

Calypso



Release-Info



Documentation on Release 4.8

Release Info - Calypso 4.8

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1 About Calypso 4.8

1.1 Notes on the Application and Familiar Problems

Please read the following notes before installing this software!

1.1.1 Important information:

-The optical sensor '**ViScan**' is **not** supported with Calypso 4.8!

-Installed Calypso files must not be manipulated! By renaming or removing files that are installed in the Calypso folder (including installed user data!), you can cause malfunction of your application. By doing so the Windows Installer autorepair function might be launched unsuccessfully. Inserting program files manually (via Windows Explorer) can also cause faulty operation.

-Installed Calypso ServicePacks are **no longer listed** in the 'Add or Remove Programs' (**ARP**) list.

-If *GhostScript* is used to display plot results in .pdf format, version 8.56 or newer is required for error free application.

-Earlier Calypso versions must be **removed** from your computer prior to installing Calypso 4.8.

-Installing Calypso Release 4.8 will also upgrade the **Zeiss License Manager** to version 1.6.0.0. This is carried out automatically, as long as the Zeiss License Manager does not yet exist on your computer or an older version than 1.6.0.0 is already installed.

-Stylus Data Import: Styli data exported with version **4.4.04.xx** from systems with Zeiss or Renishaw index head (e.g. RDS, DSE, MIH, PH9 and PH10) may not be imported into newer versions! The useability of **imported styli** when used on a CMM is different than usage in simulation mode (without CMM). For use on a CMM re-qualification is required, in simulation the styli can be used without re-qualifying.

-Interrupting a CNC-qualification of a VAST-XXT, will result in **undefined probe data!** In this case the stylus **must** be re-qualified **manually completely** before using it for measurement or re-running the CNC-qualification. Please use "Qualify passive stylus", the selection "Geometry Re-qualification" is not sufficient.

-Special characters must not be used in **stylus names** and **stylus system names!** Under no circumstances may apostrophes (' ') or quotation marks (" ") be used in names for styli or stylus systems nor may these names begin with a special character (e.g. Ø) or end with a dot! Underscores ('_') may be used as separators.

-Stylus systems which were last used with the **Calypso release 4.0.xx.xxProDC** or the **CMM-OS release 3.0.xx.xxProDC** must be completely re-qualified.

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1.1.2 Notes on the Application from Calypso 4.8 onwards:

-The **Sample Measurement Plans** are installed in a single compressed file '**inspections.exe**' under Calypso\home\om\workarea\inspections. To use these measurement plans, the contents must be unzipped by double-clicking the file. Adapt the installation path if necessary.

-The **Service and Acceptance Measurement Plans** are installed in a single compressed file '**service_plans.exe**' under Calypso\home\om\workarea\service. To use these measurement plans, the contents must be unzipped by double-clicking the file. Adapt the installation path if necessary.

-**Familiar problem:** Measuring a **Helix using the Navigator Option** can cause an error. This will be fixed via ServicePack.

-**Familiar problem:** The **User Attributes in Table files** are stored in the wrong column. This will be fixed via ServicePack.

-**Familiar problem:** The last probing cannot be deleted with the **f3-key** on the control panel during **manual measurement**. This will be fixed via ServicePack.

-**Familiar problem: Automatic stylus checking during CNC-Start:** The setting for a single plan overwrites the global setting. This will be fixed via ServicePack.

-**Familiar problem:** The "**Slow through first feature**" setting for CNC-Start does not work if the automatic navigation in between features is de-activated. This will be fixed via ServicePack.

-**Familiar problem:** The "**Parallel mode**" setting for CNC-Start (Navigator Option only) can cause an error. This will be fixed via ServicePack.

1.1.3 Notes on the Application from Calypso 4.6 onwards:

-The distribution of points in **slot features** has changed in Calypso 4.6. Now the same logic as for circles is used. Should an evaluation of a slot feature not be possible using an odd number of probings, an additional probing point should be added in order to have an even number of probing points.

1.1.4 Notes on the Application from Calypso 4.4.04 onwards:

-Application of the **multiple-strategy** function in new measurement plans created with Calypso 4.4.04 (or newer) or existing measurement plans which are opened and saved will **no longer run on versions of Calypso older than 4.4.04!**

-A software enhancement has been introduced for **coordinate measuring machines equipped with articulating probes** (e.g. RDS, DSE, MIH, PH9 and PH10:

This enables the usage of **all tactile probes for the MasterProbe**. Also, the **length of the MasterProbe** is no longer fixed and can be selected according to the application.

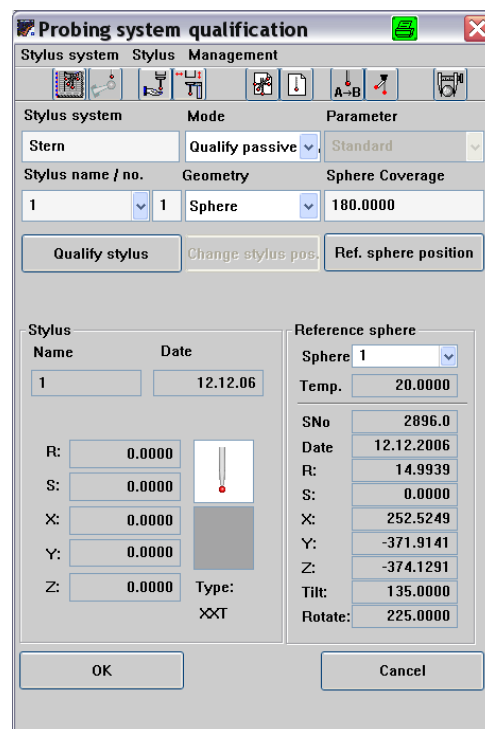
The definition of the **RDS probe holders** has been simplified.

With the RDSCAA or DSECAA option, **side styli** can now also be **qualified semi-automatically** (except for XXT sensors!).

However as a result, on **CMMs with articulating probes** after a software update to **Calypso 4.4.04** or newer, all the styli have to be subsequently **completely** re-qualified! If you are using the **RDSCAA or DSECAA** option, it is imperative that the MasterProbe can be used for the qualification of the fitting position. Passive sensors such as XXT and SP25 cannot be used for this.

To facilitate this, the **List Qualification** can be used. The procedure is described on the following pages.

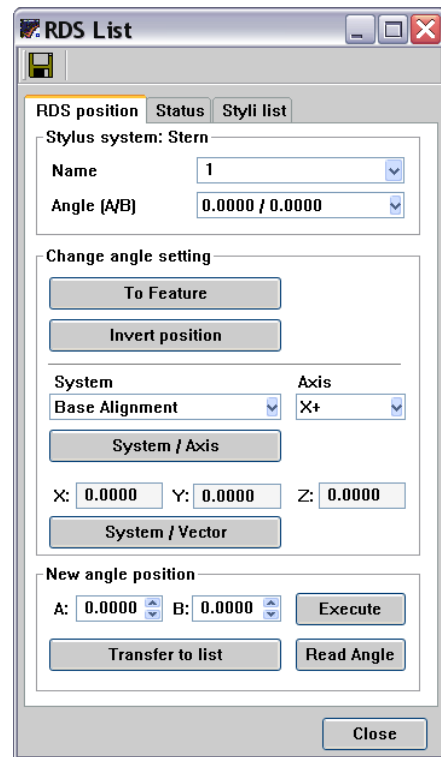
List Qualification:



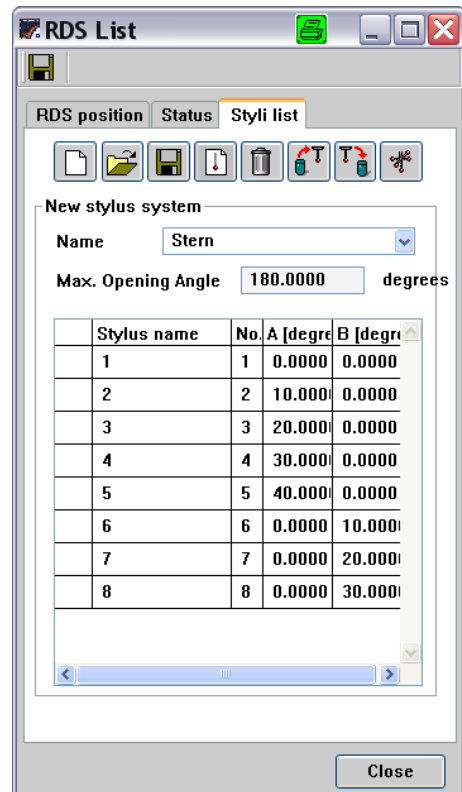
1. Open the 'Probing system qualification' window:

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2. By clicking on the icon, the dialog for setting the RDS axis is opened.



