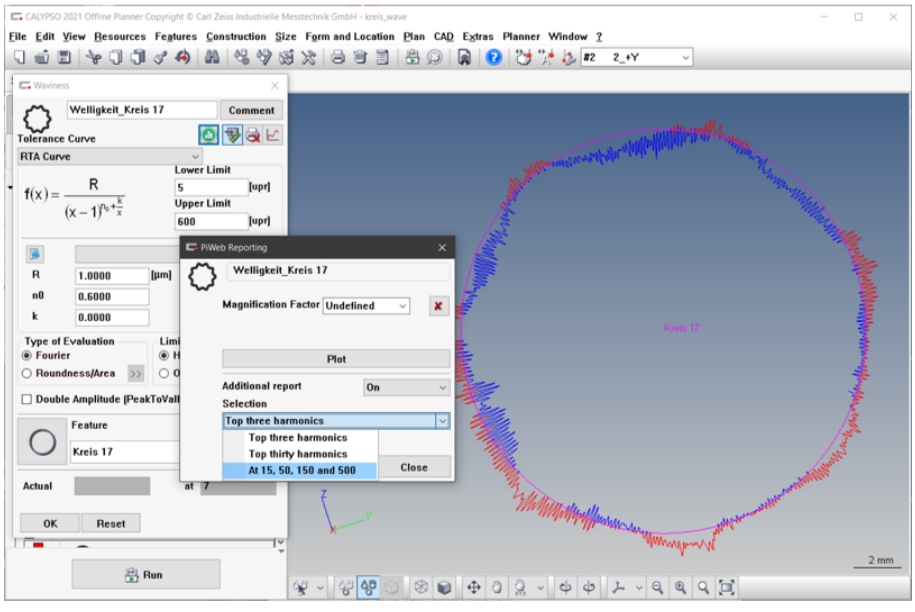
- **Top thirty harmonics**

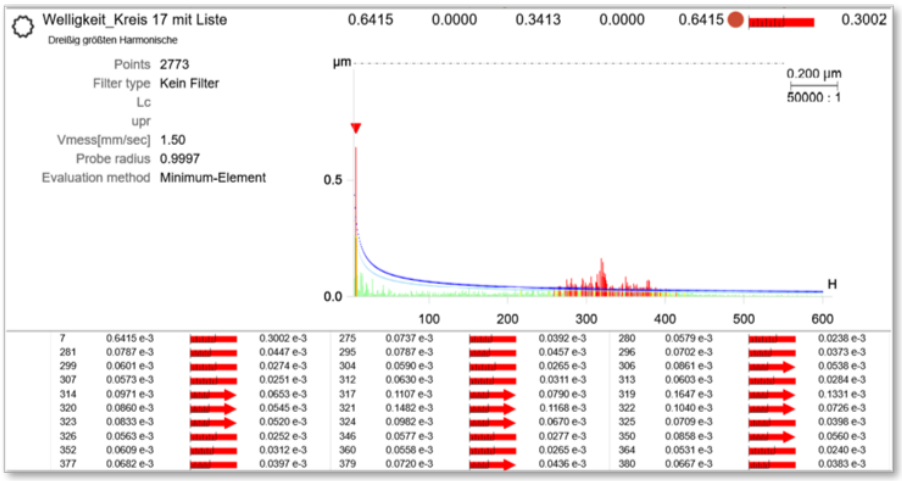
  Only up to thirty of the largest harmonics are transferred to PiWeb.

- **For 15, 50, 150, and 500**

  If available, the harmonics 15, 50, 150, and 500 are transferred to PiWeb.

The table is output according to the plot.



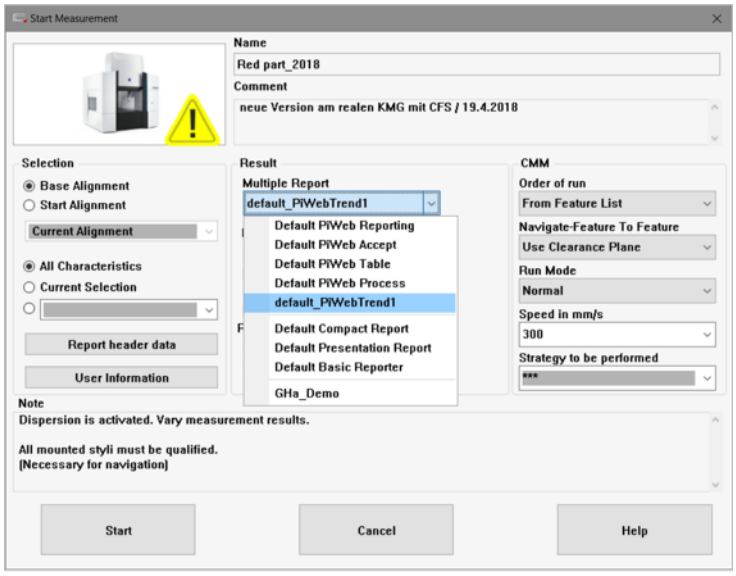


New multiple report “Default PiWeb trend”

156505

Now the new trend report “Default PiWeb trend” also can be selected in CALYPSO. This trend report is useful for visualizing multiple measurements.

This report also is available in the selection list on the CNC start page.



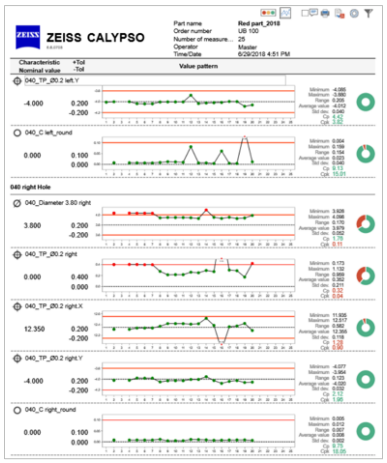
NOTE

A PiWeb reporting plus license is required for the complete functional range of “Default PiWeb trend”.

Benefit

The trend report allows a fast overview of the measurement values. In addition, the most important statistical parameters are calculated. It also is possible to call up the dashboard.

Details



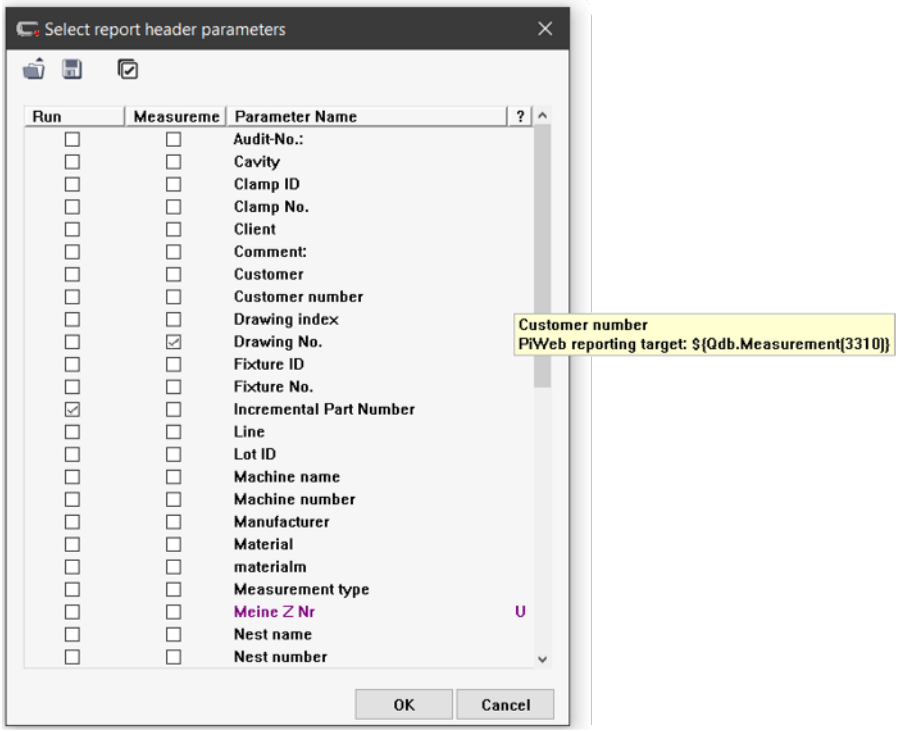
Standard list of report header parameters extended

151914

The standard list of report header parameters has been extended. The fields are available in CALYPSO in the selection list of the report header parameters.

The following new report header parameters are available:

- K80 Sample Size
- K1210 Measurement type
- K1302 Lot ID
- K3310 Customer number
- K15/4391 Reason for inspection

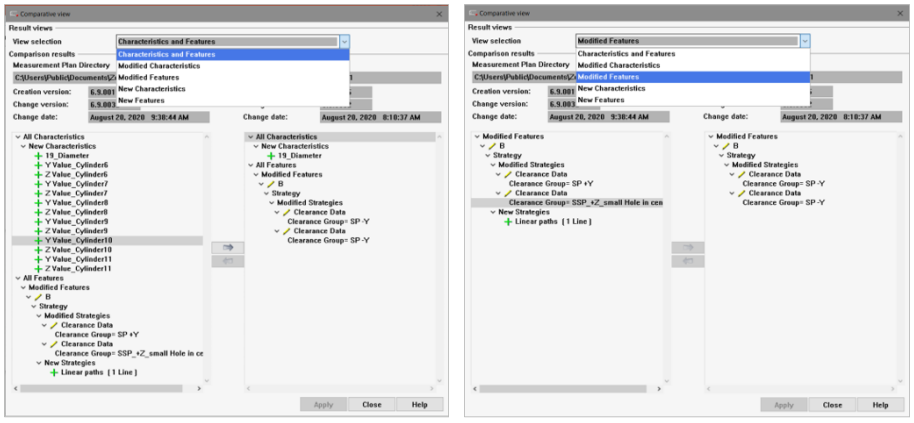


Standardization of the report header fields is a prerequisite for easy data exchange between different applications. This extension of the standard report header fields simplifies standardization.

Measurement plan comparison - Reduced views

153576

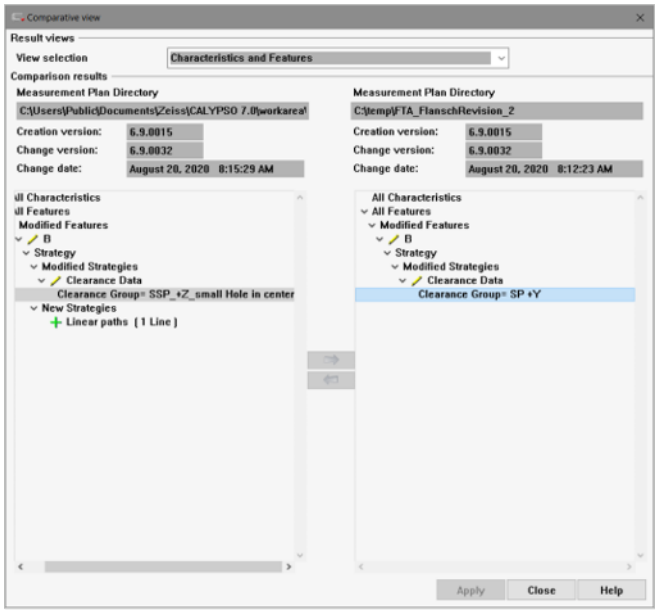
The new reduced view for filtering revision differences can be used in the measurement plan comparison.



Measurement plan comparison - clearance group

153571

Now different clearance groups can be found in the measurement plan comparison.

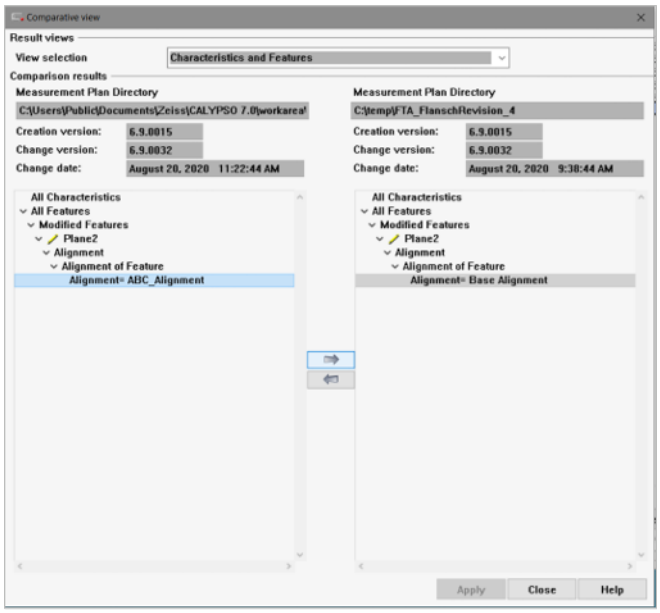


Measurement plan comparison - comparing alignments in the feature

153575

Different alignments can now be found in the feature in the measurement plan comparison.

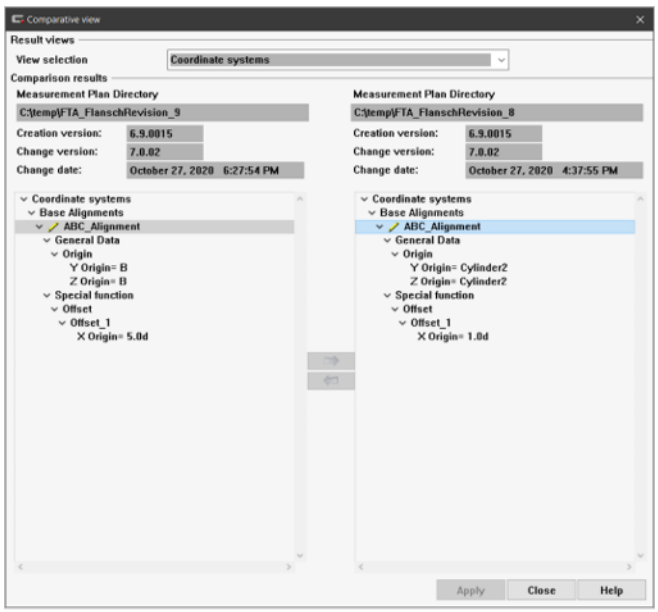
The change can be transferred to the second measurement plan with the **Arrow**.



Measurement plan comparison - comparing alignments

153574

The difference between the alignments is compared.



Benefit

Differences in the alignment settings are detected.

Details

The following properties are compared:

Alignment

- Spatial rotation (including rotation axis)
- Planar rotation (including rotation axis)
- Origin (X, Y, Z)

Special functions

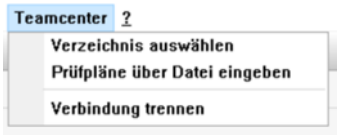
- Offset (X, Y, Z)
- Rotation by an angle (rotation axis and angle)
- Rotation according to distances (rotation axis, modified axis according to rotation axis and angle)

SIEMENS Teamcenter connection also in AutoRun

138055

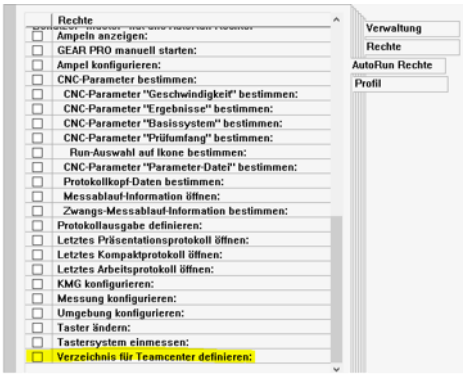
Die CALYPSO teamcenter in/out option was extended for AutoRun.

Benefit



The following is possible in AutoRun:

- Search for, download, open, and run measurement plans in Teamcenter.
- CALYPSO can run AutoRun and files in ARN format (*.arn) with measurement plans from Teamcenter. The required measurement plans are automatically searched for in and downloaded from Teamcenter.
- New user right for AutoRun: **Define directory for Teamcenter:**



Details

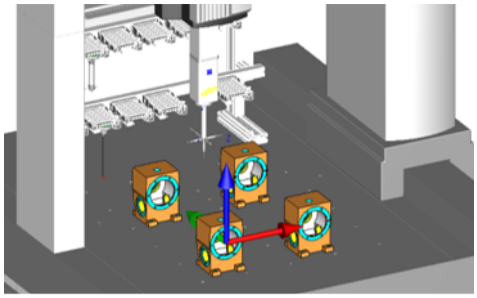
Requirement:

- Connection between CALYPSO and Teamcenter.
- A directory for measurement plans from Teamcenter is defined in AutoRun.
- The authorization **New Measurement Plan** exists.

CALYPSO pallet optimizer option - Now also with FACS

150121

The CALYPSO pallet optimizer previously functioned only with AutoRun. Now this function has been extended to include FACS as well

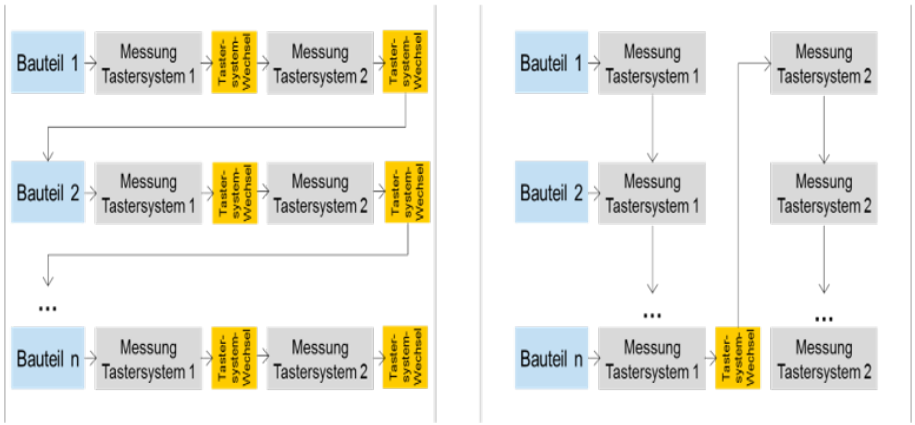


Benefit

Time savings:

- 15 – 30% for purely contact measurement runs with three stylus systems.
- Approx. 35% for contact/optical change procedures.

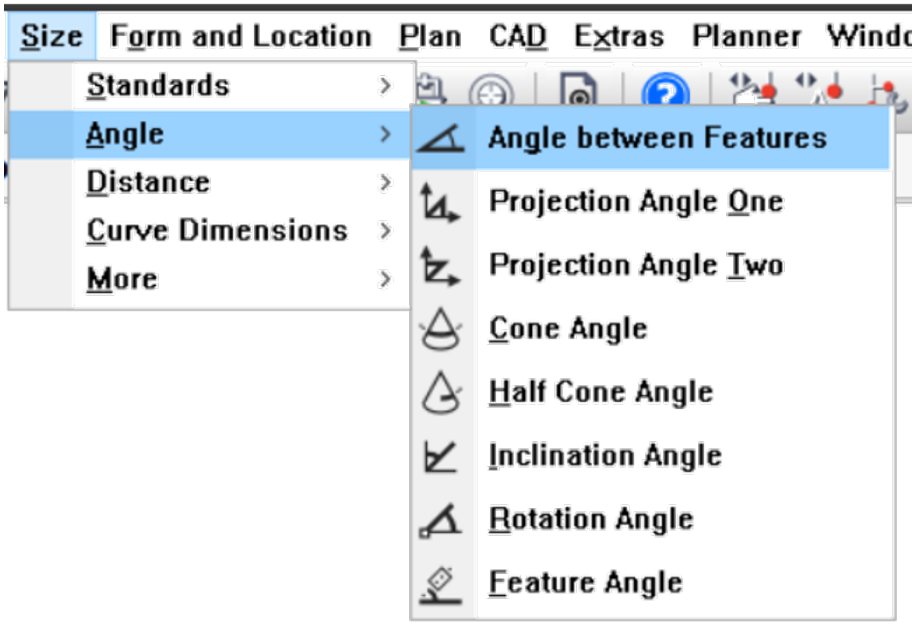
Details



User interface adjusted - Angle between Features

167122

Now the **Angle between Features** function also can be called under **Size → Angle → Angle between Features**.



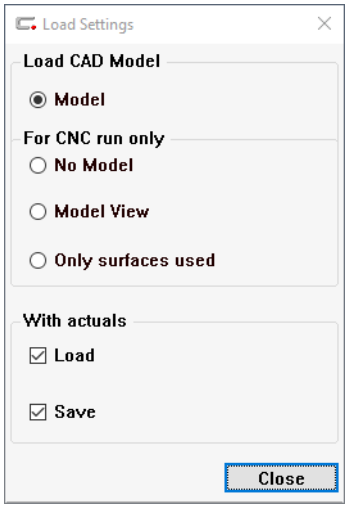
Faster loading of measurement plans

126871

A certain amount of time is required to load larger CAD models. If the CAD model is saved together with the measurement plan; however, the measurement plan does not require the complete CAD model with all functions, the loading time can be reduced considerably. The loading and saving of measurement plans can be accelerated by optionally omitting the actual values.

This may make sense e.g. when only working at the CMM or editing the nominal values. To do this, the load settings must be changed. Depending on the setting, only one view of the CAD model or only the set of geometrical features is loaded:

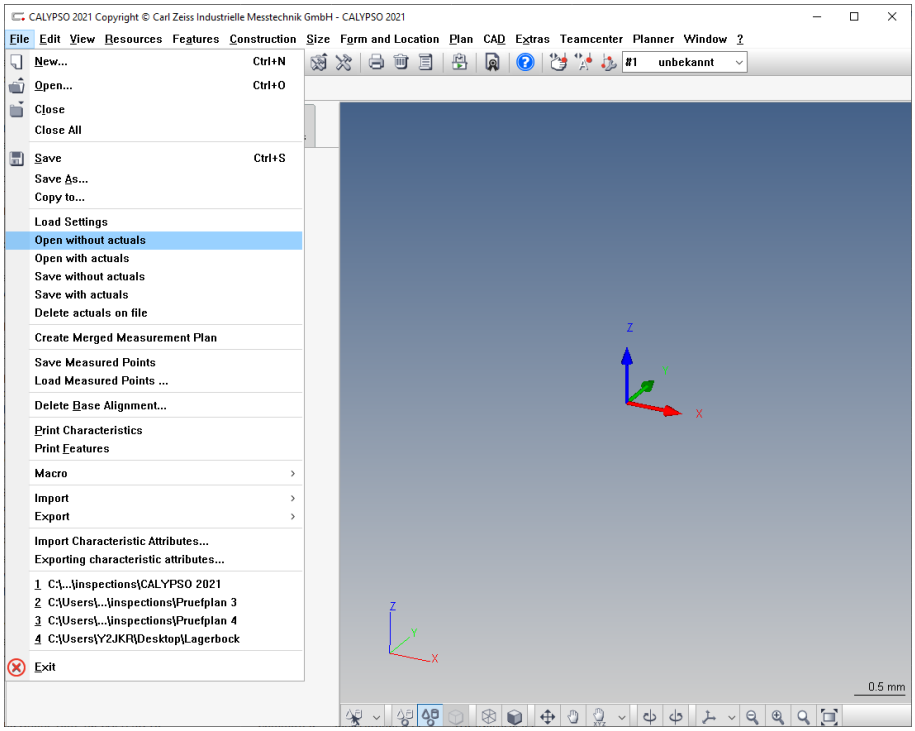
Benefit



CALYPSO can import large, high-performance CAD models which contain actual values.

Furthermore, the measurement plan can be loaded or saved either with or without actual values. This saves time if the actual values are not required.

Details



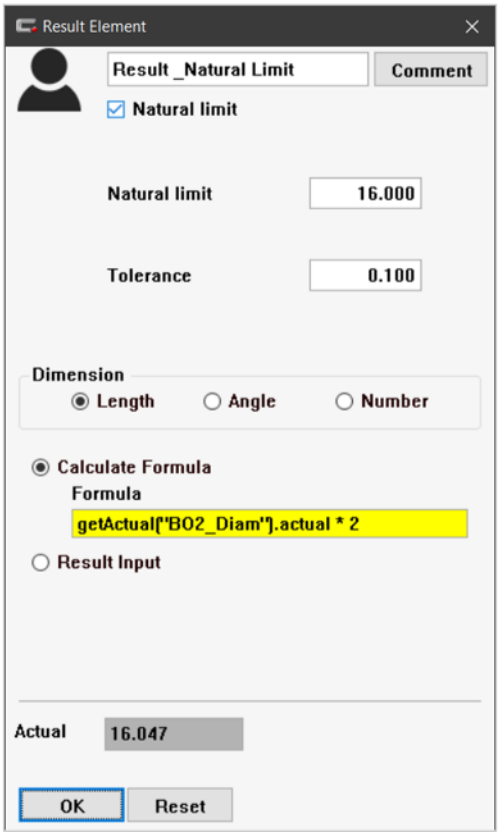
Result element

152079

Previously, it was not possible to define the type of tolerance limit for the result element (tolerance limit or natural tolerance limit).

Benefit

From now on, it is possible to specify the tolerance limit as a natural tolerance limit in the result element.



Details

The corresponding deviation bars are displayed correctly.

Name	Measured value	Nominal value	+Tol	-Tol	Deviation +/-
OP_10					
BO2_Diam	8.024	8.000	0.040	-0.040	0.024
Result	16.047	16.000	0.100	0.000	0.047
Result _Natural Limit	16.047	16.000	0.100	0.000	0.047

Data export as IPP file

147737

Results can be exported as an IPP file.

Benefit

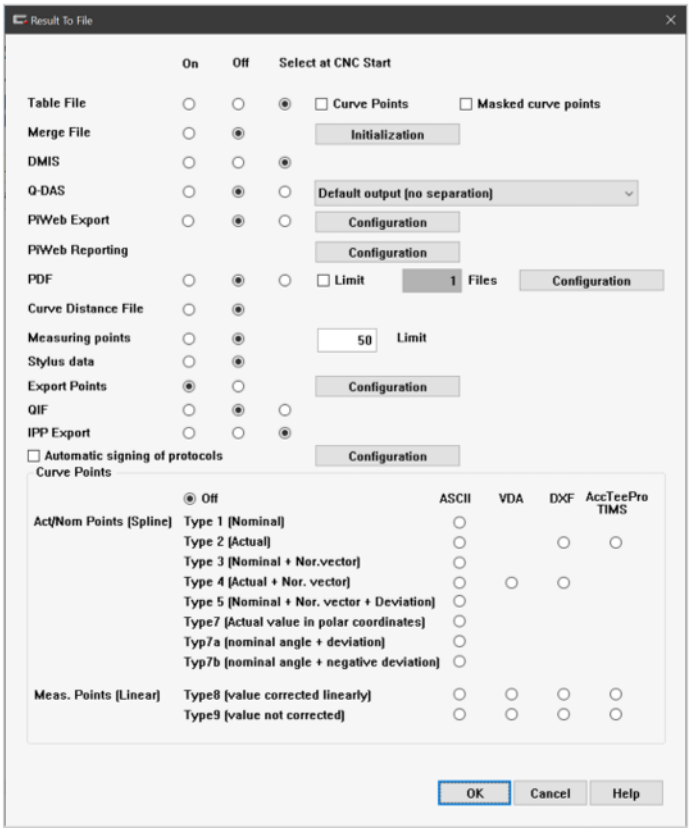
Requirement:

– The **IPP export** output is activated.

  The **Table file** output is activated.

  The *protocol* file is present in the project directory and is not empty.

  A storage location and a file name are defined (optional).



Details

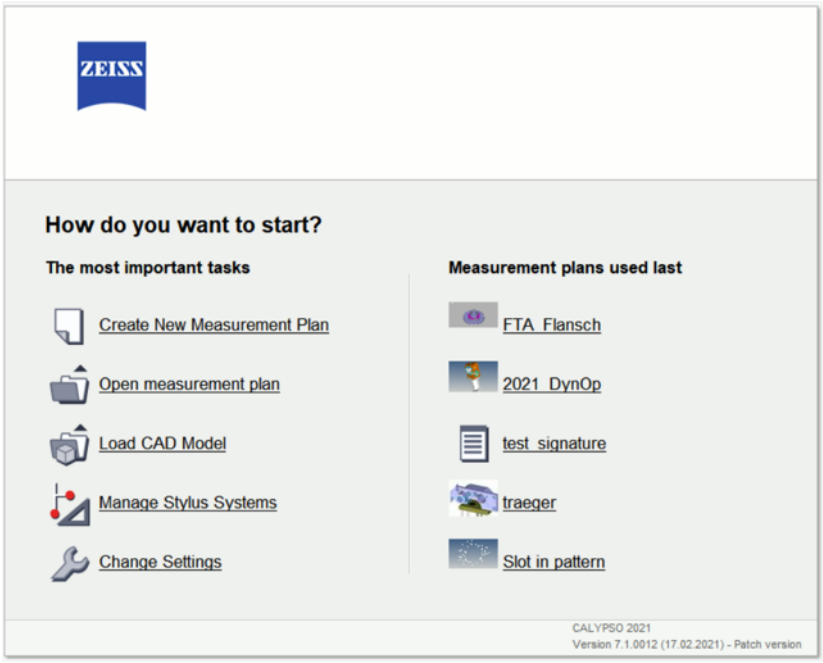
Customer-specific input formats are required for CALYPSO.

Performance improvements

154260 157626

The following optimizations lead to an improvement of the general performance:

- Improvements in saving, closing, and opening a measurement plan.
- Faster set-up of the CALYPSO start page.



Torus evaluation settings - Constraint of degrees of freedom possible

161682

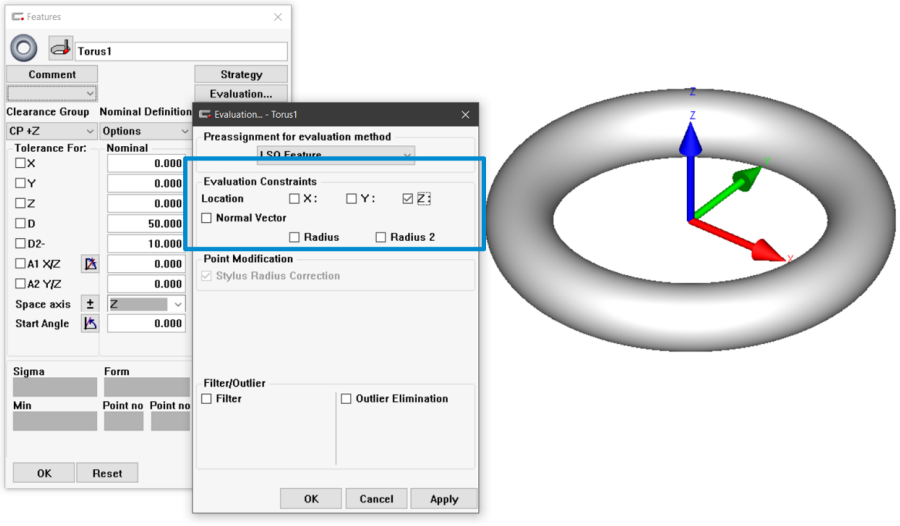
The following constraints of the degrees of freedom are possible for the evaluation settings of the Torus feature:

- X, Y, Z position
- Normal vector
- Large radius
- Small radius

Benefit

The calculation of the degree of freedom can be constrained if necessary.

Details



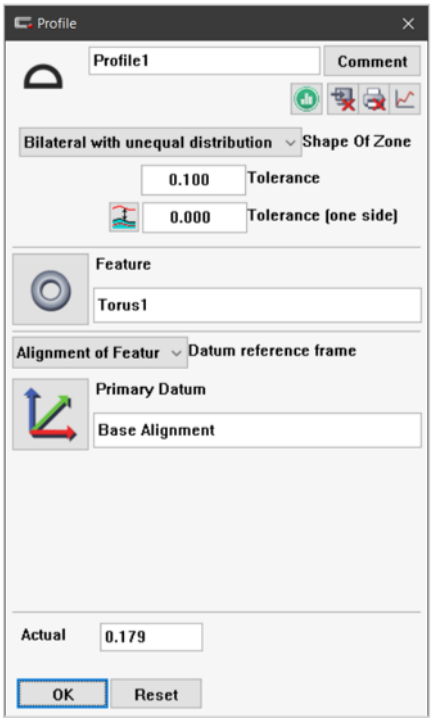
Surface profile characteristic now also possible for Torus

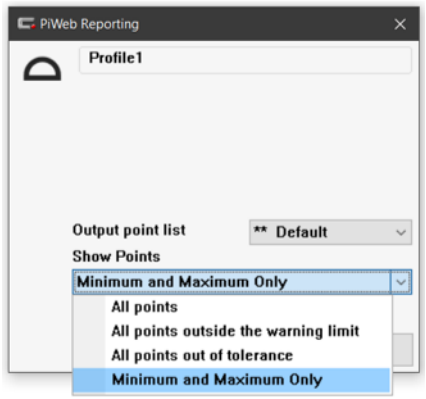
161683

In the future, the user also will be able to select a Torus when selecting a characteristic in the surface profile.

A calculation of the surface profile without a datum reference frame is not possible for the Torus element. A datum reference frame formed from individual references or an alignment must be specified.

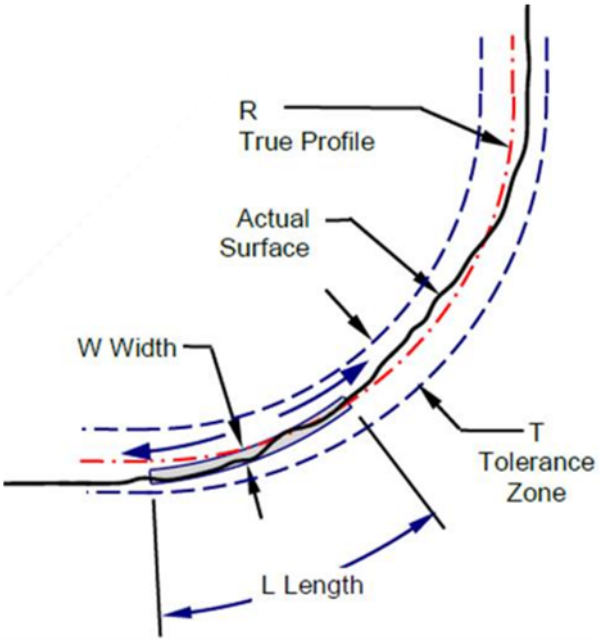
The surface profile of a Torus is calculated by disabling all degrees of freedom of the Torus (including both radii). The form referenced to the datum reference frame is the result of the surface profile.





Line profile with reference length according to ASME Y14.5 and RRES 90004

152672

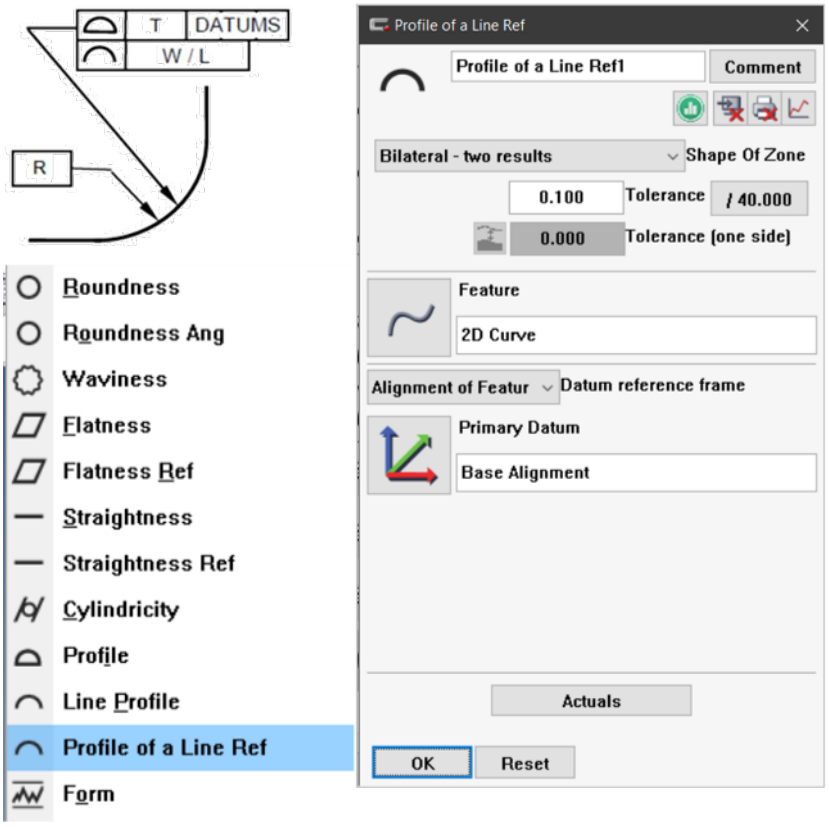


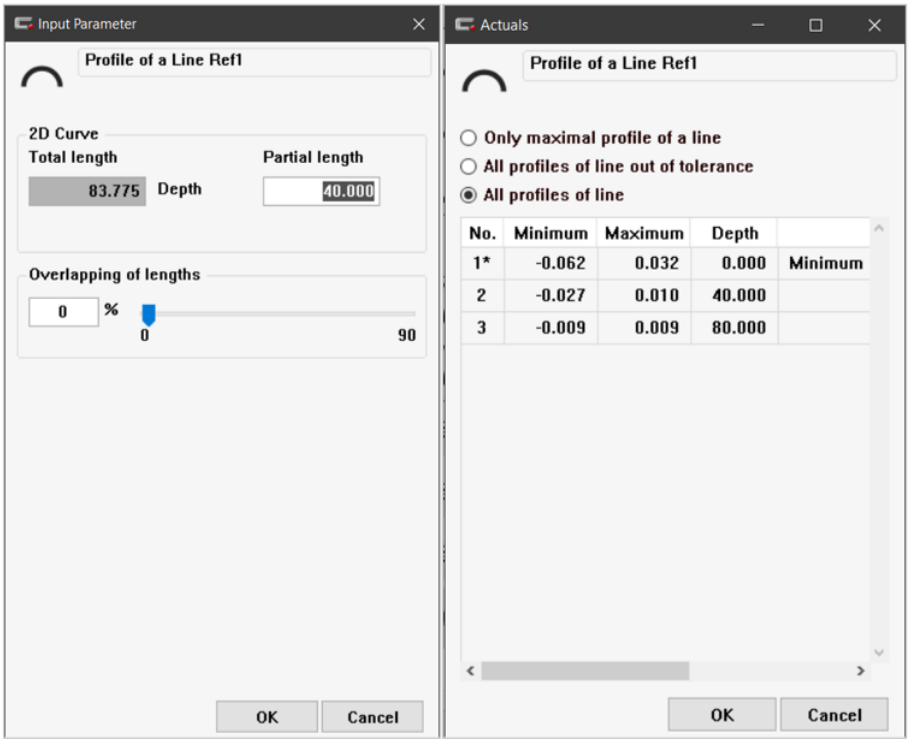
The line profile with reference length function works similarly to the current curve jump evaluation, except that it uses the segment length (L) instead of nominal point numbers.

Details

In addition to value L, a value for the tolerance range (W) and an overlapping factor (O) for the segments (similar to straightness with reference length) are defined.

The values for L, W, and O can be adjusted via PCM command or by means of a formula.