3. Select the 'Styli list' tab:



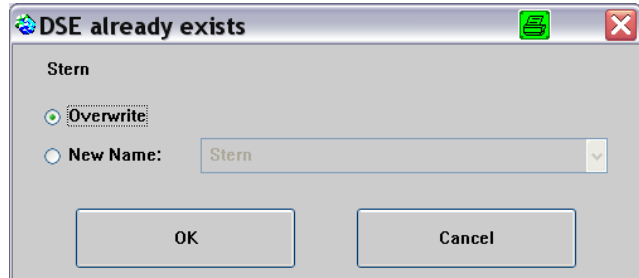
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4. By clicking on the




icon, the message displayed on the right will appear.

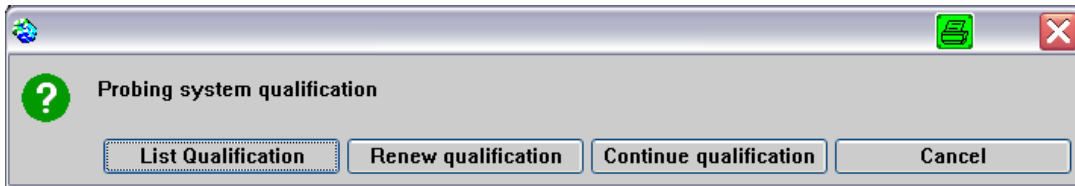
Select 'Overwrite' and click 'OK'.



5. Close the window for setting the RDS axis with 'Close' and in the 'Probe system qualification' window

start the List Qualification using the  icon.

6. In the following dialog, please select 'List Qualification':



You are prompted to set the index holder to the angle A 0°B 0°.

You are then prompted to make a probing at this angle position. This process also takes place if you have not defined a stylus in the angle position 0°. Using this position, the lengths of all the other styli in this stylus system are calculated and automatically qualified.

1.1.5 Notes on the Application from Calypso 4.4 onwards:

-Existing measurement plans containing **sphere features with circular sections** should be checked for the correct **start angle!**

-The given default value for the distance to the magazine during **Stylus system changing of XXT and SP25** (for probe without stylus system) has been increased from 0 mm to 70 mm. All holders which are created new for XXT and SP25 are now preassigned with 70 mm. This can be adapted subsequently for each holder by the 'Master' user.

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1.2 Contents of the CD and latest changes

Contents of the CD:	Calypso ServicePack 4.8.06
Default Languages:	German, English, French, Italian
Additional Languages:	Czech, Spanish, Swedish, Portugese, Finnish, Dutch
Instruction manuals:	German, English, French, Italian

Latest changes:

4.8.06	27.03.2009 Release
4.8.05.12 10970 10969 10916	25.03.2009 CAD model handling in Inch mode corrected. Delete probing points from strategy window enabled. EagleEye C-axis rotation corrected.
4.8.05.11	24.03.2009 Enhanced Stylus System Creator.
4.8.05.10	16.03.2009 Bugfix in CAD.
4.8.05.09 10737, 10873, 10919, 10924 10875	11.03.2009 Bugfix for 'CNC' – 'Parameter' function. Collision following stylus system change resolved.
4.8.05.08 10914	06.03.2009 Bugfix for CMM-OS "Rotate to new position". Optimized Stylus System Creator with new Renishaw probe.
4.8.05.07 10754 10773 10841 10856, 10858	19.02.2009 AutoRun with different CAD-models corrected. Simulation with collision observation corrected. Selection of a face in wireframe mode corrected. Read in of dxf files corrected.
4.8.05.06	17.02.2009 Bugfix for RC-CAA with XXT Side Stylus.
4.8.05.05 10790 10845	11.02.2009 New version of Stylus System Creator. Bugfix for home position travel.

4.8.05.04 10758	05.02.2009 Optimized EagleEye probechange.
4.8.05.03 10769	02.02.2009 Update and save functions for macros corrected.
4.8.05.02 10716	19.01.2009 Improved mirror function for base alignment with rotated X and Y Axes.
4.8.05.01 10687, 10703 10482 10684 10728 10750	09.01.2009 Bugfix for saving point clouds. Bugfix CAD section plane. Bugfix CAD profile elements Plane feature as Ref 1 for concentricity evaluation enabled. Base system match using features inside true position enabled.
4.8.04	09.01.2009 Release
4.8.03.04 10270 10326 10350 10376 10459 10538 10647, 10648 10658 10698 10707 10714 10725	04.12.2008 Display of Blade-elements corrected. Circle measurement with overlapping parts corrected. Measurement with 3 rd party device corrected. Import of PRB-Files corrected. Color of styli with generic elements corrected. Bugfix for filtered curve. New version of Stylus System Creator. Bugfix for service measurement plan. Function Outlier-elimination corrected. Bugfix in slope calculation. Bugfix in measurement-plan with patterns. Bugfix in merge files, when MS Excel is also activated.
4.8.03.03 10701 10705	01.12.2008 Stylus creation for 3 rd party devices corrected. Display of window "reference travel" corrected.
4.8.03.02 10663 10468, 10410, 10680	24.11.2008 'Memory overflow' corrected with too many printout windows. Copy (paintbrush) for Curve feature enabled.
4.8.03.01 10589 9867 10502 10463	06.11.2008 Multiple runout plot corrected. Warning for undefined RT-Axis corrected. Compact printout sorted by list of characteristics enabled. Corrected mirror function for measurement plans.
4.8.02	05.11.2008 Release
4.8.01.11 10612	29.10.2008 Reset improved for MasterProbe.

10613, 10626 Bugfix for Stylus System Creator.

4.8.01.10 **23.10.2008**
10460 Additional styli for XXT optimized.
10517 Metrotom: Nom-Act comparison corrected.
10511, 9506, 10456 CAD bugfixes.

4.8.01.09 **17.10.2008**
Vector direction for unknown contour in CNC-mode corrected.

4.8.01.08 **09.10.2008**
PCM corrected for AutoRun.

4.8.01.07 **01.10.2008**
Bugfix Curve feature.

4.8.01.06 **23.09.2008**
10429: Create polyline from single points enabled.

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2 New Features in 4.8

2.1 New Features – Measurement Method

2.1.1 New Function 'Keep Position' for Alignment Selection

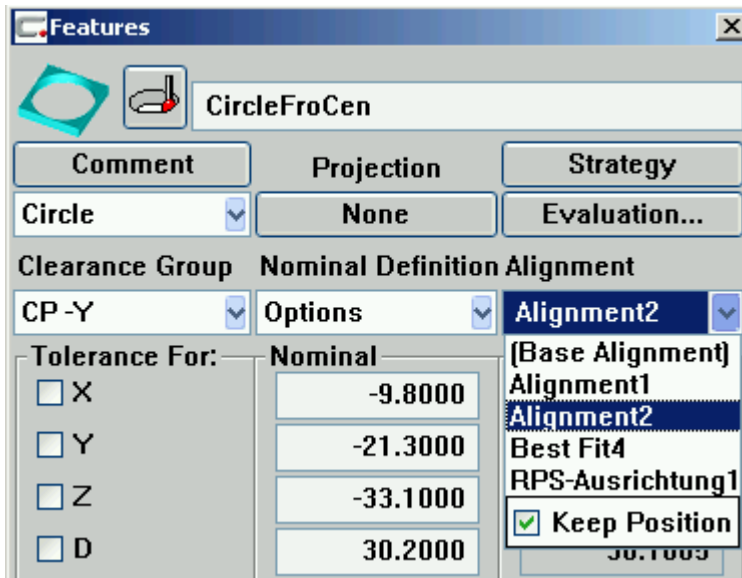
C48_13

Application:

With the 'Keep Position' function, programming of **recurring feature groups** can be **simplified**, for example, if these refer to different alignments but have the same coordinates. A group of features that has already been measured can then be copied and referred to its own alignment without the coordinates of the features being adapted automatically.

Call:

In the **Features** dialog select 'Keep Position' when selecting a new alignment:



The 'Keep Position' function can also be found in the **Pitch Dialog** as well as in the dialog for the **Copy Properties** function.

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2.1.2 Function Enhancement in the 'Circle on Cone' and 'Cone' Feature

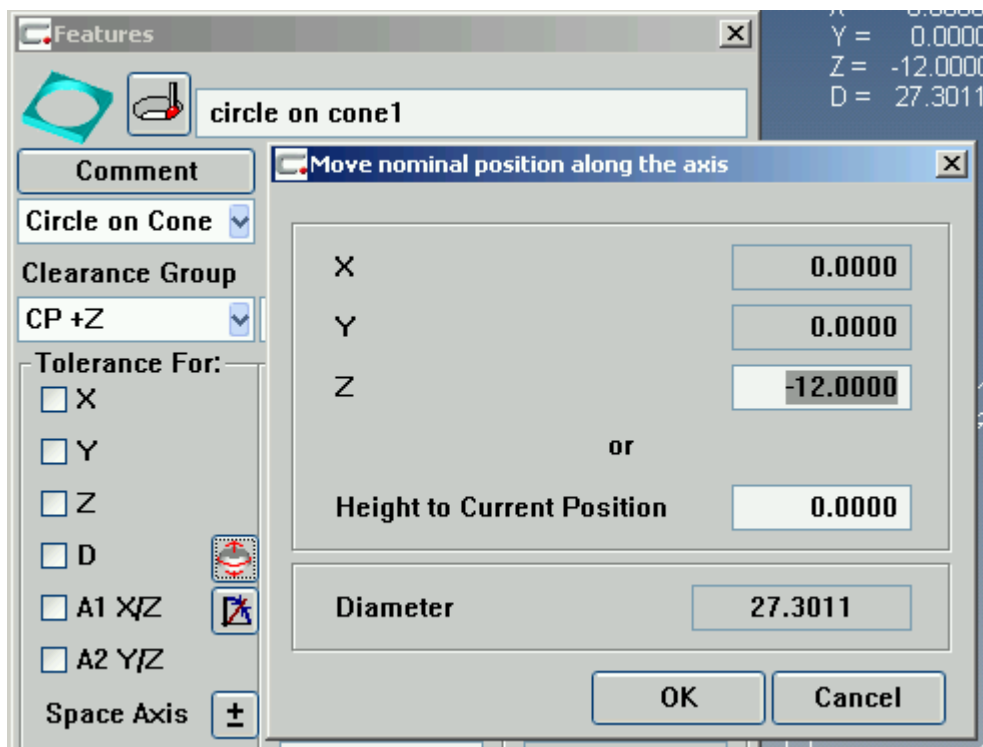
C48_2

Application:

With this enhancement, the nominal position or the section height in the 'Cone' or 'Circle on Cone' feature can be changed by the user as he likes. The corresponding diameter is adapted automatically. This facilitates the measurement of conical parts.

Call:

The dialog for changing the position or the height is opened using the new icon: 



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2.1.3 New Characteristic 'Geometry Best Fit'

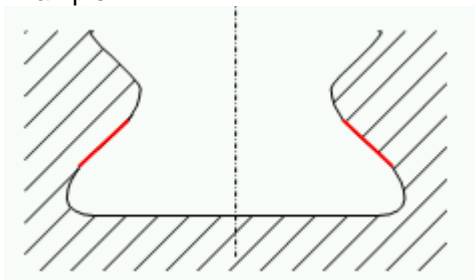
C48_38

Application:

If a common best fit of several features is required for a measurement, you can use the 'Geometry Best Fit' function. This method is used for example when checking the joining surfaces of turbine blades and turbine wheels

The features are best fitted to the respective nominal geometry. The result is one alignment.

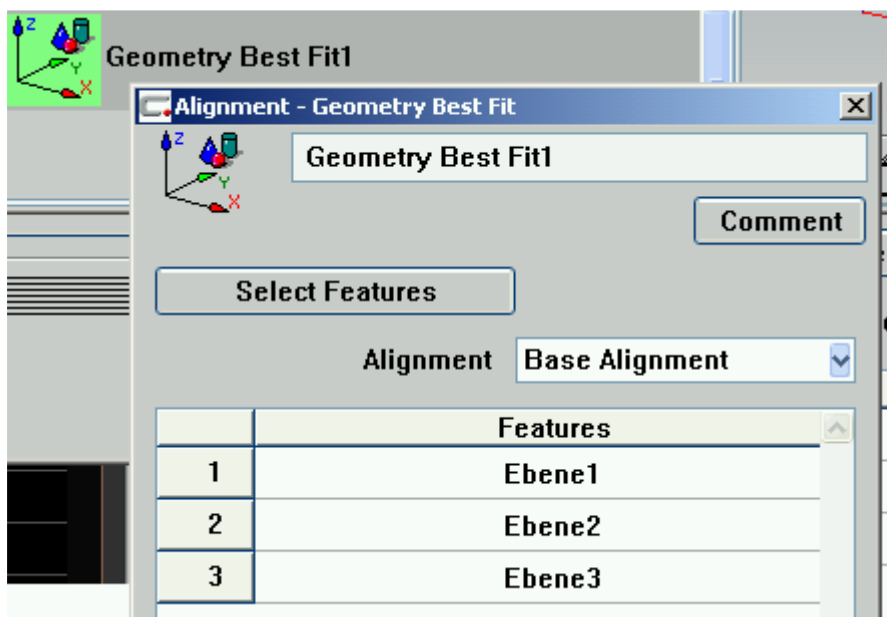
Example:



The areas marked red are functional surfaces.

Call:

Using the menu 'Resources', 'Utilities' 'Geometry Best Fit' a characteristic is created in which the dialog for selecting the feature can be called.



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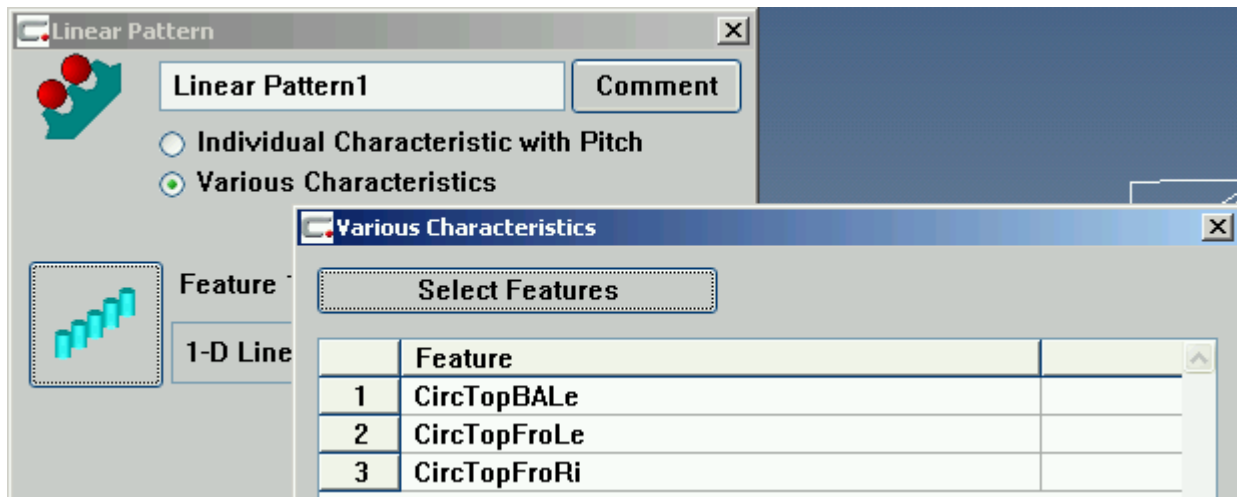
2.1.4 Selection of Several Features for the Circular and Linear Pitch C48_42

Application:

This enhancement allows you to use several **different features** (e.g. boreholes with different diameters) when evaluating a linear or circular pitch. Therefore a specific feature no longer has to be given a pitch before the pitch evaluation.

Call:

In the Pattern dialog, the user can select between the previous method (Individual Characteristic with Pitch) or the new method (Various Characteristics) where there is the option of selecting the feature required.



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2.1.5 Alignment Line for the Circle in Contour Best Fit

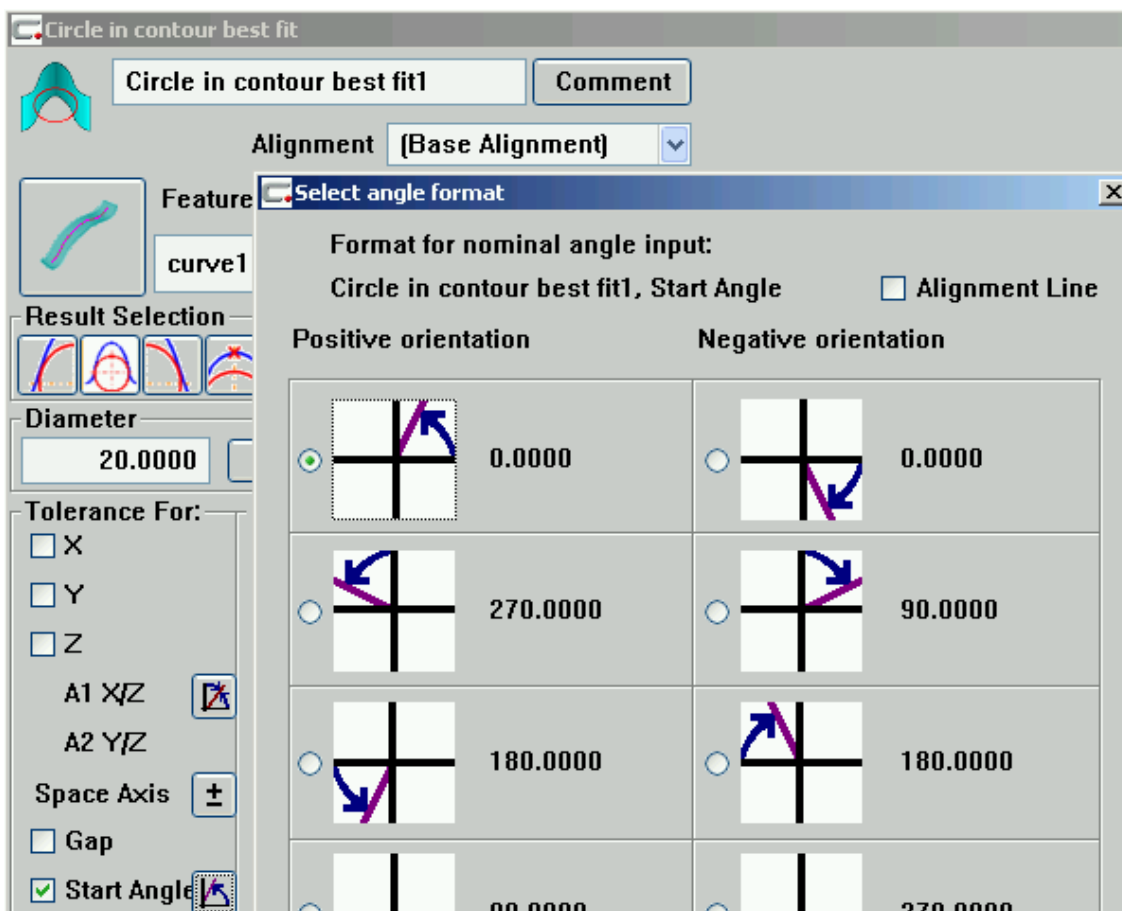
C48_43

Application:

In previous software versions, for the circle best fit in contour, the contact angles referred to the alignment of the feature. With Calypso 4.8, it is possible to refer the contact angles to the connecting line ('Alignment line') from the origin of this alignment to the center point of the best fitted circle (projected onto the circle plane). The term 'alignment line' was coined in UMESS in the Function DI 1168 and has also been adopted in Calypso.

Call:

'Start Angle' is selected in the 'Circle in Contour Best Fit' dialog. The alternative reference can be selected in the window for the angle format (start and end angle). Other angles (e.g. the angle for polar coordinates) or other constructions or features do not have this option.



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2.1.6 Special Program – Interface to External Evaluation Programs

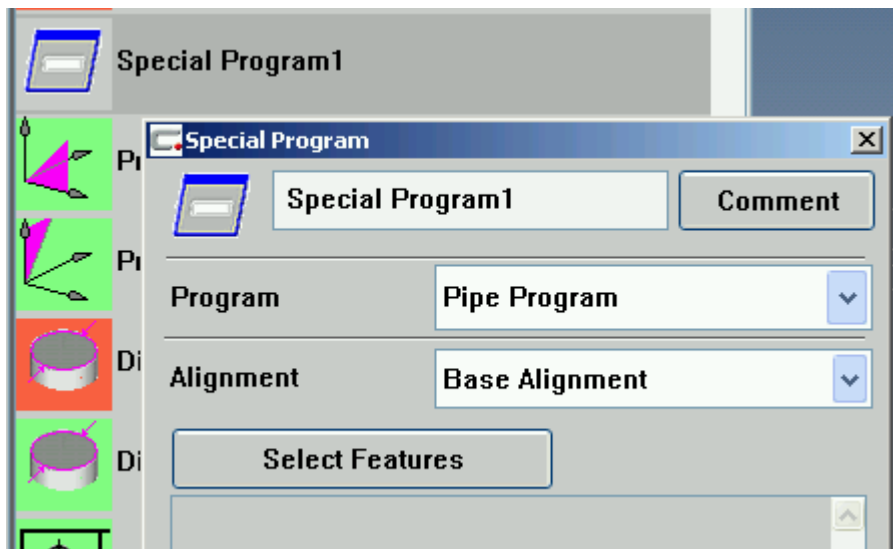
C48_6

Application:

The special program offers an interface to external software packages and enables **additional evaluations in an external program** within a Calypso measurement plan but a subsequent common printout of all results in Calypso.

Call:

Using the menu 'Size', ,More', 'Special Program'.



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2.1.7 New CNC Function – Repeat Measurement

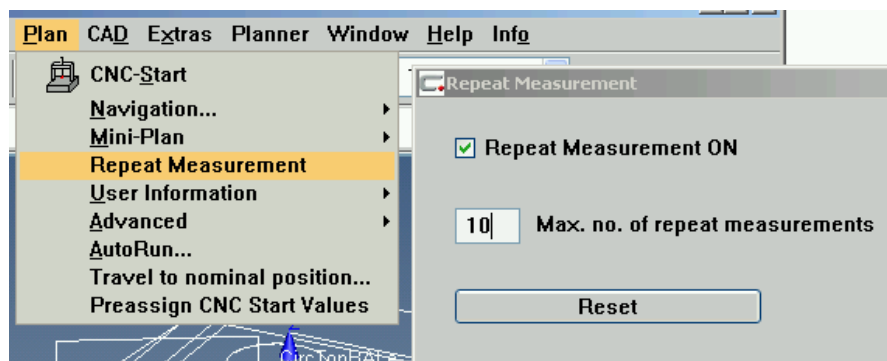
CS-90

Application:

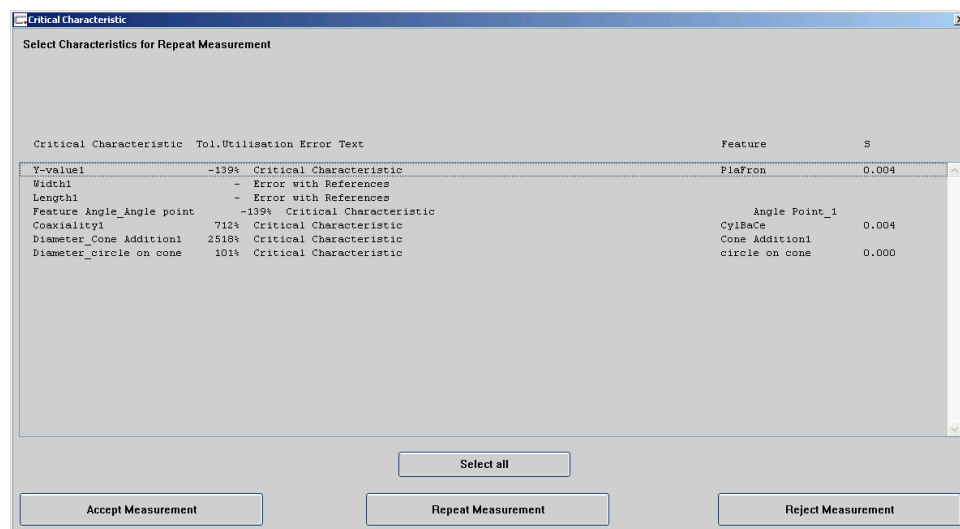
If it is found that tolerances for individual characteristics have been exceeded after the CNC measurement has finished, the user can start a repeat measurement if he suspects a faulty measurement caused by external influences such as dirt, shavings or vibrations. Only those characteristics which were out of tolerance are measured again. The results of the new measurement are then output together with the other results of the original measurement.

Call:

The repeat measurement is activated using the 'Plan', Repeat Measurement' menu.



Measurements which are found to be out of tolerance are listed in a dialog after the measurement and can then be selected for repeat measurement.



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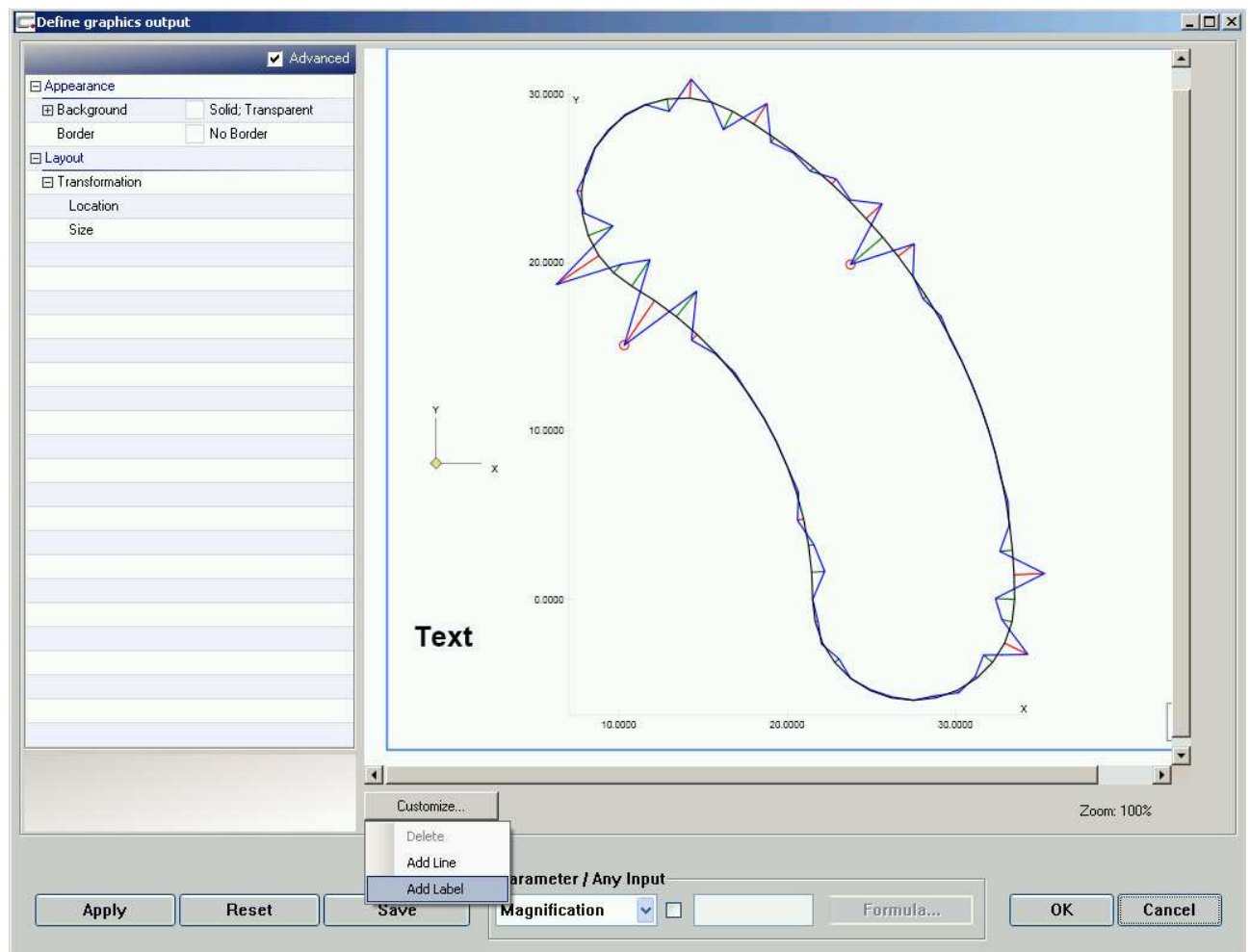
2.2 New Features – Evaluation and Result