T
DATUMS
W / L
R
Roundness
Roundness Ang
Waviness
Flatness
Flatness Ref
Straightness
Straightness Ref
Cylindricity
Profile
Line Profile
Profile of a Line Ref
Form
Profile of a Line Ref
Profile of a Line Ref1
Comment
Bilateral - two results
Shape Of Zone
0.100
Tolerance
/ 40.000
0.000
Tolerance (one side)
Feature
2D Curve
Alignment of Featur
Datum reference frame
Primary Datum
Base Alignment
Actuals
OK
Reset

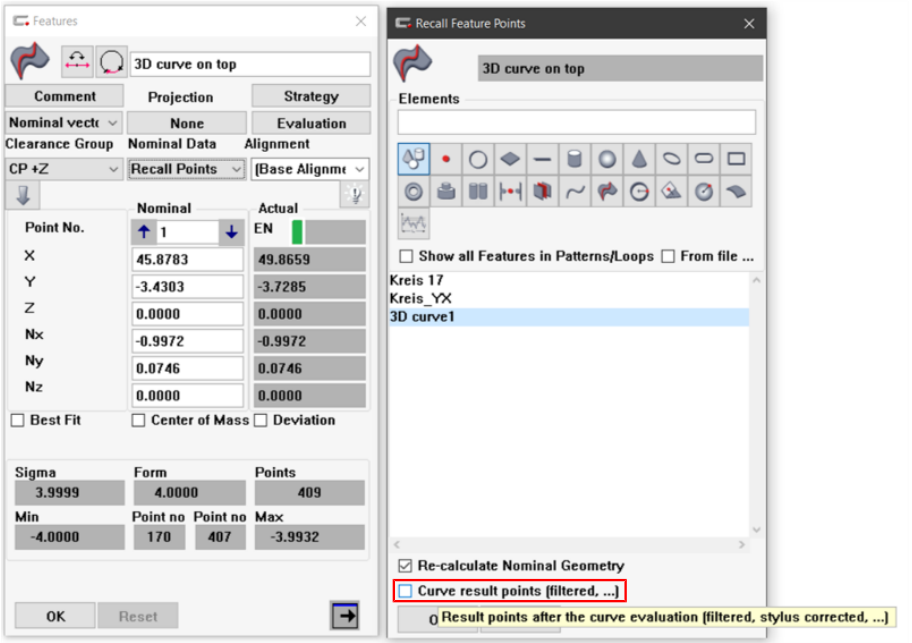

Input Parameter
Profile of a Line Ref1
2D Curve
Total length
Partial length
83.775
Depth
40.000
Overlapping of lengths
0
%
0
90
OK
Cancel
Actuals
Profile of a Line Ref1
Only maximal profile of a line
All profiles of line out of tolerance
All profiles of line
No.
Minimum
Maximum
Depth
1*
-0.062
0.032
0.000
Minimum
2
-0.027
0.010
40.000
3
-0.009
0.009
80.000
OK
Cancel

CALYPSO curve option - Point recall with already edited result points

155976

CALYPSO can now recall points from a curve either from their original points, or from points which have already been filtered to eliminate outliers and undergone a best fit.

Details



Check box not ticked: The original measurement points of the curve result points will be used.

Check box ticked: The result points will be used. The result points result from all spline calculations (filters, best fits, deviation methods, restricted evaluation, stylus correction…) and are always made available in the base alignment (similarly to the original measurement points).

CALYPSO curve option - New PCM commands for point deviation

152504

The CALYPSO function **Recall Feature Points → Add Range Limits..** is not sufficient for certain workpieces. New PCM commands are now available for defined point queries.

Benefit

Direct point access results in much faster calculation times.

Details

PCM commands for point deviation:

– getActualCurvePointCoord("curve name", "X" [,loop index],point number)

  Access to the coordinates (X, Y, Z and Angle, Radius, Height) of each individual curve point.

- getNominalCurvePointCoord("curve name", "X" ,point number)

  Access to the coordinates (X, Y, Z, Nx, Ny, Nz and Angle, Radius, Height) of each individual curve point.
- getActualCurvePointDevX("curve name" [, index] ,point number)

  Access to the X deviation of each individual curve point.
- getActualCurvePointDevY("curve name" [, index] ,point number)

  Access to the Y deviation of each individual curve point.
- getActualCurvePointDevZ("curve name" [, index] ,point number)

  Access to the Z deviation of each individual curve point.

Overview of PCM commands for styli

167074

getProbe

Returns stylus properties. The syntax is:

```
getProbe("StylusName","PlateName").characteristic
```

Stylus name and plate name must be strings enclosed in straight quotes ("). The current stylus name can be omitted.

The possible values of “characteristic” are:

Command	Function
anglePosA1	AngleA1
anglePosA2	AngleA2
calibMode	Calibration mode
calibration	Calibrated yes / no
confName	Name of configuration
diameter	Diameter
probeDate	Date of last calibration
probeForce	Qualification force of calibration
probeName	Stylus name
probeTemp	Temperature of calibration
probeVector	X, Y, Z coordinates
radius	Radius
shaftDirection	Shaft direction
shaftLen	Shaft length
shaftRadius	Shaft Radius

Command	Function
`stdProbeDev`	Deviation

Examples:

Command/assignment	Return value/effect
getProbe().radius	The current probe radius is returned.
getProbe("probe_+Y").radius	The stylus radius of “probe_+Y” is returned.
getProbe("probe_+Y", "plate_A").radius	The radius of “probe_+Y” is returned from “plate_A”.
StylusDiameter=getProbe("probe_+Y", "plate_A").radius	The “StylusDiameter” variable receives the radius of “probe_+Y” from “plate_A”.
getProbe().stdProbeDev	Stylus deviation
getProbe().probeVector	Stylus coordinates in X, Y, Z as vector
Stylus_coordinate = getProbe().probeVector	“Stylus coordinate” vector with the components “Stylus_coordinate.x”, “probe_coordinate.y”, and “probe_coordinate.z”
getProbe("tastername").stdProbeDev	Deviation of “stylus name”
getProbe().probeDate	Current date of last calibration
getProbe().probeName	Current stylus name
MyName = getProbe().probeName	Stylus name is written to “MyName” variable

addCF(Name) and setCf(Name) also for characteristics with a loop index

Now PCM commands addCF(Name) and setCf(Name) also can set characteristics with a loop index:

`addCF(characteristic name[,PMName2,...])`

`setCF(characteristic name[,PMName2,...])` oder `(list name)`

NOTE

New function in connection with the CALYPSO dynamic planning option.

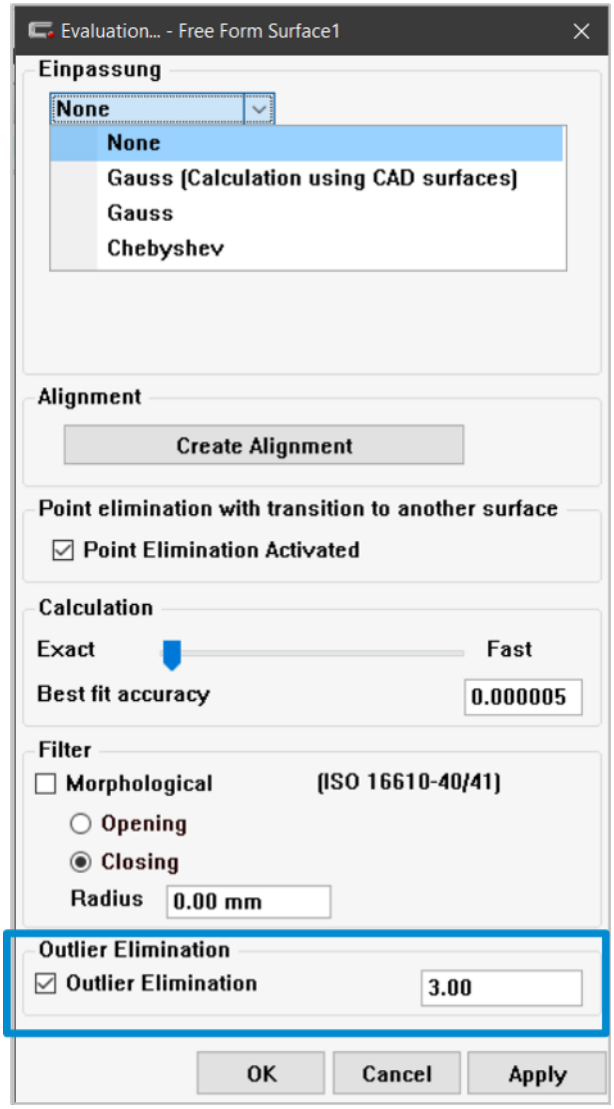
Example code for PCM command list()

```
//==== value in a list ============================

list=list("Circle1(1)","Circle1(2)","Circle1(3)","Cir-
cle1(4)","Circle1(5)","Circle1(6)","Circle1(7)")


//====Read value from a list ============================

Test = list

Test.size

Test.first

Test.last

Test.removeLast

t1 = Test.removeFirst


aList = list

aListNr = aList.size

for I = 1 to aListNr

 t[I] = aList.removeFirst

 display(I, "==> ", t[I])

 aListNr = aListNr - 1

next I
```

CALYPSO freeform - Adjustable outlier exclusion

150151

The outlier exclusion is based on a Gaussian best fit against the faceted CAD model. Which and how many points are eliminated also depends on the display quality.



Benefit Clear improvement of performance.

Details

NOTE

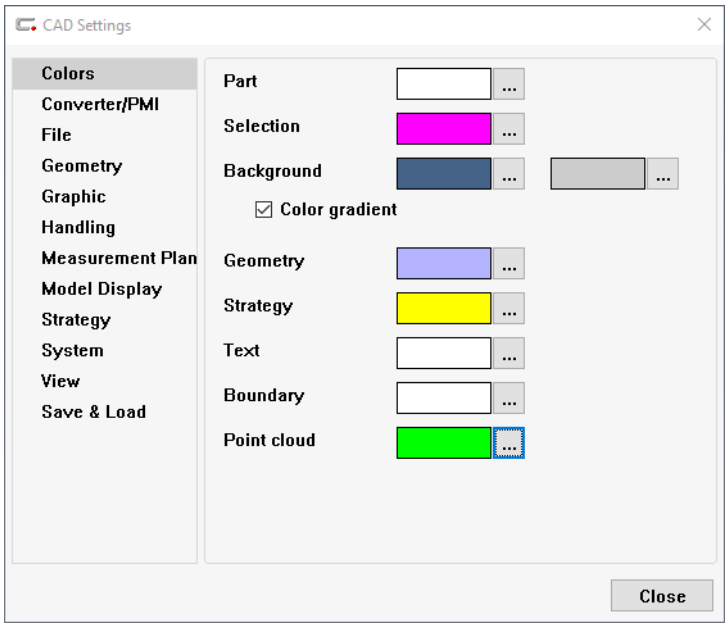
General surface special geometry was removed. Surface evaluations are covered by CALYPSO freeform.

Color setting of point set

104158 Users can define the color of the individual points of a point set or point cloud.

Benefit The visibility of the point sets is enhanced if their color contrasts with the CAD model. This simplifies work for the user and makes the workflow more convenient and faster.

Details

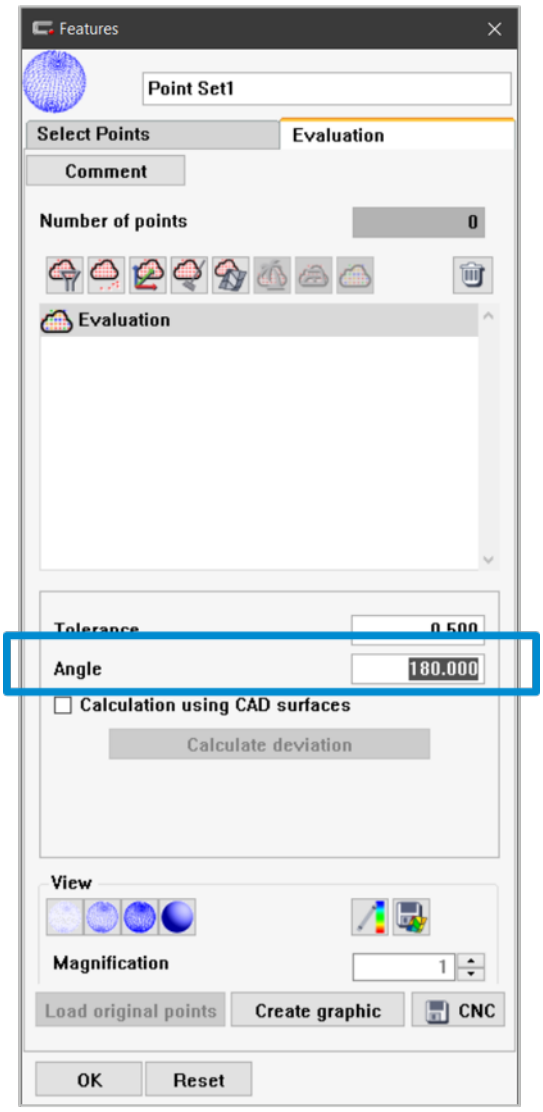


Point set - Evaluation optimized

150154

With thin-walled workpieces and large deviations, there is a risk that evaluations will appear on the wrong side (rear side). The new logic prevents deviation calculations on the rear side.

- Angle = 180 degrees: No constraint.
- Angle = 90 degrees: Projection onto the opposite side of the workpiece is prevented.



Benefit

With an angle that is adapted to the workpiece, evaluation on adjoining surfaces (on edges) is prevented.

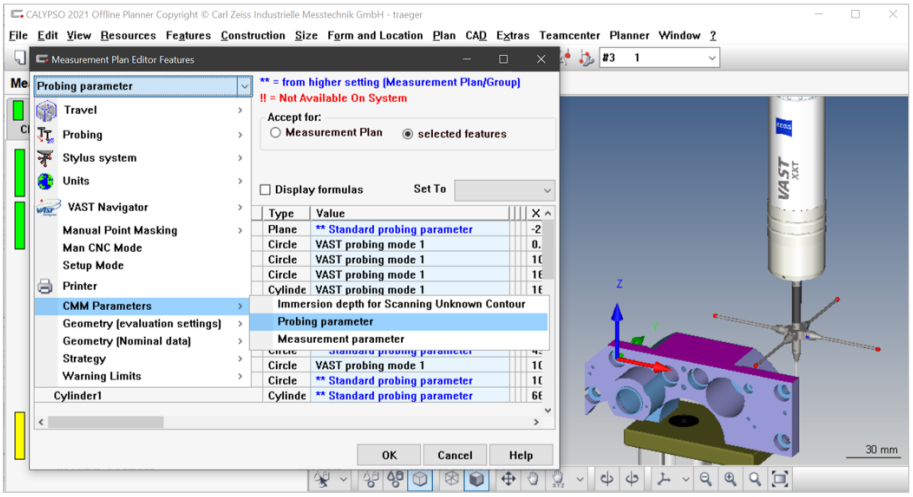
Fast single point probing now also with VAST XXT

142029 147965

Fast single point probing on PRISMO (USS2), PRISMO ultra (USS2), PRISMO verity, PRISMO fortis, and CenterMax (USS2) was previously available only with the VAST probe.

Now fast single point probing is also possible with the VAST XXT.

Call: **Resources → Measurement Plan editor Features... → CMM Parameters → Probing parameter**.



Benefit

ZEISS VAST probing can shorten the acquisition time per measurement point for selected features.

Depending on the tolerance and the measuring task, a time savings of up to 30% (results on the test piece) is possible.

Details

- Reducing the time required for applying the measurement point impacts accuracy.
- Select ZEISS VAST probing depending on the tolerance defined for the measuring task.
- Factors impacting accuracy:
  - Retract distance
  - X, Y, Z probing direction
  - Rigidity of the stylus

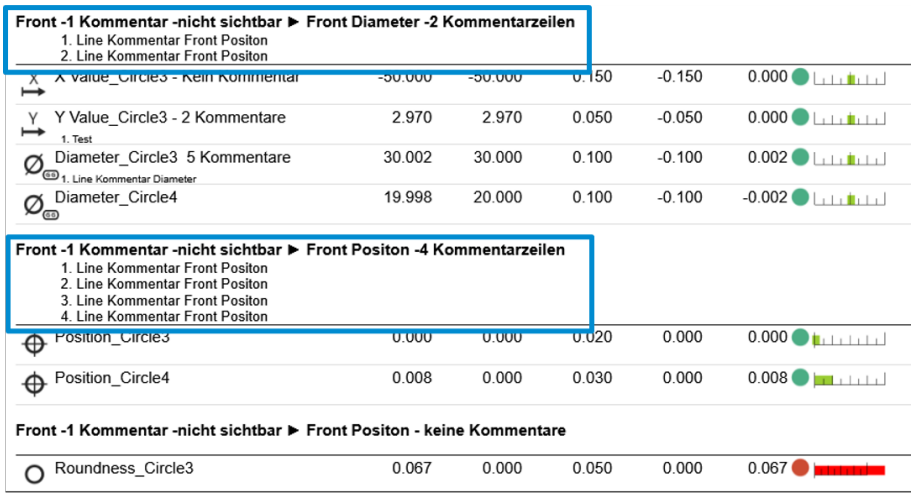
PiWeb - Dynamic group comments and text elements

157175

Dynamic group comments

Benefit

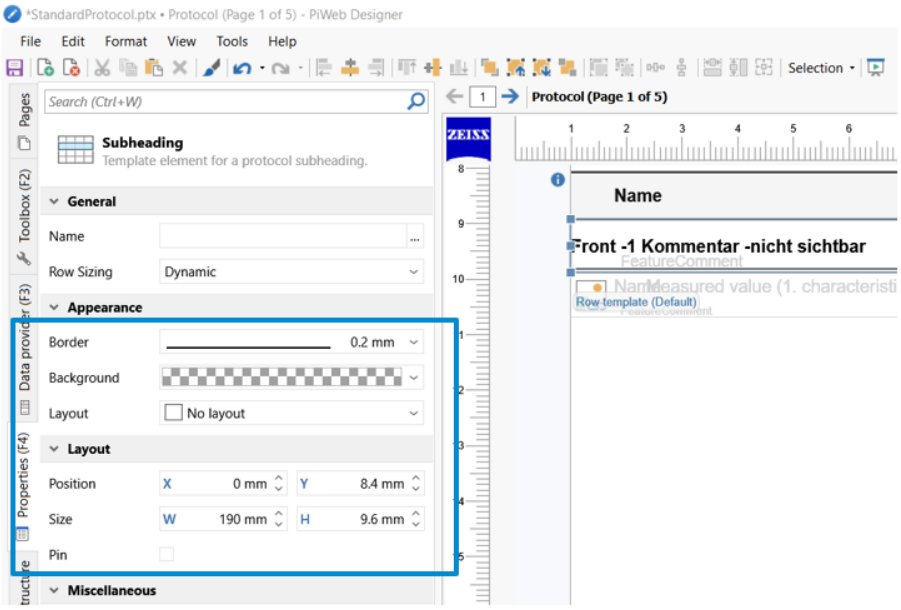
The number of comment lines in a group comment is increased dynamically.