2.2.1 Zeiss Reporting: User-defined Layout of the Graphics Output

C48_26

Application:

The user can adapt the layout of the graphics output with Zeiss Reporting as he likes by adding text fields, geometric features and measurement results.



Call:

In the 'Define graphics output' dialog, click 'Customize...' and select the desired function.

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2.2.2 PiWeb Interface

C48_41

Application:

Once the CNC measurement has been made, the measurement results can be transferred to PiWeb for **further evaluation**. You will find more information on PiWeb under www.zeiss-izm.de.



Call:

Select PiWeb before the measurement with 'On' or 'Select at CNC Start' using the 'Resources', 'Results to File' menu.



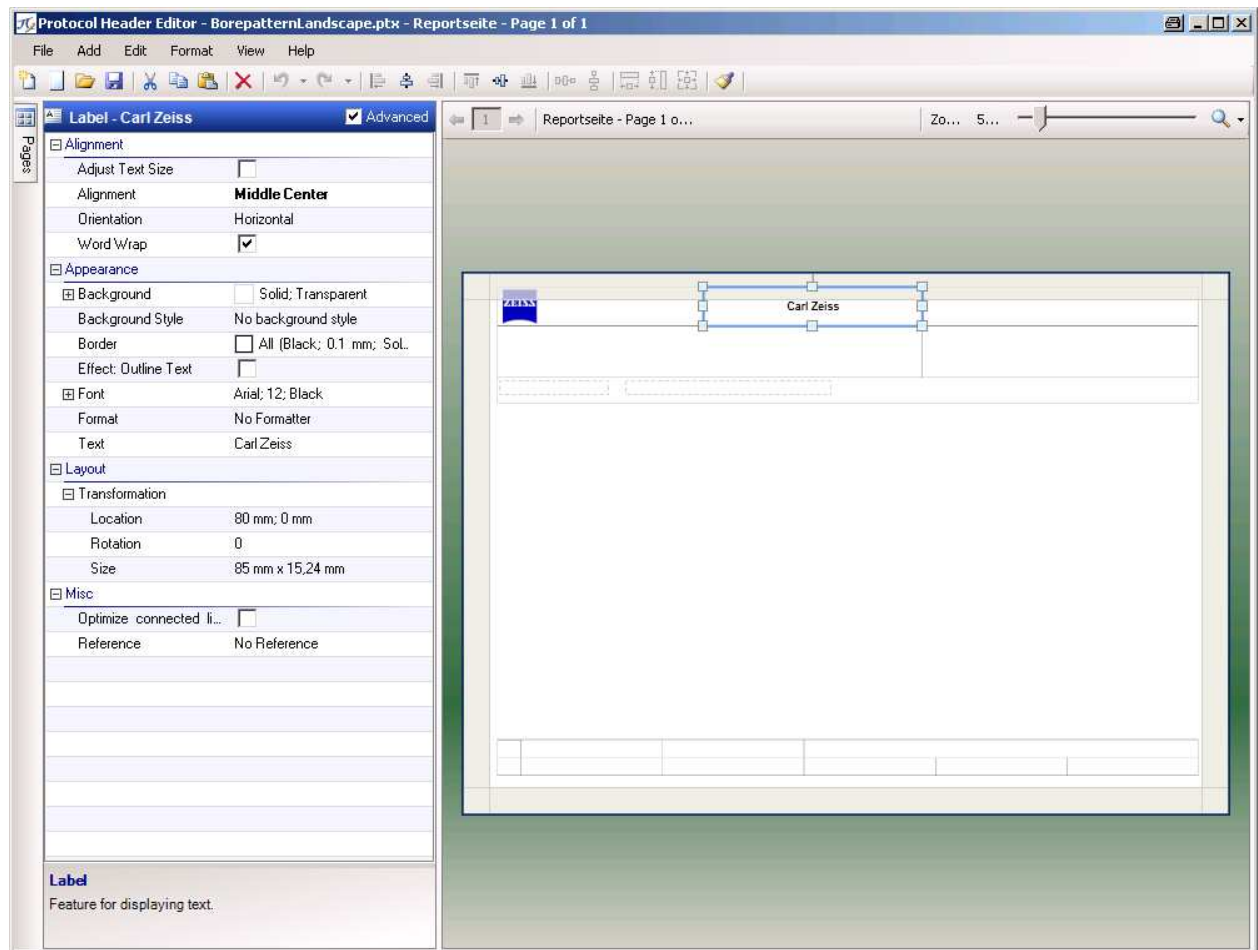
More settings for the transfer are defined using 'Configuration'.

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2.2.3 Zeiss Reporting: Printout Header Editor for the Graphics OutputC48_44

Application:

The printout headers for the graphics output templates can be adapted with this new function, so you can include your own company name or logo for example.



Call:

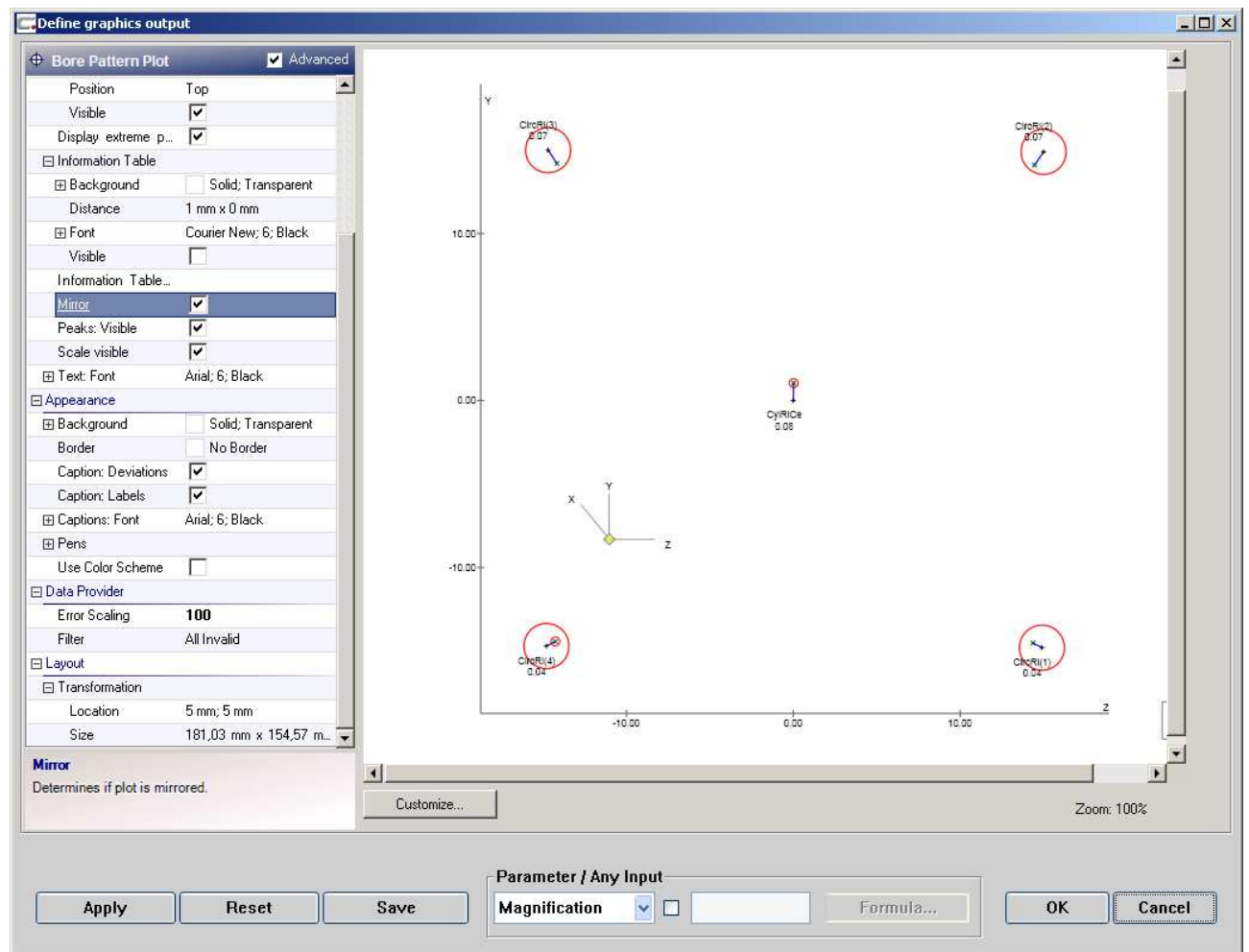
The printout editor is started using the menu 'Resources', 'Design Custom Printout', 'Printout Header Editor for Graphics Feature...', the desired .ptx template file should then be opened and can be edited.

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2.2.4 Zeiss Reporting: Exchanging the Axes in the Graphics Output for the Bore Pattern

Application:

As in the curve plot, the data in the bore pattern plot can be displayed “mirrored”. This can contribute to a clearer visualization when comparing with the real part.



Call:

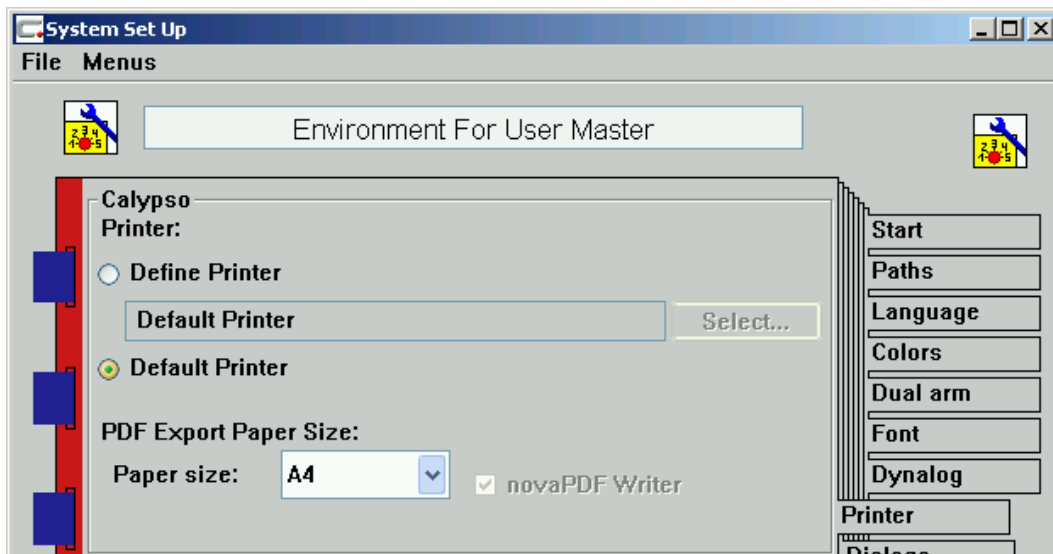
In the 'Define graphics output' select the view of the bore pattern desired in the 'Mirror' field.

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2.2.5 New 'novaPDF' PDF Printer integrated in Calypso

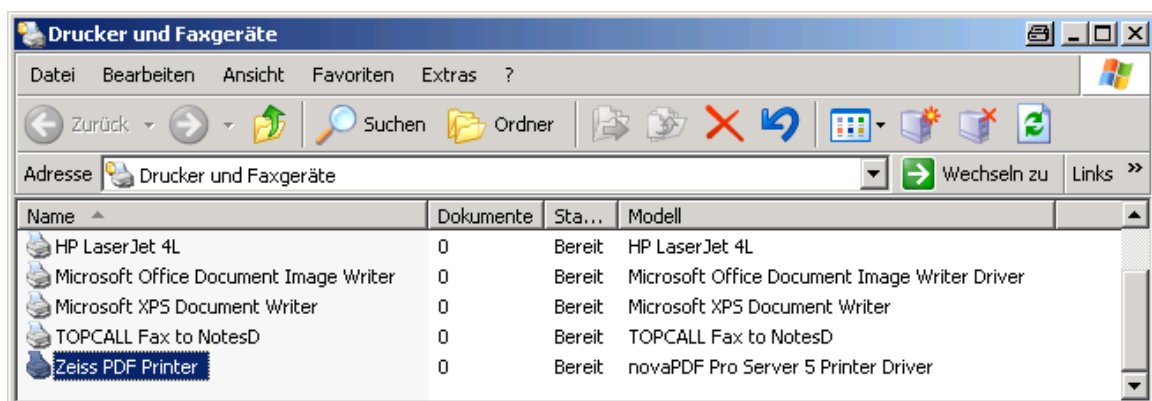
Application:

novaPDF is included automatically in Calypso 4.8. This software option enables printouts and graphic outputs to be saved and output in .pdf format. You now no longer have to buy corresponding software from a third party to do this.



Call:

novaPDF is installed automatically together with Calypso. The application is listed as 'Zeiss PDF printer' in the printer list.



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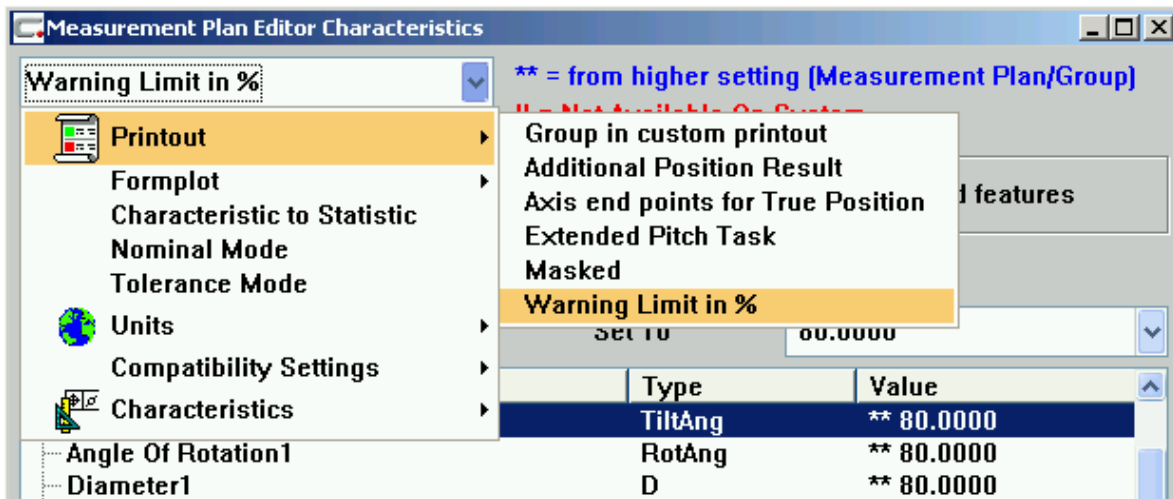
2.2.6 Selecting Warning Limits for Characteristics and Features Individually PR-79

Application:

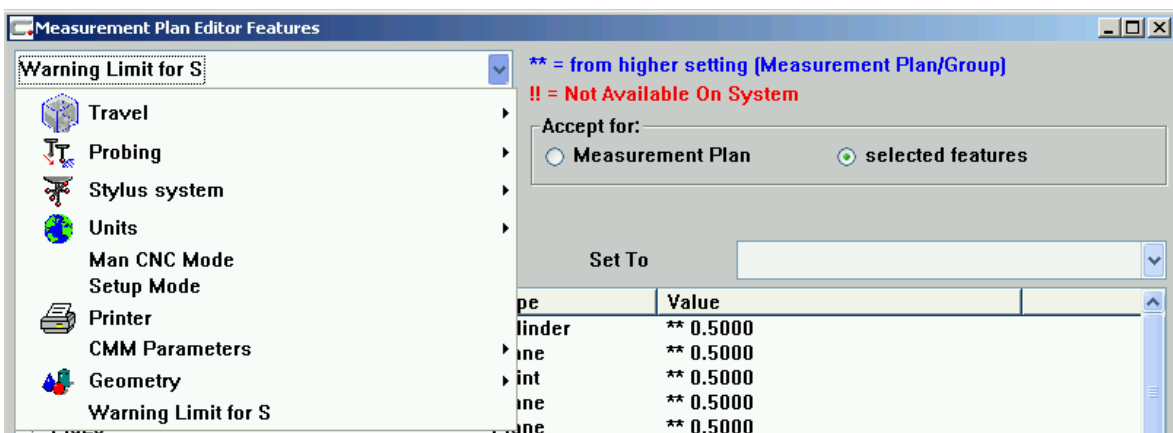
The warning limits for the color coding in the custom printout (green / yellow / red) can now be entered separately for each characteristic and for each feature.