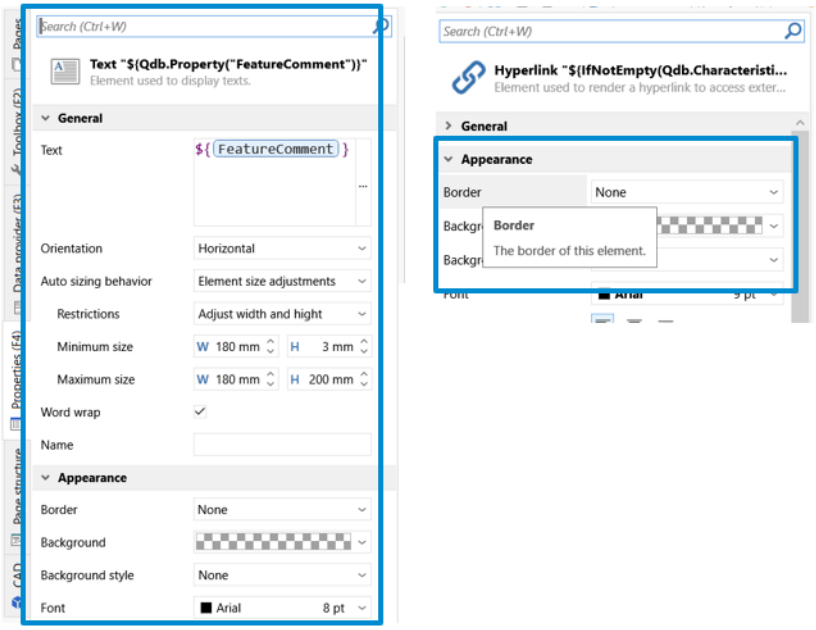


Front -1 Kommentar -nicht sichtbar ► Front Diameter -2 Kommentarzeilen 1. Line Kommentar Front Positon 2. Line Kommentar Front Positon					
X Value_Circle3 - Kein Kommentar	-50.000	-50.000	0.150	-0.150	0.000
Y Value_Circle3 - 2 Kommentare 1. Test	2.970	2.970	0.050	-0.050	0.000
Diameter_Circle3 5 Kommentare 1. Line Kommentar Diameter	30.002	30.000	0.100	-0.100	0.002
Diameter_Circle4	19.998	20.000	0.100	-0.100	-0.002
Front -1 Kommentar -nicht sichtbar ► Front Positon -4 Kommentarzeilen 1. Line Kommentar Front Positon 2. Line Kommentar Front Positon 3. Line Kommentar Front Positon 4. Line Kommentar Front Positon					
Position_Circle3	0.000	0.000	0.020	0.000	0.000
Position_Circle4	0.008	0.000	0.030	0.000	0.008
Front -1 Kommentar -nicht sichtbar ► Front Positon - keine Kommentare					
Roundness_Circle3	0.067	0.000	0.050	0.000	0.067

Details

Implementation in PiWeb Designer:

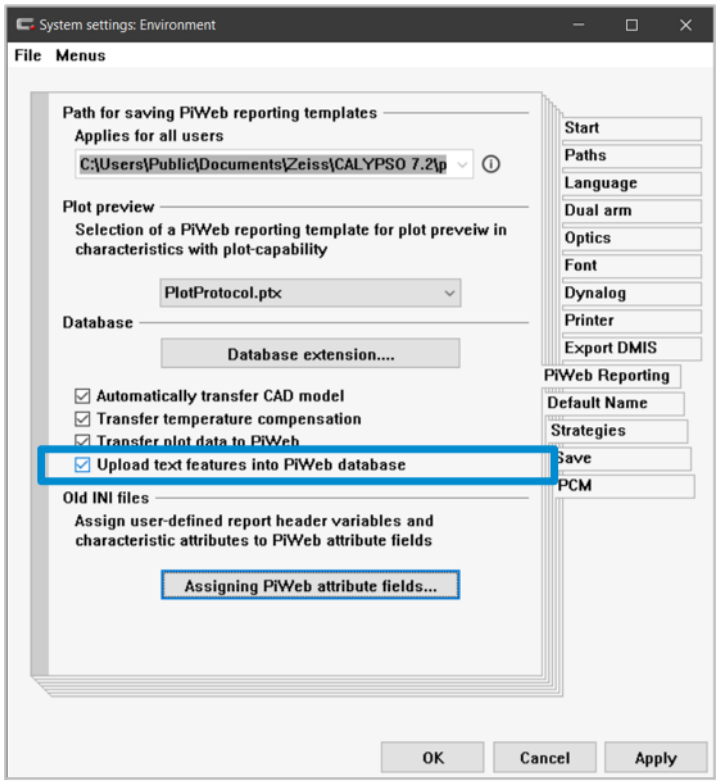




Dynamic text elements

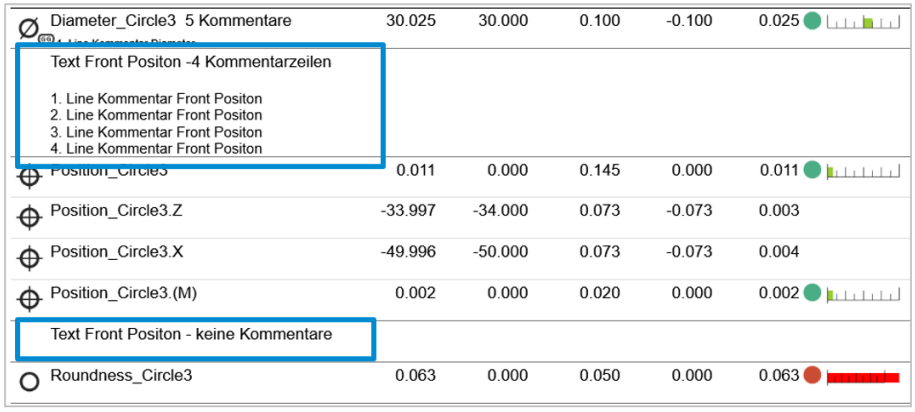
Benefit

The text elements can be output in PiWeb reporting.



Details

The transmission of text elements is activated via **Extras → Settings → Environment → PiWeb reporting**.



Group comments or text element. What makes more sense?

Recommendation: Use a group with group comment. The group is assigned to characteristics. The sorting and result filtering therefore function with assigned group headers in the report. An individual characteristic selection generates the correct group header. Report elements automatically create the correct group header.

The text element has no logical allocation to characteristics. Text elements have no effect in the report with regard to sorting and result filtering. Text elements must be removed manually in tables. A text element functions only in the standard report.

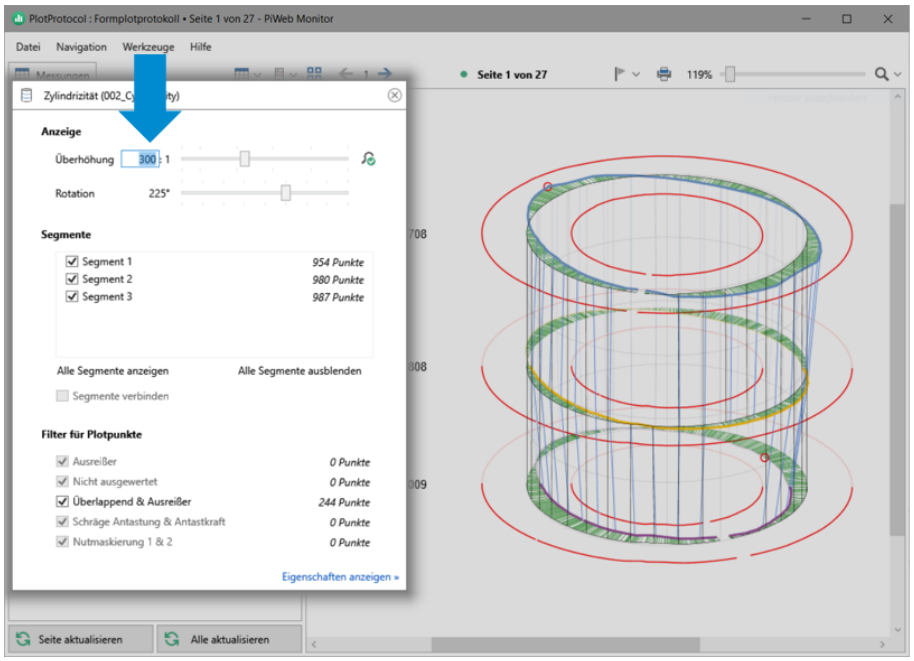
PiWeb reporting - Entering the plot magnification as a number

The **magnification** can be entered directly as a value via an input field.

Advantage: Fast setting of the magnification.

NOTE

This function was introduced with PiWeb reporting 7.4.



PiWeb reporting plus GUI - Sorting of databases and protocols

167072

New possibility for sorting databases and protocol templates;

- Name

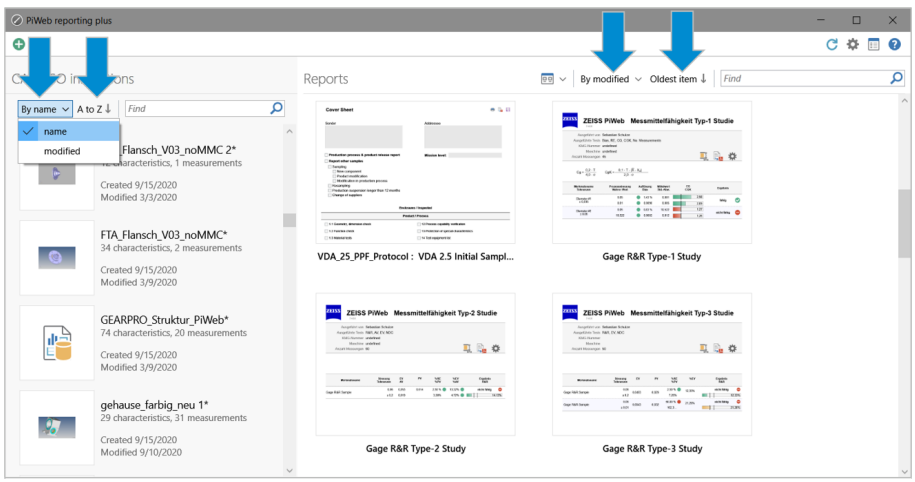
  Order:

  - A to Z
  - Z to A

- Last change

  Order:

  - First change
  - Last change



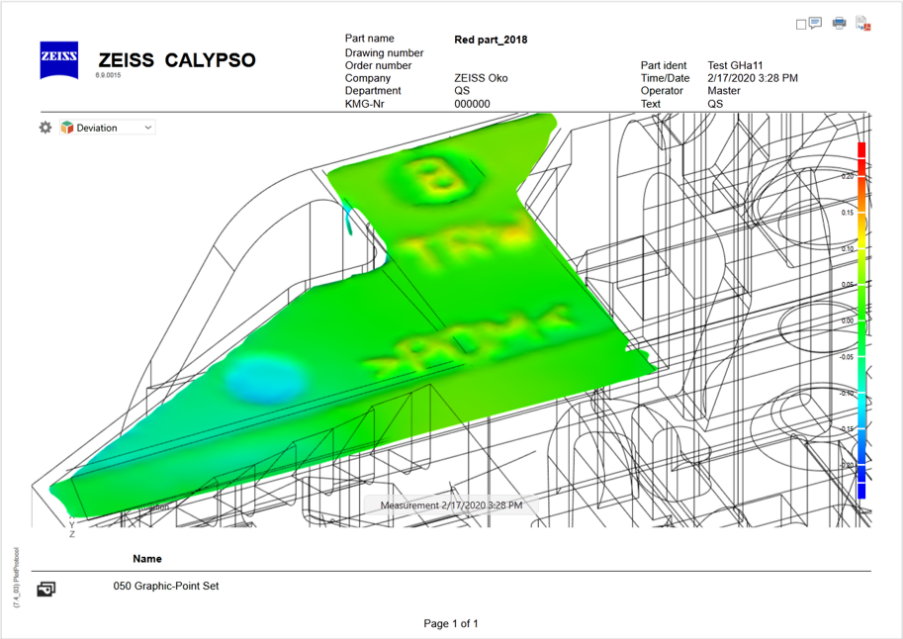
Benefit

Fast location of measurements and protocol templates.

PiWeb reporting - Higher resolution for PDF export

155080

The quality of screenshots for the PDF export in PiWeb reporting is set to a higher resolution.



Graphic outputs such as false color plots or CAD views are stored in better quality as PDF files due to their higher resolution.

PiWeb reporting - Faster data transfer, faster protocols

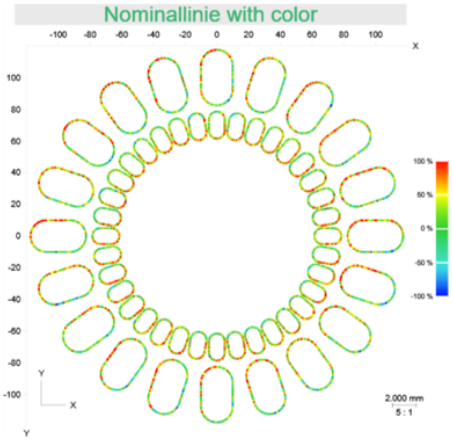
Over 50 individual improvements (pull requests) to enhance performance in PiWeb reporting 7.8.

- Faster form plots
- Filters and data bindings up to 20x faster

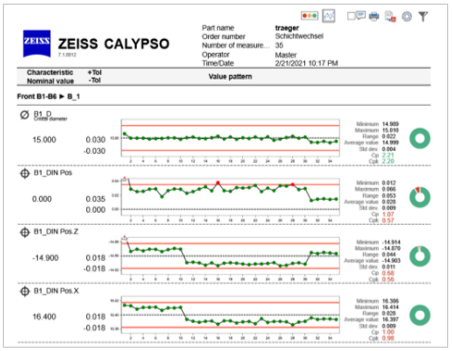
Example:

	Trend report, 805 pages with statistical evaluations
CALYPSO 6.8 slow	CALYPSO 7.0/PiWeb 7.4 47 seconds to load/21 minutes to print

CALYPSO 7.2/PiWeb 7.8 Rendering
< 0.5 seconds



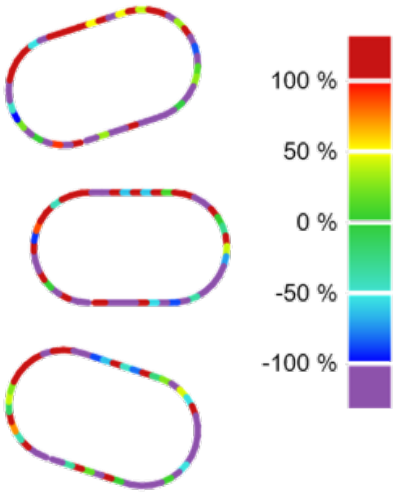
CALYPSO 7.2/PiWeb 7.8
16 seconds to load/90 seconds to print



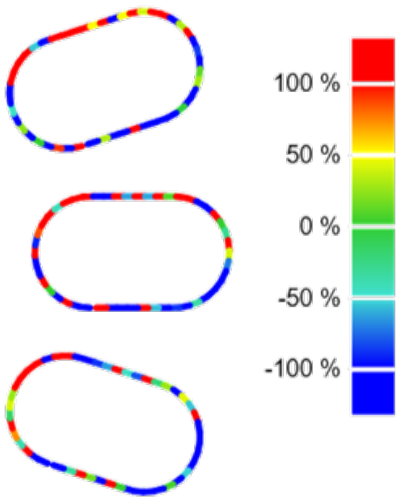
PiWeb reporting - Extension of the color scheme for form plots and CAD deviation analysis

Extension of the color scheme for better display of values that are out of tolerance.

Extended color scheme:
Values that are out of tolerance have a different color.
Advantage: Large errors are clearly recognizable.



Previous display with red/green/blue:
Values that are out of tolerance have almost the same color as values with 95% tolerance.
Disadvantage: Large errors are hard to recognize.

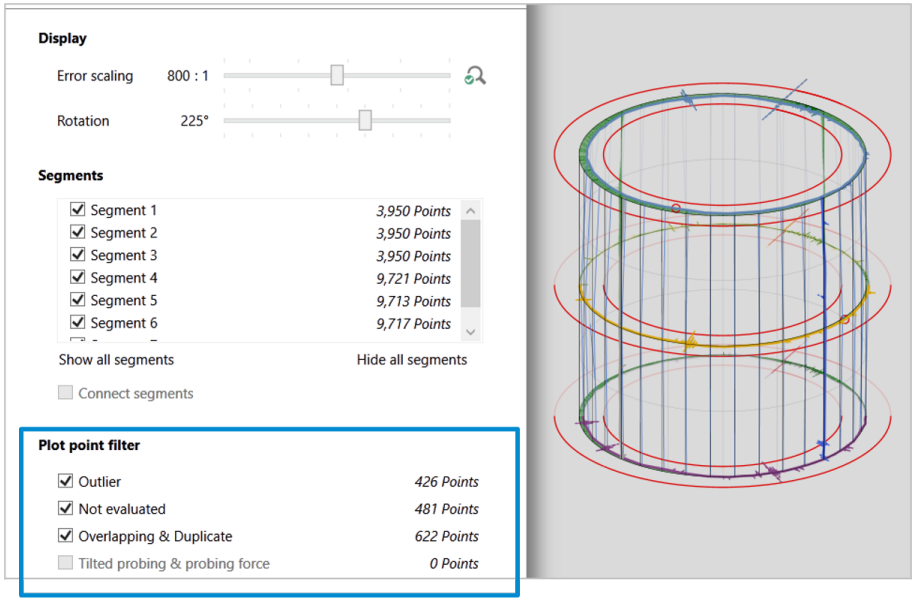


PiWeb reporting - Plot filter check box replaced

The functionality of the check box for filtering the plotting points of form plots has been replaced.

– Old: Untick check box for plot filter.

– New: Tick check box for plot filter.

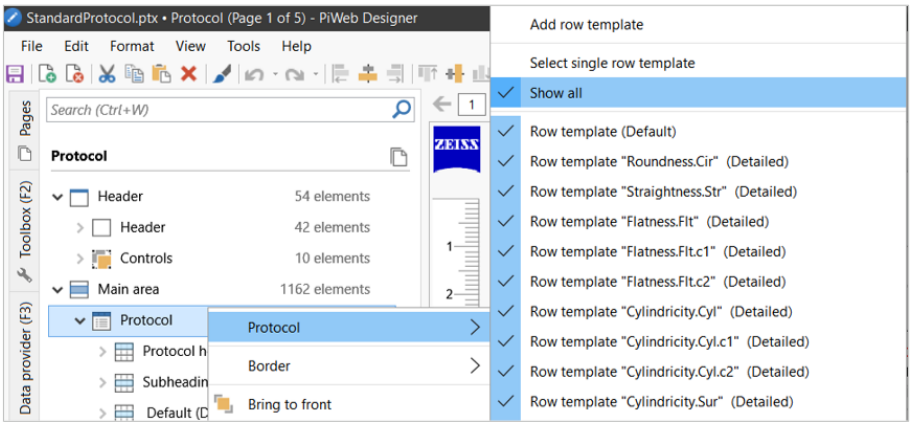


PiWeb reporting Designer - Enhanced editing function for row templates

Fast selection and deselection of row templates is possible in the protocol element:

– Select only one row template.
– Select one or more row templates.
– Select all row templates.

Advantage: Faster and easier editing of row templates in the protocol element.

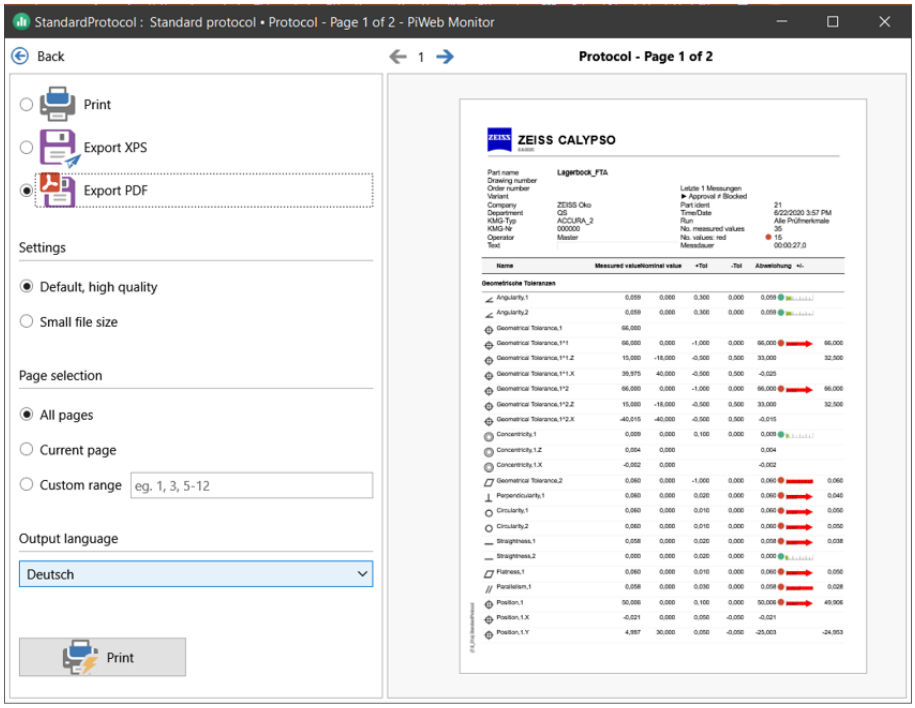


PiWeb reporting - Adjustable protocol output language

If a protocol is exported as a PDF or XPS file, the output language is adjustable. As of now, the language of the user interface may differ from the language setting of the protocol output.

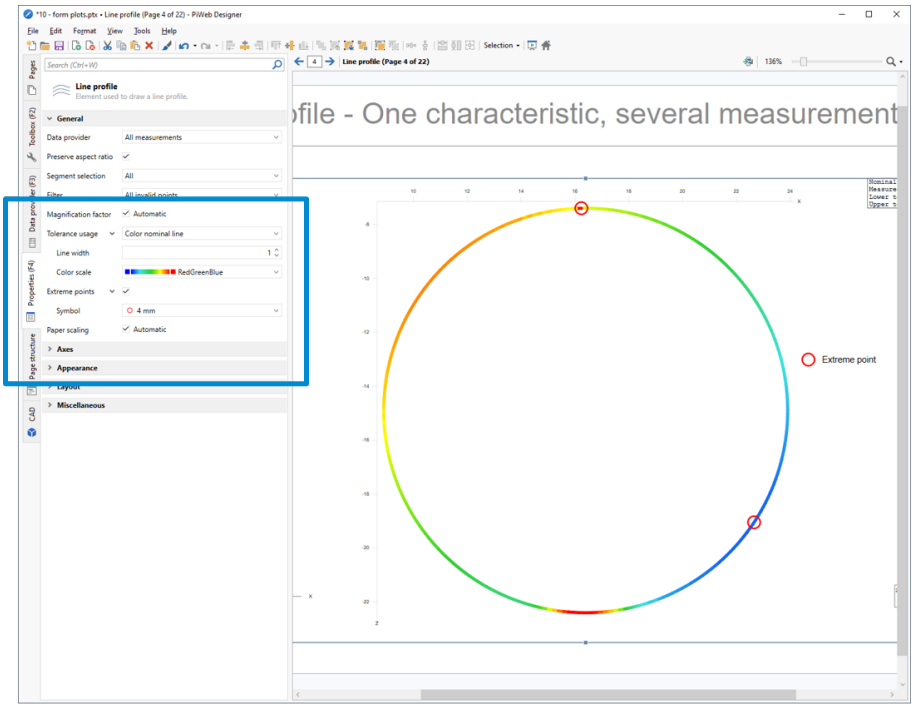
Example:

– User interface: **English**
– Output of measurement protocol: **German**



PiWeb reporting - Coloring extreme points of nominal line

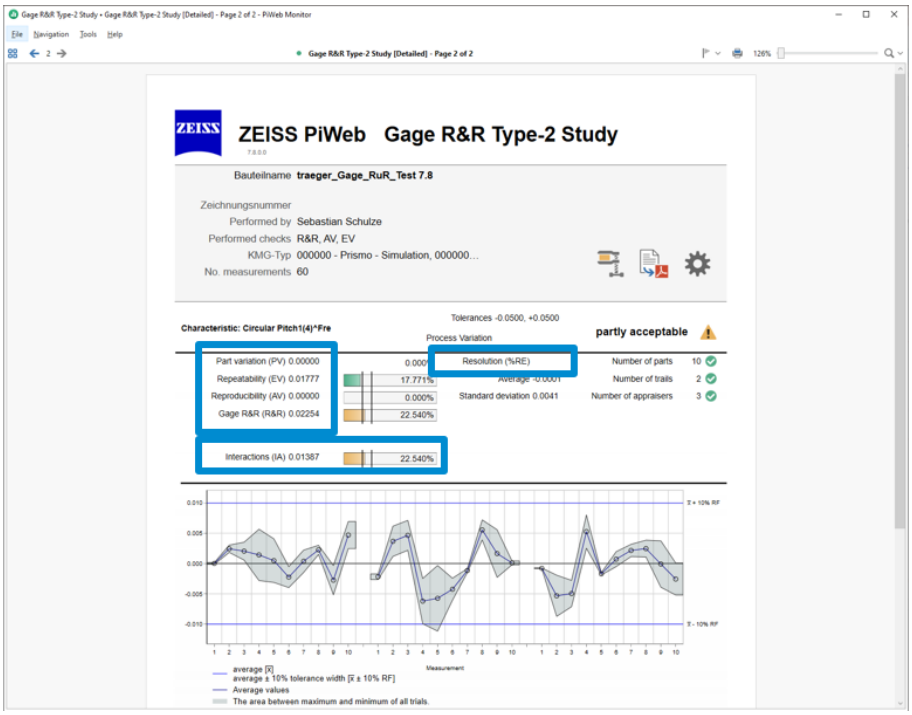
The extreme points of the nominal line can be colored.



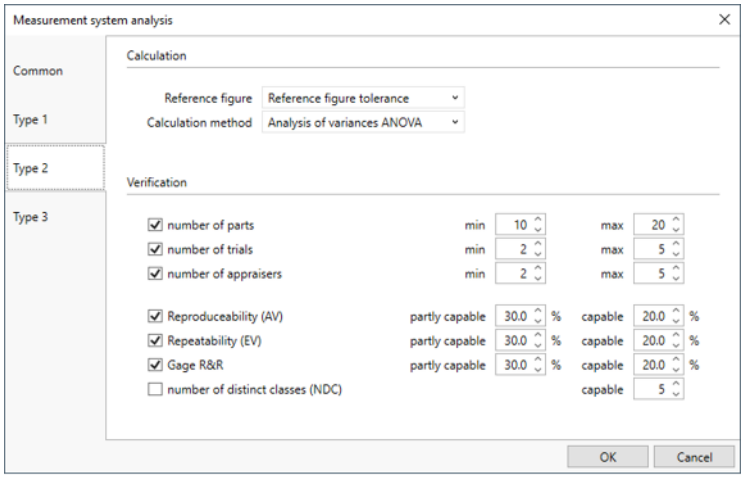
PiWeb reporting plus - Gage R&R adjustments

– Measured data are fetched after changing the Gage R&R configuration.

– The percentage of IAs (interactions) is calculated.



– Gage R&R adjustments.



PowerSaver tool

168879

The PowerSaver tool can be used to configure the PowerSaver as well as the AirSaver of a CMM controller.

Benefit

The PowerSaver tool contributes to *energy and CO2 savings*.

LDAP-S connection

136707

You can log in to the system via LDAP/LDAPS.

Benefit

The LDAP (Lightweight Directory Access Protocol) is a software protocol that makes it possible to find organizations, individuals and other resources, e.g. files and CMMs, in a network. LDAPS is the Lightweight Directory Access Protocol variant that is protected by SSL/TLS.

Details

CALYPSO 2021 supports system login via LDAPS.

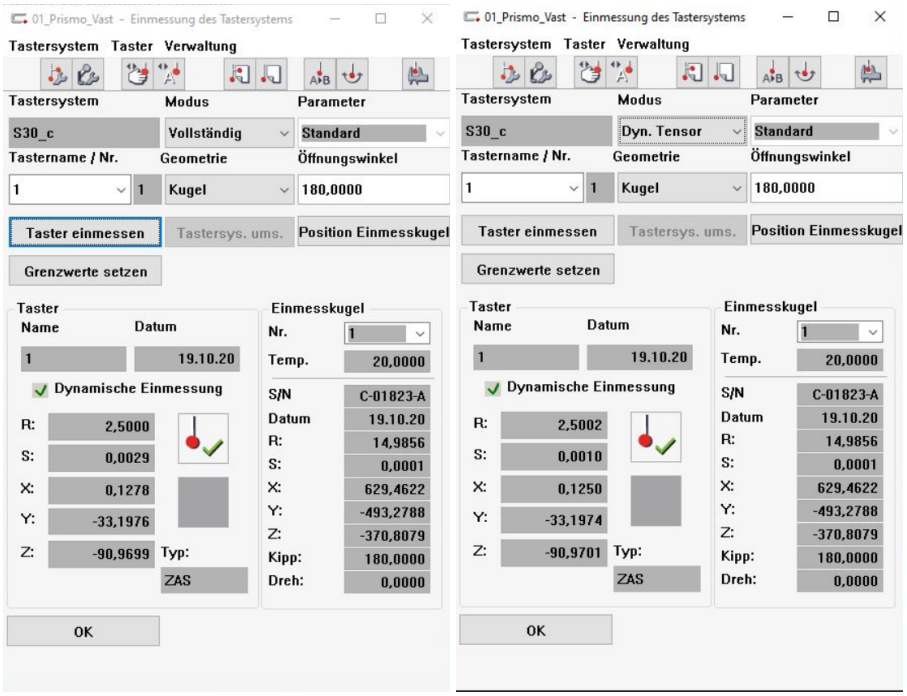
CALYPSO initially attempts to establish a connection via LDAPS. If this does not work, the system attempts to connect via LDAP.

Integrating the dynamic tensor qualification method for ZAS

141894

Stylus systems can be qualified on the ZAS with the **Dyn. tensor** mode.

Details



Extension of the geometry best fit

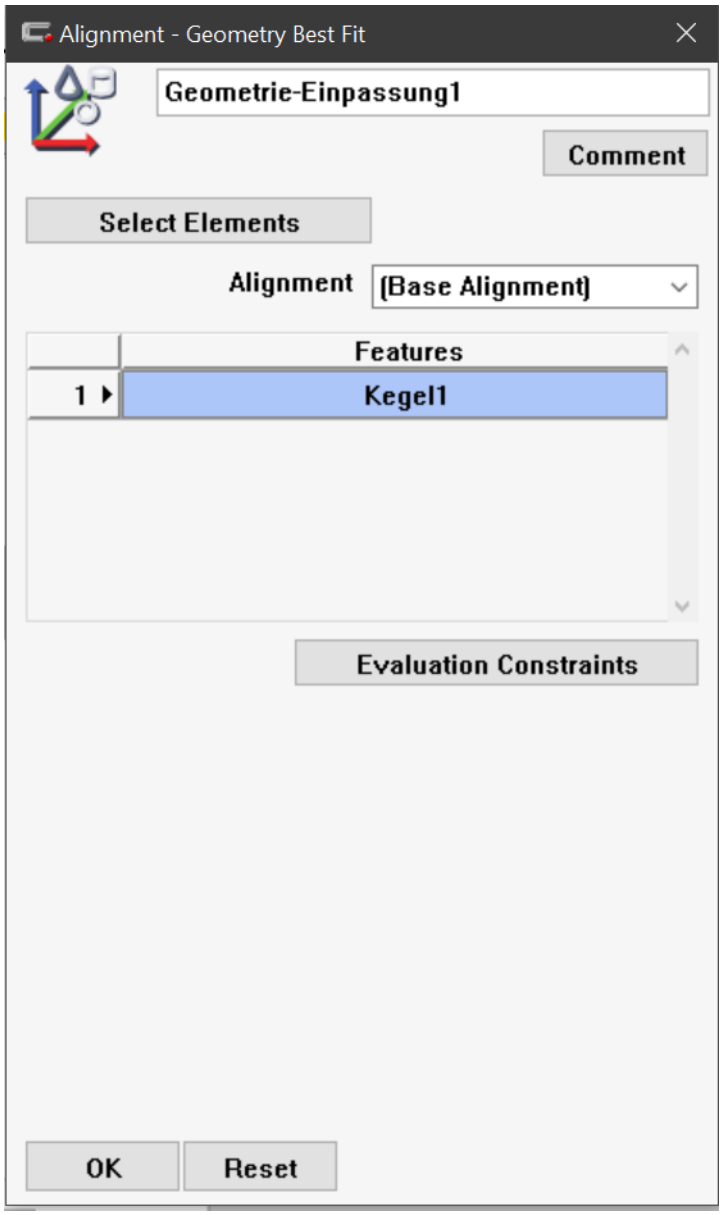
149970

The geometry best fit was extended.

Benefit

The geometry best fit now also allows the features Cone, Sphere , 3D Line, Circle on Cone, Circle on Sphere, and Circle on Torus.

Details



The selection has been extended to the already existing list of datum features.

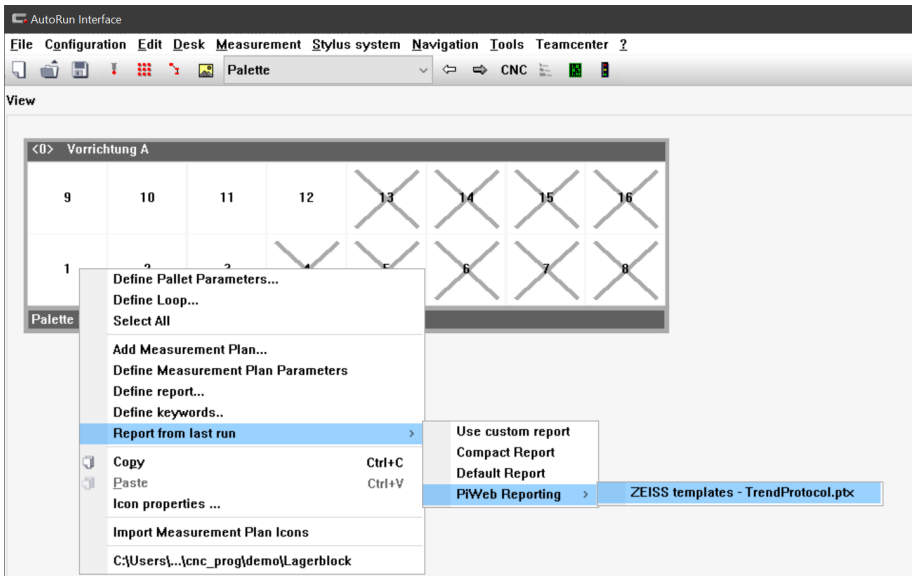
Call: **Resources → Utilities → Geometry best fit**.

AutoRun - PiWeb reporting protocol from last run is callable

151893

The PiWeb reporting protocol from the last run is callable in AutoRun.

Details



DMIS import - Improvements

157108

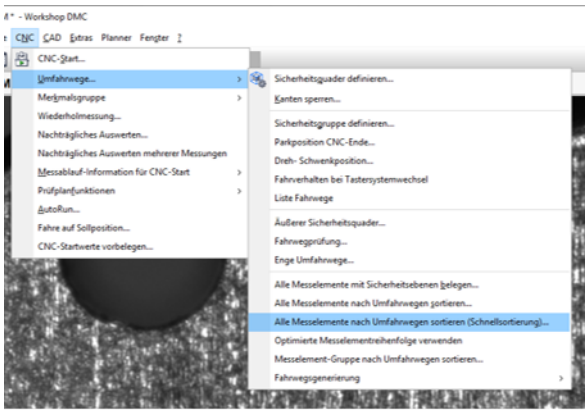
The command set for DMIS import has been extended. The full scope of DMIS commands is contained in the operating instructions.

Adaptation of the camera positions to the search beams

158151

Improvements of travel paths for optical measurement on the O-IN-SPECT.

- The duration of the measurement can be reduced considerably with little effort through integration in the feature sorting.
- Switch on travel path optimization: **CNC → Travel paths → Sort Features for travel paths**.
- The optimization bundles as many features as possible in one camera position.
- The features are automatically determined based on the preset zoom level.
- Clear performance advantage if multiple elements fit into one camera image.
- Clear performance advantage for patterns as well.



Benefit

- Path automation and optimization
- General software optimization of algorithms
- Multiple features in one image
- Dispensing with unnecessary machine movements
- Reduction of visualization in the CNC run
- “Turbo mode” for switching extensions on and off
- Evaluation of the recorded image on changing to the next measurement position

Details

Test measurement plan measuring time comparison: *UTZ_Lochplatte_72_TEST*

- Original state: Total time 36:14 min
- (New) run sorted and grouped: Total time 25:35 min
- (New) Run sorted and grouped, measuring time optimization step 3: Total time 13:15 min

Latest changes

The following bugs have been fixed in CALYPSO 7.2.16:

Identifier	Description
128022	Stylus system data cannot be imported to permanent measuring systems.
166008	When conditions and input/output parameters are used in a measurement plan, the processing order deviates from that shown in the user guide.
192437	The transfer of PiWeb synchronization takes too long.
242332	STEP file with PMI cannot be loaded.
243032	The retract distance is not updated as a PCM parameter.
272156	Some CATIA models cannot be imported.
272805	Error messages during CNC run in the optics.
273762	During the import of a curve nominal data file without information about the nominal normals, the normals may be calculated incorrectly.
276097	PiWeb sometimes crashes.
276148	Measurement plans containing a lot of curves can result in memory overflow.
278067	CALYPSO may crash when importing point clouds.
278451	Error message when entering polar coordinates in the Pattern with position list window.
281108	PiWeb report is only displayed after you press F5.
283335	DME Server: I++ DME ReQualify command does not work properly.
283460	Incorrect format for Excel export from PiWeb.
283698	Designation of tolerance segment names in an ASCII file must not have any spaces.
284326	Surface area of a curve is not calculated for a certain measurement plan.
286526	If a measurement strategy line is measured optically with the step size selected and has a negative length, the measurement is taken in the wrong direction starting from the starting point.
286585	No warning message if the qualification force is too high on PRISMO ultra and XENOS.
286714	Duplex operation: slave elements cannot be retroactively evaluated after an abort.
288633	Collision following specified articulating position.
292015	The RT-AB workpiece positioning aid window does not open.
293061	For features with graduation and formulas, incorrect results may occur if the evaluation is performed directly after the measurement.

3 Installation

This chapter contains:

Installation notes and system-related information

Unattended installation with CALYPSO 2021.msi

Special rules apply to installation by means of CALYPSO 2021.msi. Please refer to the notes in ➢ *Installation with CALYPSO 2021.msi [⇨ 3-3]*.

Installation with CALYPSO 2021.msi

For CALYPSO 2021, a separate *CALYPSO 2021.msi* installation package is available in addition to the setup.exe file. This format enables an interface-free installation (silent installation) and centralized installation by administrators (remote installation). This is particularly beneficial if multiple CMMs and/or OFFLINE stations have to be managed. *CALYPSO 2021.msi* is included on the installation medium in the CALYPSO directory.

Special conditions must be observed:

Setup requirements – *CALYPSO 2021.msi* does not include the programs required for setup. These must be already be installed or installed first. The system does not check if the setup requirements have been met. The installer or the administrator is responsible for this.

The following software must be installed for CALYPSO 2021:

- Microsoft .Net Framework 4.8
- Microsoft Visual C++ 2008 SP1 Redistributable Package (x64)
- Microsoft Visual C++ 2008 SP1 Redistributable Package (x86)
- Microsoft Visual C++ 2010 SP1 Redistributable Package (x64)
- Microsoft Visual C++ 2010 SP1 Redistributable Package (x86)
- Microsoft Visual C++ 2012 Update 4 Redistributable Package (x64)
- Microsoft Visual C++ 2012 Update 4 Redistributable Package (x86)
- Microsoft Visual C++ 2013 Update 4 Redistributable Package (x64)
- Microsoft Visual C++ 2013 Update 4 Redistributable Package (x86)
- Microsoft Visual C++ 2015-2019 Redistributable Package (x64)
- Microsoft Visual C++ 2015-2019 Redistributable Package (x86)
- Microsoft SQL Server 2017 Express (ZEISS SDCO)
- ZEISS License Activation Utility 64
- ZEISSBasicReportingSetup503100.exe
- ZEISS PDF Printer Set 7.7

The corresponding installation packages for the software are located in the CALYPSO\ISSetupPrerequisites directory on the CALYPSO 2021 installation medium.