Call:

Input of the individual values for the warning limits for the characteristics is made in the Measurement Plan Editor Characteristics after selecting the option "Warning Limit in %" in the "Printout" submenu. The warning limit is output as a percentage of the tolerance utilization.



The input of the individual values for the warning limits for the features is made in the Measurement Plan Editor Features after selecting the option "Warning limit for S". The warning limit is given as scalar. To determine when this limit is exceeded, it is compared with the standard deviation S.



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2.2.7 New Output in Custom Printout – ‘Overall Result’

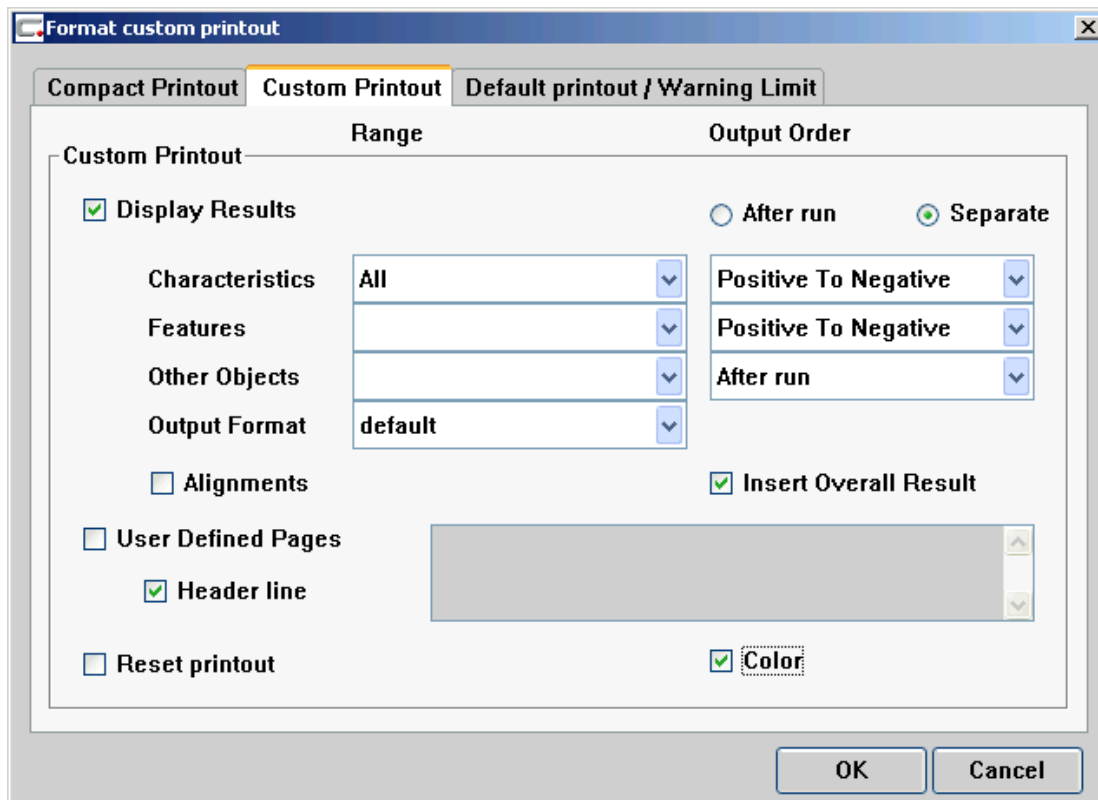
PR-86

Application:

Using this function, you can recognize at a glance in the custom printout whether a characteristic has exceeded the warning limit or tolerance.

Call:

In the ‘Format custom printout’ dialog in the Resources menu, you can activate the new function ‘Insert Overall Result’ for a CNC run in the printout.



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2.3 New Features - Operation

2.3.1 Preassigning a Stylus System Automatically for the Measurement Plan

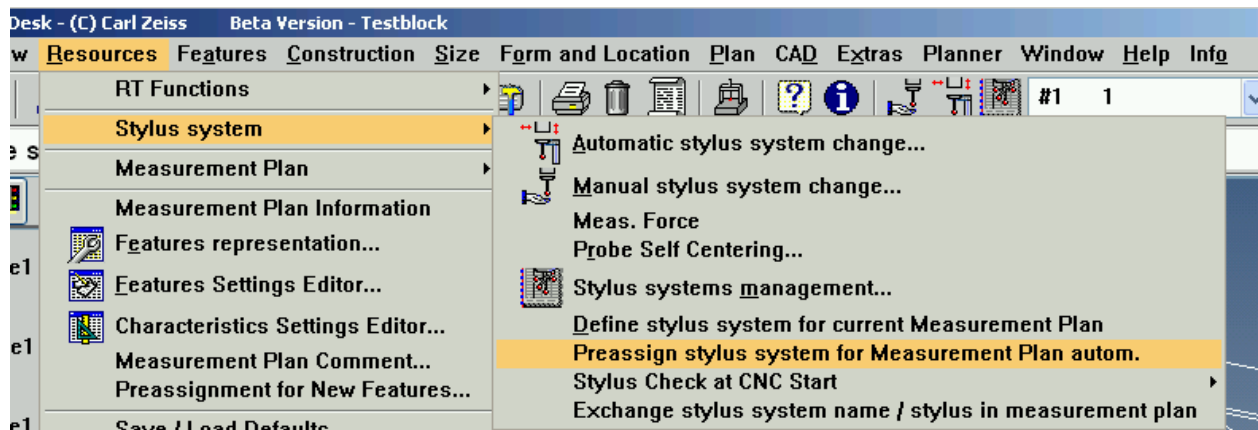
C48_4

Application:

This function, which previously was only available in connection with the Characteristic_IN option, is now part of the basic Calypso package and offers practical help when transferring measurement plans if these are to be used with a stylus system which already exists. The existing stylus system is automatically assigned to the corresponding features in the measurement plan. If the stylus system has to be subsequently adapted, this can be done with the Measurement Plan Editor Features.

Call:

Using the menu 'Resources', 'Stylus System', 'Preassign stylus system for Measurement Plan autom.' the applicable stylus system is automatically determined and saved for each feature.



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2.3.2 Optimized Saving and Loading of Defaults

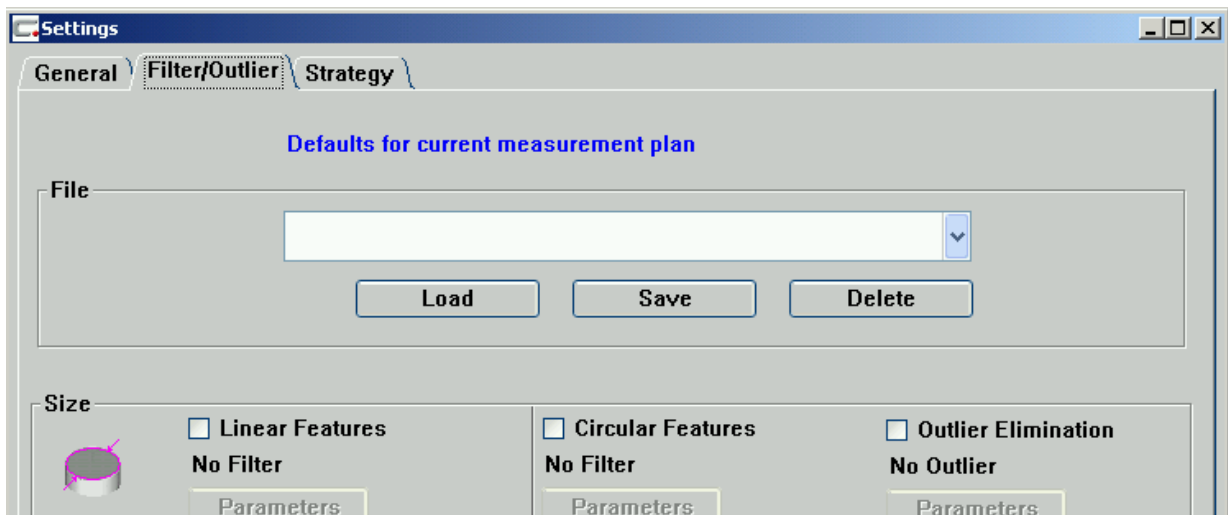
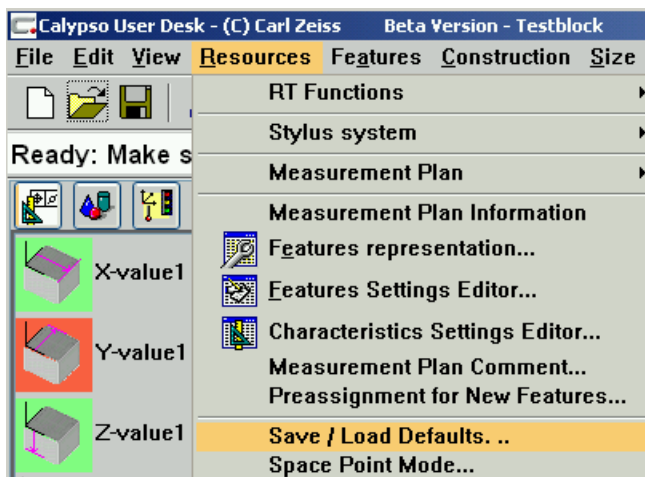
KM-22

Application:

With this function you can now change the **Filter/Outlier Settings** of the current measurement plan and the default setting for the strategy for new elements in each measurement plan. You can also save / load settings for Filter/Outlier and Strategy in one file ('General').