No warnings – the warnings included in the regular Setup.exe file regarding EULA, parallel installations, SQL Server, FACS, .NET Framework installation, etc. are not displayed when the installation starts without a user interface. Please see the corresponding chapters in this document.

Basic CALYPSO installation from the installation medium

Please observe all notes on installation described in Installation notes and system-related information.

CALYPSO is a single-user application. It cannot be installed in a network and not be run as a client-server application. Local administrator rights are required to install CALYPSO.

NOTE

If this version updates an existing CALYPSO installation, you should first uninstall the existing installation.

This will not delete existing data such as measurement plans, stylus data, or other CMM-specific data. However, we recommend that you make backup copies of the data on a regular basis.

Use the Windows Uninstall function for uninstallation. To do this, open the control panel via the Windows key, select “Uninstall program”, select CALYPSO in the list, and click “Uninstall”.

To comply with the separation of programs and data recommended by Microsoft for Windows, the software will be installed in the following directories:

Programs	C:\Program Files (x86)\Zeiss\CALYPSO 7.2
Program data	C:\ProgramData\Zeiss\CALYPSO 7.2
User data	C:\Users\Public\Documents\Zeiss\CALYPSO

If the previous CALYPSO version is not uninstalled, CALYPSO 2021 will be installed in parallel to the existing version. This allows you to alternately use both versions.

NOTE

Special attention is required if several CALYPSO versions are used alternately!

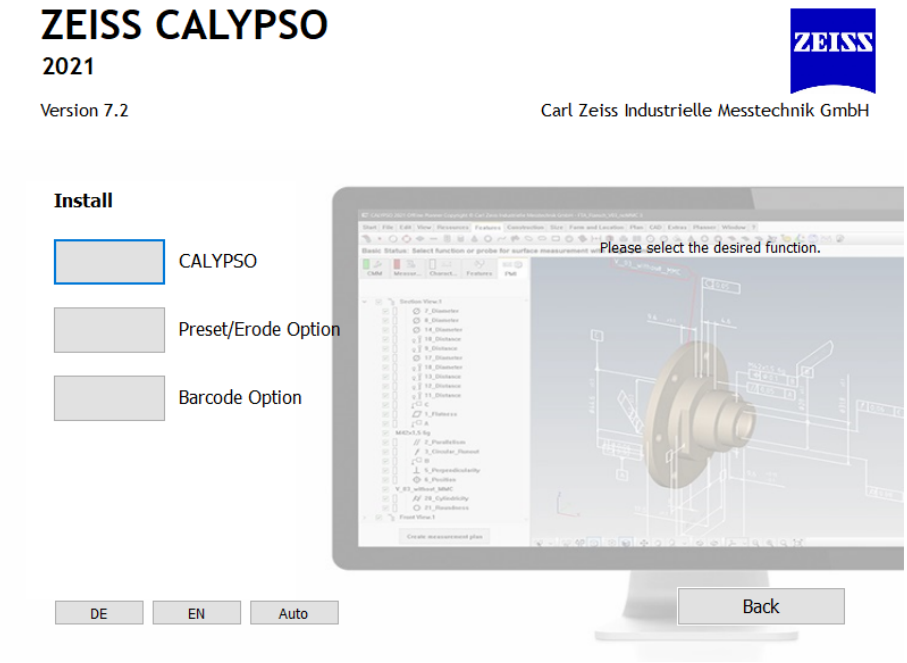
- There is an increased risk of stylus systems being mixed up during automatic stylus system change! Before changing the stylus system for the first time, make sure that the currently used stylus system is actually inserted in the probe.
- Generally, measurement plans saved with a new CALYPSO version cannot be opened using an older version. Observe any warning on this when saving.
- If external evaluation programs are used, make sure to adjust the paths for data access accordingly.

– Parallel installation of more than one CALYPSO version in combination with the METROTOM Measuring Module is *not* permitted.

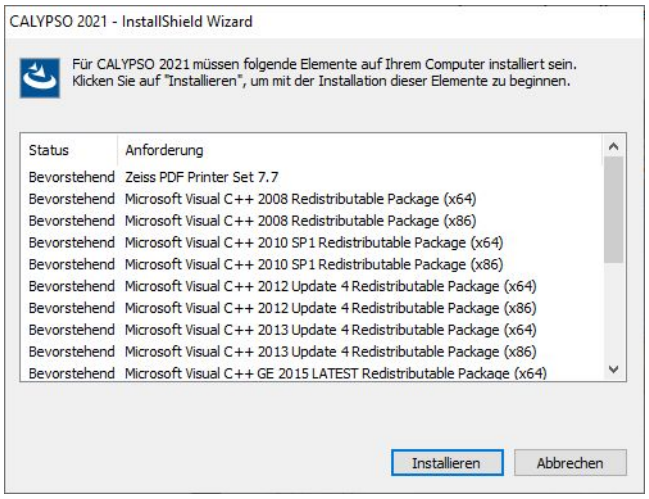
Use Windows Explorer to select CALYPSO.exe on the installation medium and double-click to start the installation routine.

Click the **Installation** button.

Click the **CALYPSO** button.

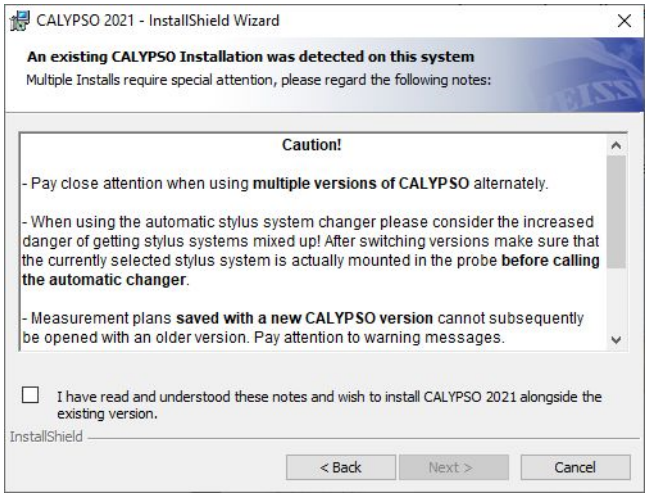


CALYPSO 2021 automatically installs several setup prerequisites in case they are not available on the target system. This procedure may require one or more system reboots and may take a while.



Once the setup prerequisites are installed, the CALYPSO 2021 setup is unpacked and the installation is initiated and started. You have to accept the end user license agreement.

Das CALYPSO setup detects automatically if an older version is already installed and, in that case, displays the following dialog page:



If you want to install the new CALYPSO version in parallel to an existing version, you have to confirm that you are aware of the above precautions in order to continue with the installation. **Installing an older version in parallel to an existing more recent version is not permitted!**

In case of simultaneous installation of several CALYPSO versions, user data is saved in separate directories.

For CALYPSO 2021, the directory is:

C:\Users\Public\Documents\Zeiss\CALYPSO 7.2

Install service packs and patches

Necessary program modifications and additions are provided as service packs or patches. Service packs and patches can be provided by email, download or on a data carrier. The general procedure is the same for all media.

If you also receive a CALYPSO service pack or patch with the CALYPSO installation medium, the service pack or patch must be installed **after** the base version has been installed.

The corresponding base version must always be installed from an installation medium before a service pack or patch is installed. The currently installed version can be seen in CALYPSO in the Miscellaneous menu. Furthermore, the currently installed version is also automatically entered in the CALYPSO error report. It can be accessed via the Extras menu.

NOTE

A patch contains corrections to one or more acute error messages and has been tested at a reduced level. If your system is affected, we recommend installing the patch. Otherwise, the correction will be included in the following service pack, which will undergo the entire testing process. For detailed information about the latest patch, please contact customer support.

The latest service packs and patches for CALYPSO can be downloaded at:

https://portal.zeiss.com/

Service pack installation

1. Exit CALYPSO first if it has been started.
2. Use Windows Explorer to open the directory where you have stored the service pack file.
3. Start the service pack installation by double-clicking the relevant *Setup.exe* file.

   The service pack installation will then run completely without further input until the final dialog is displayed.
4. Click **Finish** to complete the installation.

A service pack can also be used for downgrading. For example, if desired, you can downgrade from service pack version 6.8.08 to service pack version 6.8.04. For this, simply install service pack 6.8.04 over the existing 6.8.08 version. This will automatically uninstall the existing version and restore CALYPSO 6.8.04.

Patch installation

1. Exit CALYPSO first if it has been started.
2. Use Windows Explorer to open the directory where you have stored the patch file.
3. Start the patch installation by double-clicking the relevant Setup.msp file.

   The patch installation will then run completely without further input until the final dialog is displayed.
4. Click **Finish** to complete the installation.

CALYPSO patches can be removed again if required. To do so, open Windows Control Panel and select “Uninstall Program”. Click **View Installed Updates** to make the patches visible, select the patch you want to remove and click **Uninstall**. Uninstalling the patch will restore the previous CALYPSO version.

CMM data backup

CALYPSO allows you to backup all relevant CMM data and settings. This is particularly useful if the PC has to be replaced.

Installing ViScan drivers

Hardware drivers are required for ViScan operation. Below you will find a description of how to install the required drivers.

Installation is done via Windows Explorer from the CALYPSO installation medium in the **ViScanDrivers** directory. Double-click MIL64Setup.exe to start the installation. All following windows can be confirmed by clicking **Next** or **OK**.

When the installation is complete, you are prompted to restart Windows.

Installing METROTOM software

The METROTOM Measuring Module still has to be installed in addition to the CALYPSO Basic software.

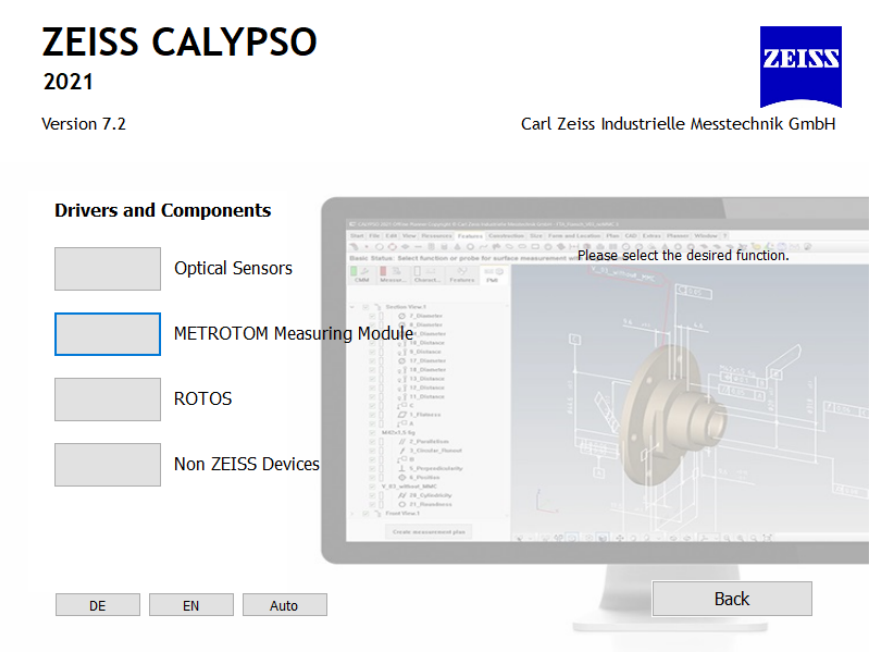
NOTE

Parallel installation of CALYPSO and the METROTOM Measuring Module is **not** permitted.

METROTOM-CT installation sequence:

1 Install CALYPSO Basic.

2 From the "Basic" installation medium, select **METROTOM Measuring Module** via "Drivers and Components".



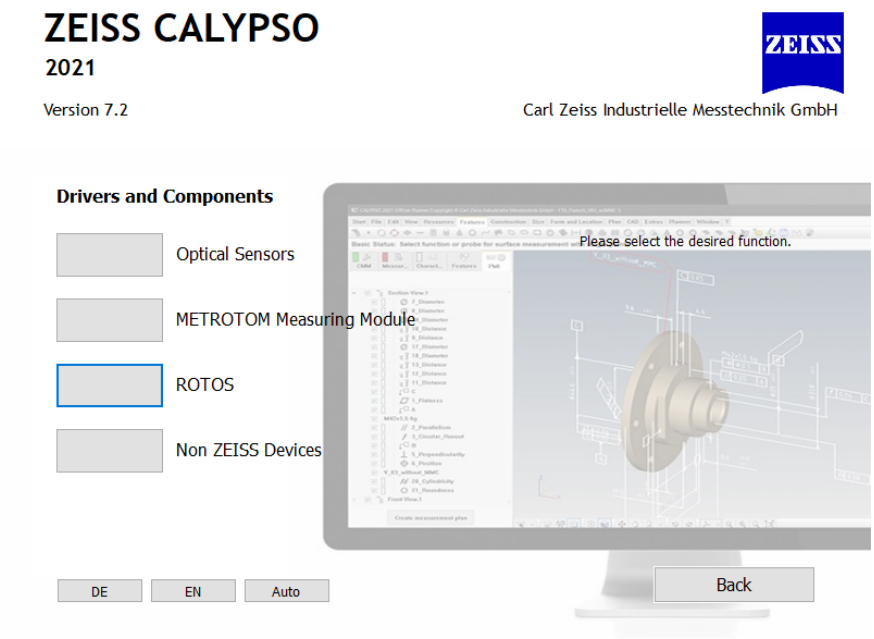
3 Finally, any available CALYPSO service pack or patch will be installed.

Installing ROTOS drivers

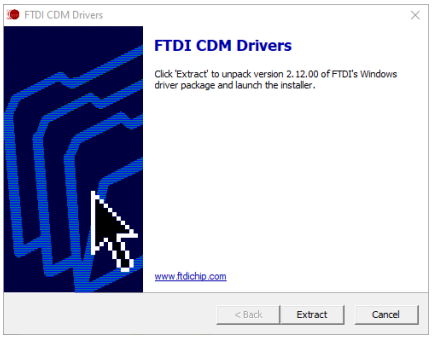
To use the ROTOS sensor, the software drivers for ROTOS must be installed in addition to CALYPSO Basic software.

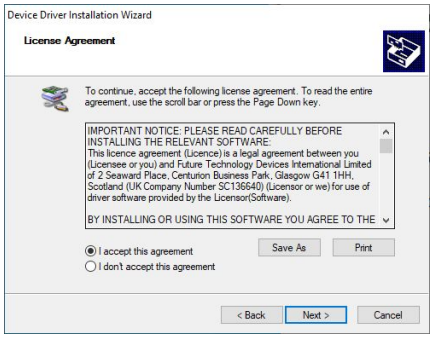
1 Install CALYPSO Basic.

2 From the "Basic" DVD, select **ROTOS** via "Drivers and Components".

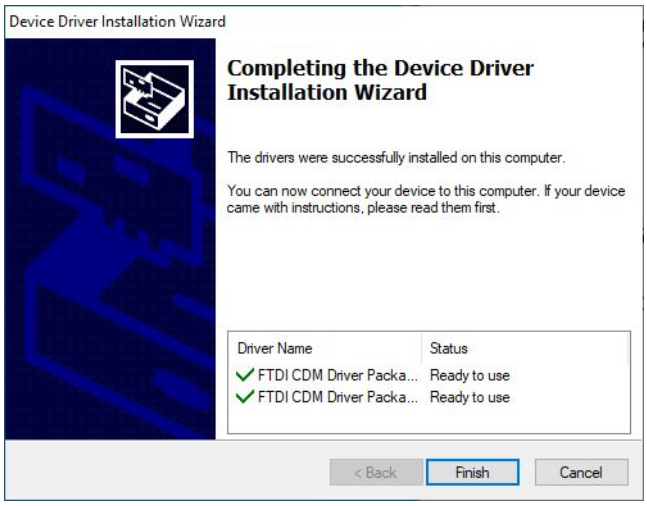


3 FTDI CDM Drivers starts. Confirm any dialog that appears.





4 Successful installation of the drivers is confirmed by display of the following dialog:

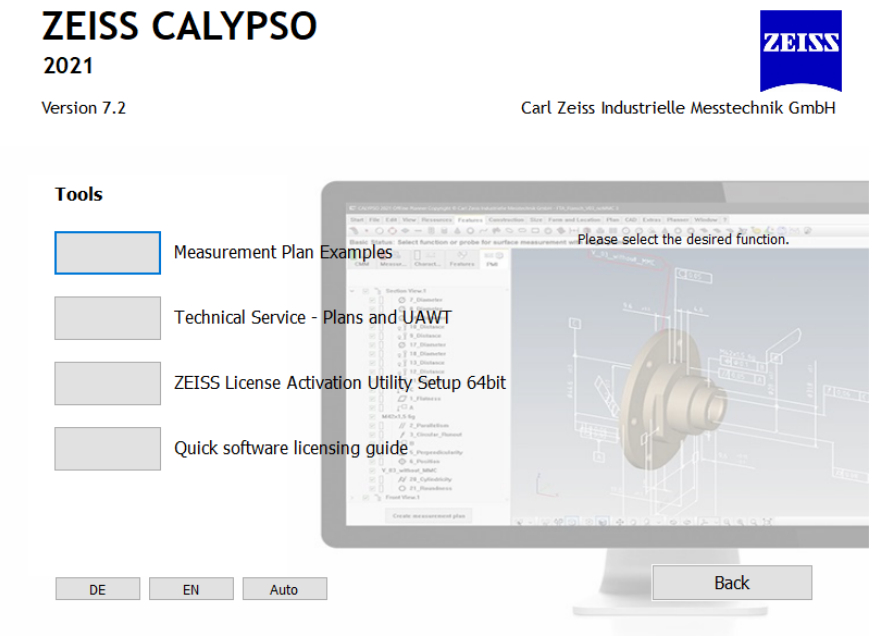

Device Driver Installation Wizard
Completing the Device Driver Installation Wizard
The drivers were successfully installed on this computer.
You can now connect your device to this computer. If your device came with instructions, please read them first.
Driver Name
Status
FTDI CDM Driver Packa...
Ready to use
FTDI CDM Driver Packa...
Ready to use
< Back
Finish
Cancel

Installing sample measurement plans

In addition to CALYPSO Basic software, sample measurement plans are available for various applications.

1 Install CALYPSO Basic.

2 The **Measurement Plan Examples** are called from the basic installation medium via 'Tools'.



The sample measurement plans are then stored in the directory "C:\Users\Public\Documents\Zeiss\CALYPSO 7.2\workarea\inspections_examples".

4 Compatibility

This chapter contains:

Included software

CALYPSO 2021 includes the following software packages:

Program	Type	Version
CALYPSO 2021	Basis	7.2.1600
- PiWeb reporting	Comp	7.8.17.0
- Acis	Comp	R32 20221.0.1.22138
- Kmgio	Comp	35.0.2016.310
Preset/Erode	Option	7.0.2000
Bar code	Option	8231005616
ViScan	Driver	7.0.0000
LineScan	Driver	1.24.18
CFS	Driver	1.23.4
PulstecTDS-H program setup	Driver	1.21.2
METROTOM measuring module	Extension	6.9.0011
ROTOS	Driver	2.12.00
ZEISS SES Viewer	Extension	1.0.2320.0
Non-ZEISS equipment – CNC	Extension	7.2.00
Non-ZEISS equipment – manual/laser tracker	Extension	7.2.00

The following programs required for setup are installed if they have not already been installed:

Program	Version
ZEISS PDF Printer Set 7.7 (nova PDF printer)	5.5 and 7.7.394
Microsoft .NET Framework 4.8	
Microsoft Visual C++ 2008 – x64 9.0.30729.6161	
Microsoft Visual C++ 2008 – x86 9.0.30729.6161	
Microsoft Visual C++ 2010 – x64 10.0.40219	
Microsoft Visual C++ 2010 – x86 10.0.40219	
Microsoft Visual C++ 2012 – x64 11.0.61030	
Microsoft Visual C++ 2012 – x86 11.0.61030	
Microsoft Visual C++ 2013 – x64 12.0.40660	
Microsoft Visual C++ 2013 – x86 12.0.40660	

Program	Version
Microsoft Visual C++ 2015-2019 – x64 14.20.27508	
Microsoft Visual C++ 2015-2019 – x86 14.20.27508	
Microsoft SQL Server 2017	
ZEISS License Activation Utility	2.20.0002
ZEISS basic reporting	5.0.31.0
Stylus system creator	1.7.8147

Coordinate measuring machines and sensor systems

Minimum requirements

This chapter lists the minimum firmware versions required to operate the software, both for standard and retrofit systems.

Operation with a different firmware version

We recommend using the latest firmware for optimal operation of our coordinate measuring machines. New versions of CALYPSO also run on systems with old firmware versions. The compatibility overview table shows the firmware that was originally delivered for the individual CMM types or the respecified minimum firmware version. In general, you can only use new functions relevant to the system or connect new sensor systems after the firmware is updated. To eliminate corresponding limitations or identified malfunctions, it may be necessary to purchase an upgrade to the latest firmware and/or hardware version. Please see the additional specifications.

Additional requirements for individual functionalities

Individual software functions that are heavily dependent on specialized hardware products and functions may have additional requirements. Please see the additional specifications for the corresponding coordinate measuring machines.

Scope of testing

The software was tested with the latest coordinate measuring machines and the latest firmware. In this configuration, full performance and complete functionality are guaranteed.

NOTE

The installed firmware versions can be viewed under **My Systems** in the ZEISS portal.

You can register for and access **My Systems** on the ZEISS portal via the following link: https://portal.zeiss.com/my-systems/metrology

Retrofit

Information about upgrading older coordinate measuring machines and individual ZEISS retrofit products is available under the following link: https://www.zeiss.com/metrology/services/system-support/retrofit.html

PowerSaver tool

The new generation of C99m controllers enables you to save power as well as compressed air (on CMMs that use air bearings). This new energy saving function is only available with a C99m controller and a firmware ≥43.01.

For more details, please see the operating instructions for the PowerSaver tool.

ACCURA

Current product line

Versions and firmware	Probes
≥22.04 ACCURA II	VAST XT gold, VAST XTR gold[1)], VAST XXT, VAST gold, DotScan[2)], LineScan[3)], ViScan IIs, RDS

Controller: C99N

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09 ACCURA I (not mass)	VAST gold D1 and D2, VAST XT gold, VAST XTR gold[1)], RDS Standard, CAA and select, VAST XXT TL1 and VAST XXT TL3, RST-P, RST-T, Renishaw TP2, TP6, TP20, TP200, ViScan I and II
≥20.09 ACCURA mass	VAST gold D1 and D2, VAST XT gold, VAST XTR gold[1)], RDS Standard, CAA and select, VAST XXT TL1 and VAST XXT TL3, RST-P, RST-T, Renishaw TP2, TP6, TP20, TP200, ViScan IIs

Controller: C99N

[1)] Use of the VAST XTR gold requires firmware ≥31.23.

[2)] Use of the DotScan probe requires firmware ≥35.01.

[3)] LineScan 1 from firmware ≥26.10, WBScan ≥1.11 and mass wiring

CARMET

Current product line

Versions and firmware	Probes
≥28.04 CARMET 2	RDS, RST-P, TP6, TP20

Controller: C99L, C99L2

CenterMax

Current product line

Versions and firmware	Probes
≥37.03 CenterMax USS2.0	DotScan, VAST XTR gold, VAST gold

Controller: C99HC

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09 CenterMax	VAST XTR gold[1)], VAST gold
≥37.08 CenterMax upgraded to USS2.0	VAST XTR gold, VAST gold

Controller: C99N

[1)] Use of the VAST XTR gold requires firmware ≥26.10.

CONTURA

Current product line

Versions and firmware	Probes
≥40.09 CONTURA 6206	LineScan[1)], RDS, VAST XT gold, VAST XTR gold, VAST XXT, ViScan IIs, XDT

Controller: C99m

Versions and firmware	Probes
≥31.04 CONTURA G2 production year from 2014	LineScan[1)], RDS, VAST XT gold, VAST XTR gold, VAST XXT, ViScan IIs, XDT
≥31.08 CONTURA G3	LineScan[1)], RDS, VAST XT gold, VAST XTR gold, VAST XXT, ViScan IIs, XDT

Controller: C99L, C99L2

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09 CONTURA model year <2006	VAST XT gold
≥31.23 CONTURA G2 production year 2005-2014 (not with C99L)	VAST XT gold, RDS standard, CAA and select, VAST XXT TL1 and VAST XXT TL3, XXT direkt, RST-P, Renishaw TP2, TP6, TP20, TP200, ViScan IIs

Controller: C99N

[1] LineScan 1 from firmware 20.03, WBScan ≥1.11 and mass wiring

DuraMax

Current product line

Versions and firmware	Probes
≥21.08[1] DuraMax	VAST XXT TL1 and VAST XXT TL3

Controller: C99L, C99L2, C99m

Previous product lines & retrofit

Versions and firmware	Probes
≥21.08 DuraMax	VAST XXT TL1 and VAST XXT TL3

Controller: C99S

Versions and firmware	Probes
≥21.08 DuraMax RT	VAST XXT TL1 and VAST XXT TL3

Controller: C99HC

[1] Higher firmware versions are required for special software functions.

GageMax

Current product line

Versions and firmware	Probes
≥36.07 GageMax SC2020 from production year 2017	VAST XT gold, VAST XTR gold

Controller: C99HC

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09 GageMax	VAST XT gold, VAST XTR gold[1)]

Controller: C99N

[1)] Use of the VAST XTR gold requires firmware ≥26.10.

MICURA

Current product line

Versions and firmware	Probes
≥26.05 MICURA	VAST XT gold, VAST XTR gold[1)]

Controller: C99L, C99L2

Previous product lines & retrofit

Versions and firmware	Probes
≥26.05 MICURA with C99N	VAST XT gold, VAST XTR gold[1)]

Controller: C99N

[1)] Use of the VAST XTR gold requires firmware ≥26.10.

MMZ

Current product line

Versions and firmware	Probes
≥31.05 MMZ G	VAST XT gold, VAST gold, VAST XTR gold, VAST XXT, LineScan
≥31.05 MMZ M	VAST XT gold, VAST gold, VAST XTR gold, VAST XXT, LineScan
≥31.05 MMZ T	VAST XT gold, VAST gold, VAST XTR gold, VAST XXT, LineScan

Controller: C99N

O-DETECT

Current product line

Versions and firmware	Probes
≥42.10 O-DETECT 3/2/2	CMMs with CMM-OS NEO Server.[1)]
≥44.01 O-DETECT 5/4/3	

Controller: C99

[1] For additional information, please see the CMM-OS NEO release notes.

O-INSPECT

Current product line

Versions and firmware	Probes
≥27.05[1] OI322	Camera, DotScan[2], VAST XXT
≥33.06[1] OI543 / OI863	Camera, DotScan[2], VAST XXT

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09 OI442	Camera, VAST XXT TL1 and VAST XXT TL3, ViScan IIs, CFS[3]

Controller: C99S

[1] Higher firmware versions are required for special software functions.

[2] Use of the DotScan probe requires firmware ≥35.01.

[3] Use of the CFS (chromatic focus sensor) requires firmware ≥24.03.

PRISMO

Current product line

Versions and firmware	Probes
≥36.04 PRISMO ultra with USS 2.0	DotScan, LineScan[2], RDS, VAST XTR gold, VAST XXT, VAST gold, ViScan IIs, VAST gold and ZAS[3]
≥36.04 PRISMO mass with USS 2.0	DotScan, LineScan[2], RDS, VAST XTR gold, VAST XXT, VAST gold, ViScan IIs, VAST gold and ZAS[3]

Controller: C99N

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09 PRISMO (not mass, not ST, not ultra)	VAST gold D1 and D2, VAST XT gold, VAST XTR gold[1], RDS Standard, CAA and select, VAST XXT TL1 and VAST XXT TL3, RST-P, RST-T, Renishaw TP2, TP6, TP20, TP200, ViScan I and II

Versions and firmware	Probes
≥20.09 PRISMO mass (not USS2.0)	VAST gold D1 and D2, VAST XT gold, VAST XTR gold[1)], RDS Standard, CAA and select, VAST XXT TL1 and VAST XXT TL3, RST-P, RST-T, Renishaw TP2, TP6, TP20, TP200, ViScan IIs
≥20.12 PRISMO ultra (not USS2.0)	VAST gold D1 and D2, VAST XT gold, VAST XTR gold[1)], RDS Standard, CAA and select, VAST XXT TL1 and VAST XXT TL3, RST-P, RST-T, Renishaw TP2, TP6, TP200, ViScan IIs
≥36.04 PRISMO upgraded to USS2.0	VAST gold D1 and D2, VAST XT gold, VAST XTR gold, RDS Standard, CAA and select, VAST XXT TL1 and VAST XXT TL3, RST-P, RST-T, Renishaw TP2, TP6, TP200, ViScan IIs, VAST gold and ZAS[3)]

Controller: C99N

[1)]VAST XTR gold on PRISMO (PRISMO access, ACCURA I) requires firmware ≥31.23

[2)] LineScan 1 from WBScan ≥1.11 and mass wiring

[3)] Use of the ZAS requires firmware ≥40.06.

PRO 2

Current product line

Versions and firmware	Probes
≥24.03 PRO 2	TP6, TP20, RST-P

Controller: C99HC

SPECTRUM/ECLIPSE

Current product line

Versions and firmware	Probes
≥23.05 SPECTRUM II	RDS-C-5, VAST XXT, XDT
≥38 SPECTRUM III	RDS-C-5, VAST XXT, XDT

Versions and firmware	Probes
≥38.14 SPECTRUM plus	VAST XXT TL3 direkt or RDS, RDS-C CAA, VAST XT gold

Controller: C99L, C99L2, C99m

Previous product lines & retrofit

Versions and firmware	Probes
≥34.18 SPECTRUM I, ECLIPSE	ST 3, RDS Standard, CAA and Select, VAST XXT TL1 and VAST XXT TL3, XXT Direkt, RST-P, Renishaw TP2, TP6, TP20, TP200, ViScan I and II

Controller: C99N

UMC, UMM, UC, UPMC, ZMC

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09[1] UMC (not UMC1000), UMM (not UMM500 or UMM800), UC, UPMC (not UPMC 1200), ZMC	VAST gold D1 and D2,

Controller: C99N

[1)] CMM with ID wiring ≥31.23.

VISTA

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09 Vista CNC (not Vista Vision), MAN/MOT	Renishaw TP2, TP6, TP20, TP200

Controller: C99N

WMM

Previous product lines & retrofit

Versions and firmware	Probes
≥20.09[1)] WMM, MC, OMC, PMC (not PMC500)	VAST XT gold, VAST XTR gold[2)]

Controller: C99N

[1] CMM with ID wiring ≥31.23.

[1] Use of the VAST XTR gold requires firmware ≥31.23.

XENOS

Current product line

Versions and firmware	Probes
≥33.02 XENOS	VAST gold

Controller: C99N

MZ-1060

Previous product lines & retrofit

Versions and firmware	Controller
MZ 1060 report	MZ1060, MZ1070 MZ2010; MA 1070-2

Interface: RS232

C90/C98

8-bit and 16-bit controllers (e.g. C90, C98) are no longer approved.

Hardware-related functions

Different functions and options in CALYPSO require adaptations or optimization of the system hardware. Furthermore, specific firmware and controller versions are required. These combinations are already covered with the delivery of a CMM with the corresponding CALYPSO software. The system hardware and the entire system have been optimized for the function.

On existing systems, various retrofits are required depending on the model if new hardware-related functions in CALYPSO will be used. If necessary, contact ZEISS and check out the available modernization packages.

NOTE

The technical details about the operation of functions and options must be checked together with ZEISS. All information subject to change. Subject to additional modifications over the course of downstream enhancements.

ZEISS VAST rotary table

Function	ZEISS VAST rotary table
Brief description and benefit	Fast rotary table movement. Measuring time savings: up to -70% repeatability and reproducibility of the measurement results <10% of the tolerance range (for typical characteristics on the air foil) under maximum acceleration and speed.
Software	CALYPSO 7.4 (2022)
Software license	CALYPSO VAST rotary table
Firmware	≥44.08
Controller	C99m
Probe	VAST gold and RT-AB-600-2
CMMs	PRISMO fortis 7/12/7 BE: ≥622916-9853-253 (available with the November 2022 price list)
Other	RT-AB-600-2 from: Matr: 601047-9007-000#04 RT-AB-600-4 from: Matr: 601047-9017-000#02 RT faceplate: 315 mm, 400 mm and 630 mm (required for ZVRA reference triple with three bearing cylinders).

ZEISS VAST rotary table axis

Function	ZEISS VAST rotary table axis
Brief description and benefit	Fast determination of the rotary table axis. Measuring time savings: up to -70%.
Software	CALYPSO 7.4 (2022)
Software license	CALYPSO VAST rotary table axis
Firmware	≥44.08
Controller	C99m
Probe	VAST gold and RT-AB-600-2
CMMs	PRISMO (all CMMs available with the November 2022 price list)
Other	RT-AB-600-2 from: Matr: 601047-9007-000#04 RT-AB-600-4 from: Matr: 601047-9017-000#02 RT faceplate: 315 mm, 400 mm and 630 mm (required for ZVRA reference triple with three bearing cylinders).

ZEISS VAST probing (VAST gold)

Function	ZEISS VAST probing (on VAST gold)
Brief description and benefit	Fast discrete point probing on an active VAST probe. A measurement time reduction of up to approx. 30% can be achieved depending on the task.
Software	CALYPSO 6.6 (2018)
Software license	CALYPSO VAST probing
Firmware	≥37.04 or ≥38.06
Controller	C99 with USS 2.0 wiring
Probe	VAST gold
CMMs	CenterMax or PRISMO (Not for PRISMO 7/9/5 and 7/9/7) with USS 2.0 (newer systems produced since 2018 (PRISMO) and August 2018 (CenterMax) have the same requirements as ROTOS).
Other	VAST gold

ZEISS VAST probing (VAST XXT)

Function	ZEISS VAST probing (on VAST XXT)
Brief description and benefit	Fast discrete point probing on a passive VAST XXT probe. A measurement time reduction of up to approx. 30% can be achieved depending on the task.
Software	CALYPSO 7.2 (2021) For SPECTRUM and SPECTRUM plus from CALYPSO 7.4 (2022)
Software license	CALYPSO VAST probing
Firmware	≥40.19 (DuraMax) ≥41.06 (O-INSPECT CMM version ≥63652X-9932-000) ≥40.20 (O-INSPECT CMM version ≥63652X-9931-002) ≥41.16 (SPECTRUM and SPECTRUM plus)
Controller	C99m, C99L, C99L2
Probe	VAST XXT (TL1 (only for O-INSPECT) and TL3). SPECTRUM and SPECTRUM plus are approved exclusively for TL3 (without RC CAA).
CMMs	DuraMax, O-INSPECT (from CMM version ≥63652X-9931-002), SPECTRUM and SPECTRUM plus.
Other	-

ZEISS ROTOS roughness measurement

Function	ZEISS ROTOS roughness measurement
Brief description and benefit	Roughness Measurements with ROTOS sensor on CMM.
Software	CALYPSO 7.2 (2021)
Software license	CALYPSO roughness
Firmware	≥40.21 (PRISMO) ≥40.21 (CenterMax) ≥41.06 (ACCURA with VAST gold)
Controller	C99 with USS2.0

Function	ZEISS ROTOS roughness measurement
Probe	VAST gold (G) D1
CMMs	CenterMax or PRISMO (Not for active damping on PRISMO) with USS 2.0 500 mm < Z ≤ 1000 mm (newer systems produced since 2018 (PRISMO) and August 2018 (CenterMax) . MMZ upon request. Not compatible with LineScan.
Miscellaneous	-

ZEISS VAST performance (VAST gold)

Function	ZEISS VAST performance (VAST gold)
Brief description and benefit	Faster stylus system change-out and scanning over gaps. A measurement time reduction of up to approx. 50-70% can be achieved depending on the task.
Software	CALYPSO 5.2 with the navigator option.
Software license	CALYPSO VAST (performance)
Firmware	≥30.00
Controller	C99 with PC section ≥VII
Probe	VAST gold D2 or VAST gold D1*
CMMs	CenterMax, PRISMO, GageMax, ACCURA
Other	*only with ZEISS adapter plate and active ID chip

ZEISS ID chip detection (VAST gold)

Function	ZEISS ID chip detection (VAST gold)
Brief description and benefit	The measuring software identifies the stylus system via an ID chip integrated in the ZEISS adapter plate and thus prevents incorrect operation and measurement errors.
Software	CALYPSO 5.8 (2015)
Software license	CALYPSO basic
Firmware	≥30.00

Function	ZEISS ID chip detection (VAST gold)
Controller	C99 with PC section ≥VII
Probe	VAST gold or VAST XT – D1 or D2 models
CMMs	All ZEISS systems with ID wiring (U-types*, CONTURA*, PRISMO, CenterMax, GageMax, ACCURA)
Other	*If ID wiring has been retrofit For all CMMs: only operational with original ZEISS adapter plates and active ID chip.

ZEISS linearization of the illumination on O-INSPECT

Function	Linearization of the illumination on O-INSPECT
Brief description and benefit	Transferability of measurement plans between CMMs largely without adaptation of the light settings.
Software	CALYPSO 7.4 (2022)
Software license	-
Firmware	≥34.11
Controller	C99
Probe	O-INSPECT with Fresnel light rings on 3/2/2, 5/4/3, 8/6/3
CMMs	O-INSPECT with Fresnel light rings From 63652X-9931-001, 63652X-9931-002, 63652X-9932-000, 63652X-9933-000. The illumination linearization can be used from this generation or a service can linearize O-INSPECT on site.
Other	-

Optical distortion correction

Function	Optical distortion correction
Brief description and benefit	Optical distortion correction enables increased accuracy during measurements, particularly outside the center of the image especially at low magnification. Furthermore, this enables an increase in the measuring speed because a larger image field (lower magnification) can be used for the measurement.
Software	CALYPSO 7.4 (2022) and CMM-OS NEO 2.2
Software license	-
Firmware	≥34.11
Controller	C99m
Probe	Discovery Standard 100, Discovery scout 160, Discovery scout 240
CMMs	O-INSPECT 3/2/2, 5/4/3, 8/6/3 (from 63652X-9931-001)
Other	Linearization of the illumination is required.

PC system

Recommended data systems

Component	Designation
Workstation	ENTRY workstation HP Z2 G4 SFF Z2 SFF V2 workstation ZEISS order no.: 614303-9100-010
Operating system	Windows 10 IOT Enterprise 2019 LTSC
Processor	Intel Core i3-10320 3.8 GHz 4C65W
Hard drive	256 GB SSD M.2 HDD 500 GB 7200RPM SATA 3.5 in 2nd
RAM	16 GB (2x8 GB) DDR4 3200 NECC
Graphics card	NVIDIA Quadro P620 2 GB (4)mDP
Pointing device	HP USB 1000 dpi laser mouse
Drive	9.5 mm Slim DVD writer 1st ODD
Interfaces	Intel Ethernet I350-T2 2Port 1 GB China Regulatory CCC Compliance Mark HP 3/3/3 Warranty EURO

Component	Designation
Workstation	PERFORMANCE workstation HP Z4 Z4 V4 SAPSJ workstation ZEISS order no.: 614303-9089-009
Operating system	Windows 10 IOT Enterprise 2019 LTSC
Processor	Intel XeonW-2223 3.6 4C
Hard drive	512 GB SSD M.2 HDD 4 TB 7200 RPM SATA Ent 3.5 2nd
RAM	64 GB (4x16 GB) DDR4 2933 ECC
Graphics card	NVIDIA T1000 4 GB
Pointing device	HP USB optical mouse
Drive	9.5 DVDWR 1st ODD
Interfaces	2x LAN (onboard) GB Ethernet China Regulatory CCC Compliance Mark HP 3/3/3 Warranty EURO

Component	Designation
Workstation	ULTIMATE workstation Z8 V4 S workstation ZEISS order no.: 614303-9091-009
Operating system	Windows 10 IOT Enterprise 2019 LTSC
Processor	2x Intel 5222 Xeon3.8 4C
Hard drive	512 GB SSD M.2 HDD 4 TB 7200 RPM SATA Ent 3.5 2nd
RAM	96 GB (12x8 GB) DDR42933 ECC REG 2CPU
Graphics card	NVIDIA Quadro RTX4000 8GB (4)DP+USBc
Pointing device	HP USB 1000 dpi laser mouse
Drive	9.5 mm Slim SuperMulti DVD-RW 1st ODD
Interfaces	Intel Ethernet I210-T1 PCIe NIC China Regulatory CCC Compliance Mark HP 3/3/3 Warranty EURO

Minimum system requirements

Component	Designation
Operating system	Windows 10 Pro for workstations
Processor	Intel Core i3-8100
RAM	16 GB RAM
Graphics card	OpenGL-compatible graphics card from the NVIDIA Quadro series (minimum 2 GB)
Interfaces	2x LAN (for separate connection to the CMM controller and company network)

Windows system and software requirements

The necessary software requirements will be installed automatically during the installation of CALYPSO if they are not yet available on the target system. For a detailed overview of the software packages included, see Software scope and current modifications.

The release of new software products for Windows 10 is done with the following systems:

– ➢ *Enterprise LTSC/LTSB editions [⇨ 4-21]*

– ➢ *Enterprise and Pro editions [⇨ 4-22]*

Enterprise LTSC/LTSB editions

ZEISS software products are approved and supported for all LTSC/LTSB editions that have not yet reached Microsoft's end-of-regular-support date and will not reach it within one year.

ZEISS products will no longer be approved for Windows 10 versions that only receive extended support from Microsoft or have already exceeded the end date for extended support.

This procedure is required because new technologies are used on new ZEISS products, which must be partially supported by functions of the respective operating systems whose compatibility with older versions of Windows 10 can no longer be guaranteed.

All service packs created during the lifetime of a version of a ZEISS software product are approved for the same Windows 10 versions as the main version.

Different rules can be implemented if, for example, individual Windows versions or critical development components are discontinued prematurely. In these instances, this will be communicated explicitly.

NOTE

Not all features of an update work on all coordinate measuring machines. A CMM might not receive an update if its hardware is not compatible, the latest drivers are not installed or the support from the Original Equipment Manufacturer (OEM) has been discontinued. For more information, please see the Microsoft homepage.

Approval status of the latest Windows 10 versions on the release date of CALYPSO 2021:

Version	Approval status
Windows 10 Enterprise LTSC 2021	Approved
Windows 10 IoT Enterprise LTSC 2021	Approved
Windows 10 Enterprise LTSC 2019	Approved
Windows 10 IoT Enterprise LTSC 2019	Approved
Windows 10 Enterprise 2016 LTSB	Approved
Windows 10 IoT Enterprise 2016 LTSB	Approved
Windows 10 Enterprise 2015 LTSB	Not approved
Windows 10 IoT Enterprise 2015 LTSB	Not approved

Enterprise and Pro editions

ZEISS software products are approved for all Enterprise and Pro versions that have not yet reached Microsoft's end of service for all enterprise and education editions and will not reach it within one year.

All service packs created during the lifetime of a version of a ZEISS software product are approved for the same Windows 10 versions as the main version.

Different rules can be implemented if, for example, individual Windows versions or critical development components are discontinued prematurely. In these instances, this will be communicated explicitly.

NOTE

Not all features of an update work on all coordinate measuring machines. A CMM might not receive an update if its hardware is not compatible, the latest drivers are not installed or the support from the Original Equipment Manufacturer (OEM) has been discontinued. For more information, please see the Microsoft homepage.

Information on the Windows lifecycle can be found under the following link:

https://support.microsoft.com/de-de/help/13853/windows-lifecycle-fact-sheet

Approval status of the latest Windows 10 versions on the release date of CALYPSO 2021:

Version	Approval status
Win10, 21H2	Approved
Win10, 21H1	Approved
Win10, 20H2	Approved
Win10, 2004	Approved
Win10, 1909	Approved
Win10, 1903	Approved
Win10, 1809 and older	Not approved

Software compatibility

CALYPSO is a single-user application. It cannot be installed in a network and not be run as a client-server application.

GEAR PRO

The use of CALYPSO 2021 and GEAR PRO is possible with GEAR PRO 2020 (6.4.0200 Service Pack 1) and higher versions.

FACS

The FACS automation interface is tailored to each customer's needs and may be affected by the changed directory structure. Before operating CALYPSO 2021 with your FACS application, you should first contact our support team.

NON-Zeiss Device Interfaces

As of the present CALYPSO version, the following third-party systems are supported:

Articulated arms

Optical sensors are not supported

- Faro articulated arm (without Faro Gage)
- Cimcore articulated arm
- Romer articulated arm
- Tomelleri articulated arm

Laser trackers

- Faro laser tracker
- Leica laser tracker (without AT930, without AT960)

  Use of the Emscon interface for the Leica LT403 laser tracker is no longer supported. It is recommended that you switch to the LMF interface.
- API laser tracker from T3 (without Omnitrac 2)

Controllers

Optical and scanning sensors are not supported

- Mitutoyo CMMC-J
- Mitutoyo UC100
- Mitutoyo UC200
- Mitutoyo UC220

For questions regarding the support of other third-party systems:

Please contact retrofit.metrology.de@zeiss.com.

Measuring counters

The following counters are supported by CALYPSO 2021 MAN:

Controller	Protocol	Interface	Probe
MZ 1060 MZ 1070 MZ 2010	MZ 1060	RS 232	**MIH probe carriers:** TP2, TP6

CAD interfaces

The following CAD interfaces are supported:

CAD software	Version
3DEXPERIENCE (CATIA V6)	Up to V6 R2022x[1)]
CATIA V5	V5 R8 – V5–6 R2022
CATIA V4	4.1.9 – 4.2.4
Siemens NX	11 – NX 2206
Parasolid	9.0 – 34.0.153
Creo Parametric	16 – Creo 9.0
SolidEdge	V18 – SE2022
SolidWorks	98 – 2022
Inventor	V11 – 2023

CAD formats	Version
DXF	2.5 - 2023[2)]
IGES	Up to 5.3
JT Open	JT 8.x, 9.x, 10, 10.1, 10.2, 10.3, 10.5, 10.6
STEP	AP203, AP214, AP242
VDA-FS	1.0 – 2.0
QIF	3.0

[1)] 3DEXPERIENCE (CATIA V6) users should export their database objects as CATIA V5 CATParts or CATProducts. They can then be imported into CALYPSO.

[2)] If units of length are not specified in the DXF file, the assumed unit of length will be inches.

PMI compatibility

CAD software	Version
Creo Parametric	3.0 – 9.0
Siemens NX	8.0 – 2206
SolidWorks	2014 – 2022
CATIA V5	V5 R8 – V5–6 R2022

CAD formats	Version
STEP	AP242
QIF	3.0

NOTE

It is recommended that you disable the PMI functionality for the import of unsupported CAD models.

The use of the latest service packs for the CAD software is recommended.

NOTE

With Creo Parametric, PMI can only be imported from parts, not from assemblies.

With Creo Parametric models, PMI is only imported from the active view.

Compatibility of measurement runs and measurement plans

Compatibility – measurement plans and programs – exclusion of warranty

The licensor (Carl Zeiss Industrielle Messtechnik GmbH) will neither warrant nor guarantee functionality for measurement plans or programs created by third-party suppliers or by the licensee/customer or that such measurement plans or programs will run error free on the licencor's software or systems respectively. The licensor excludes any form of warranty or guarantee regarding measurement plans and programs supplied by a third party, especially upon implementation of software upgrades or new program versions.

In particular, the licensor emphasizes the resulting possibility of lack or alteration of performance relating to measurement plans should one or more of the following points apply:

- Changed computer operating system between software revisions
- Essential alterations to calculation algorithms
- Debugging and troubleshooting
- Changed dependencies between software options
- Improper programming of measurement plans
- Influence of software programs or modules not provided by the licensor

Simulation – supplement to the user guide

CALYPSO supports the following CMMs in the simulation:

ACCURA	1600 2400 1400
	1600 3000 1400
ACCURA II	1200 1800 1000
	1200 2400 1000
	1200 2400 800
	1200 3000 1000
	1200 4200 1000
	1600 2400 1000
	1600 2400 1500
	1600 3000 1500
	1600 4200 1500
	2000 2400 1500
	2000 3000 1000
	2000 3000 1500
	2000 4200 1000
	2000 4200 1500
	900 1400 800
	900 1600 800
	900 1800 800
	900 1200 800
CARMET 2	6000 1600 2500
CenterMax	CenterMax
CONTURA G2	1000 1200 600
	1000 1600 600
	1000 2100 600
	700 1000 600
	700 700 600
DuraMax	DuraMax

GageMax	GageMax
MICURA	500 500 500
MMZ B	5000 16000 2500
MMZ 1	2000 7000 1800
MMZ G	2000 5000 2000
	2500 5000 2000
	3000 4000 1600
	3000 6000 2000
	3000 8000 2500
MMZ M	3000 4500 1600
	3000 4500 2000
MMZ T	2100 3200 1200
PRISMO	1600 2400 1000
	1200 1800 1000
	1200 3000 1000
	1200 4200 1000
	700 900 500
	900 1200 700
	900 1500 700
	900 1800 700
PRISMO fortis With U-shaped granite base plate	1200 1800 1000
PRISMO ultra	1200 2400 1000
PRO	3000 1600 2100
	6000 1600 2100
SVA	1000 1500 800
	1200 2000 1000

	850 1000 600
SVA Fusion	1000 1500 800
	1200 2000 1000
	850 1000 600

5 Software downloads

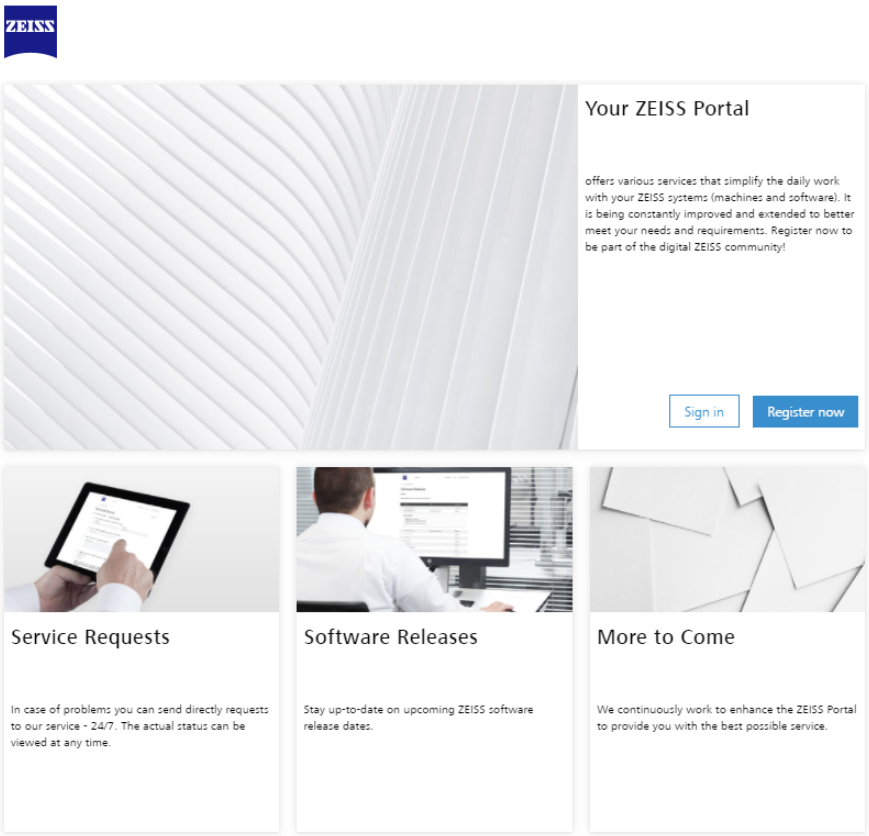
This chapter contains:

Software Downloads

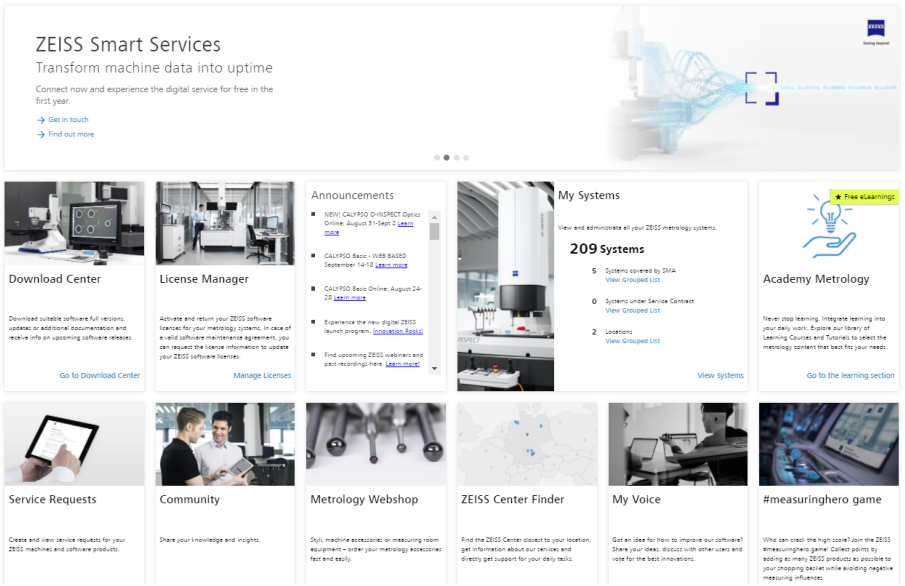
The latest service packs and full versions can be downloaded from the ZEISS portal.

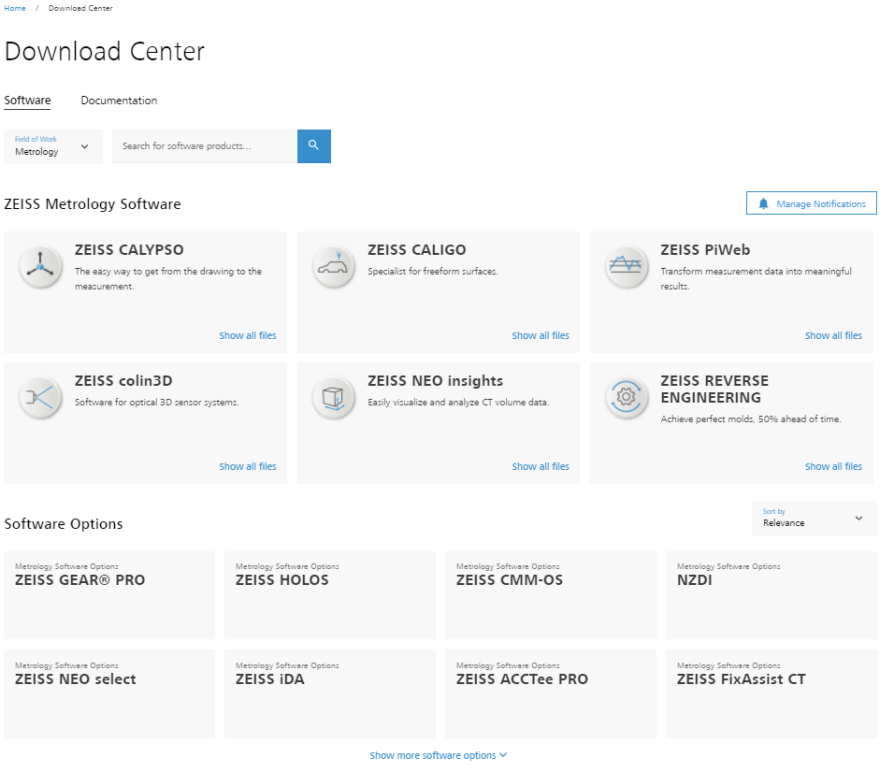
To register and access the ZEISS Portal, use the following link:

https://portal.zeiss.com/



Welcome to your ZEISS Portal.





6 Videos and training material

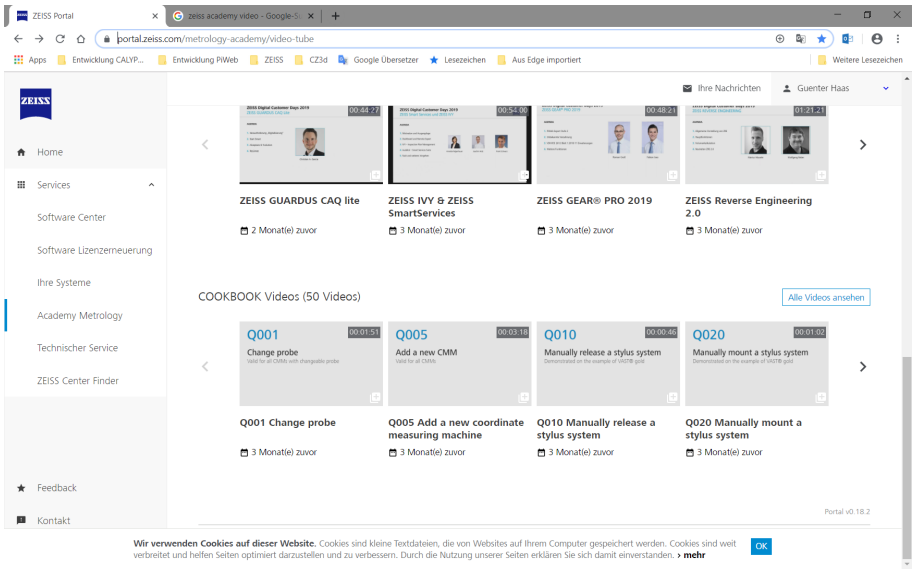
This chapter contains:

Videos and training material in the ZEISS Portal

Videos and training material can be purchased via the ZEISS Portal.

Use the following link to access the ZEISS Portal:

https://portal.zeiss.com/metrology-academy/video-tube



7

Contact

This chapter contains:

Contact

If you have any questions, ideas or problems regarding CALYPSO, please always use the integrated CALYPSO error report to contact us. To open the form in CALYPSO, select Error report from the Extras menu in CALYPSO. You can enter any text that describes your request in the Comment field.

Use the dropdown menu in the error report to save the report (to forward it by email). Our email address and phone number are also given in the report.

For Germany

Carl Zeiss Industrielle Messtechnik GmbH

SES-AH Software Support

73446 Oberkochen, Germany

Phone: +49 (0) 7364/ 20-6337

Email: calypso-support.metrology.de@zeiss.com

www.zeiss.de/messtechnik

For USA

Carl Zeiss IMT Corp.

Software Support

Novi, MI 48377

Phone: 1 (800) 327-9735

Fax: 1 (248) 624-1258 or 1 (763) 535-9792

Email: cic.metrology.us@zeiss.com

www.zeiss.com

ZEISS Metrology Community – latest information about measuring software under Windows

For the latest information about measuring software under Windows, use the following link:

ZEISS Metrology Community

With login and password, you can access the community for the latest tips and tricks.