Call:

Using the menu 'Resources', 'Save / Load Defaults'.



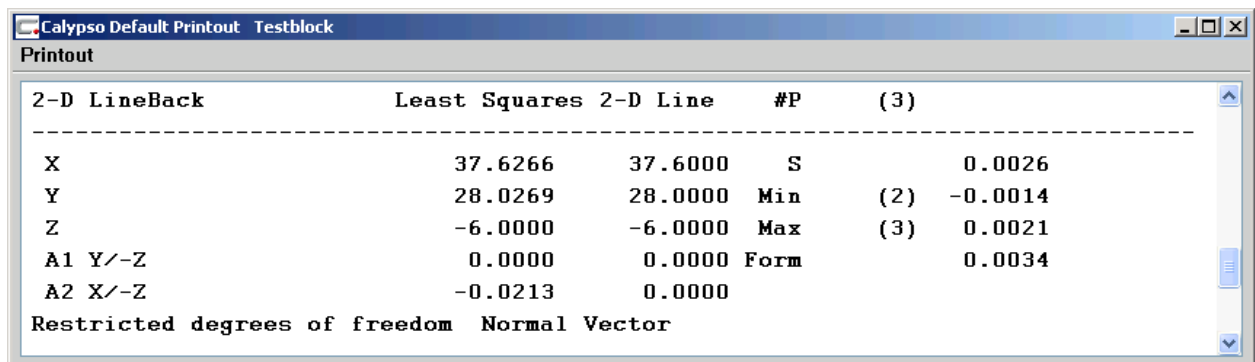
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2.3.3 Selecting the Normal Vector for 2D Lines

N-128

Application:

For the optimum evaluation of the straightness of 2D lines, it may be necessary in specific applications to be able to restrict the degree of freedom of the normal vector. The constraint is shown in the printout.



Calypso Default Printout Testblock

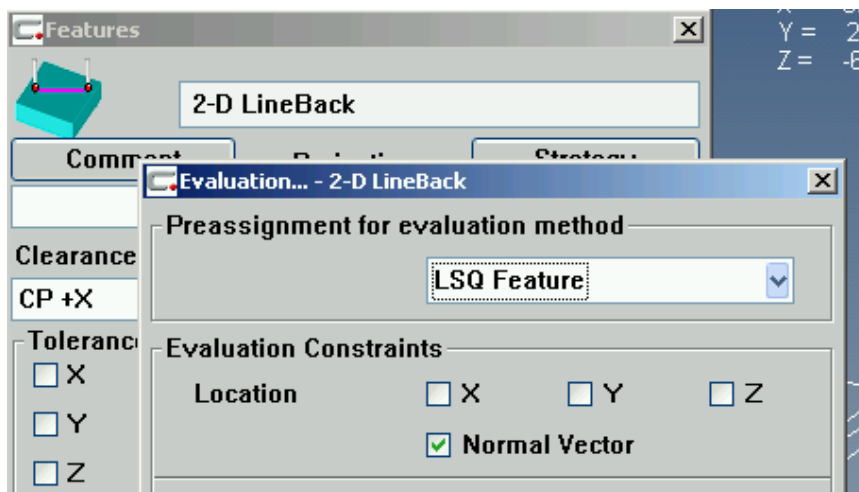
Printout

2-D LineBack	Least Squares	2-D Line	#P	(3)
X	37.6266	37.6000	S	0.0026
Y	28.0269	28.0000	Min (2)	-0.0014
Z	-6.0000	-6.0000	Max (3)	0.0021
A1 Y/-Z	0.0000	0.0000	Form	0.0034
A2 X/-Z	-0.0213	0.0000		

Restricted degrees of freedom Normal Vector

Call:

In the 2D line feature select 'Evaluation' or directly in the dialog for the DIN Straightness. You can also select this using the Measurement Plan Editor Characteristics.



If 'Normal Vector' is selected, the line is calculated with the constraint of the normal. The actual normal then corresponds to the nominal normal.

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2.3.4 Optimized Program Change from Calypso to GEAR PRO and HOLOS SPZ-4

Application:

The program change between Calypso and related applications (e.g. GEAR PRO, HOLOS etc) has been improved with the Taskbar with regard to procedure and prompting. Unclear or incorrect statuses are therefore avoided when changing between programs.

Call:

The Taskbar is opened in the traffic light dialog using the 'More...' menu.



The selected application only starts if it has been installed correctly. The user is informed of the status during the program change.

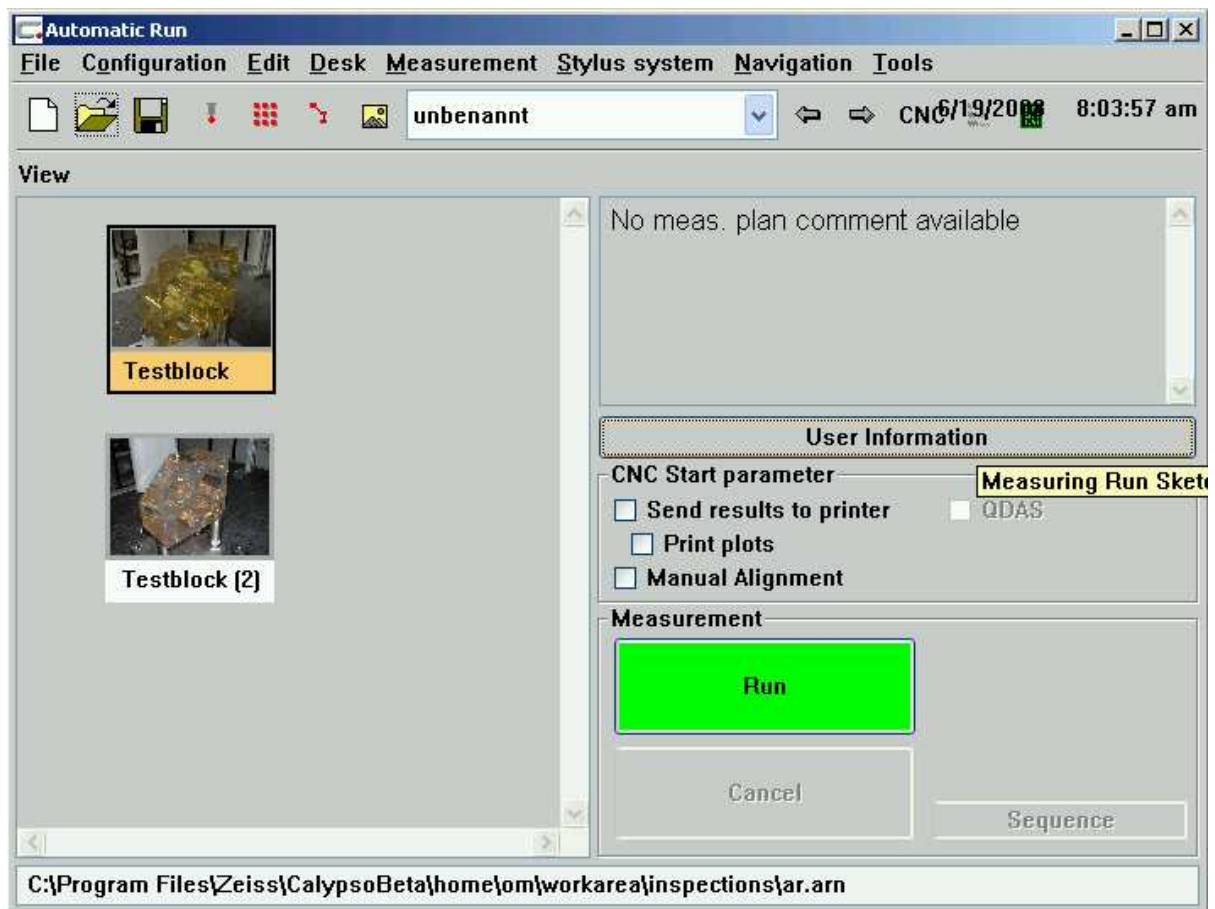
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2.3.5 Enhanced Measuring Run Information for AutoRun

C48_8_1

Application:

Analogous to the measuring run information at the CNC start of a measurement plan, it is now also possible to save or call measurement plan related information in the AutoRun user interface. Apart from simple text messages, graphics, photos or videos can also be used.



Call:

The measurement plan desired is selected in the AutoRun dialog. The information saved on this can be called using the User Information function.

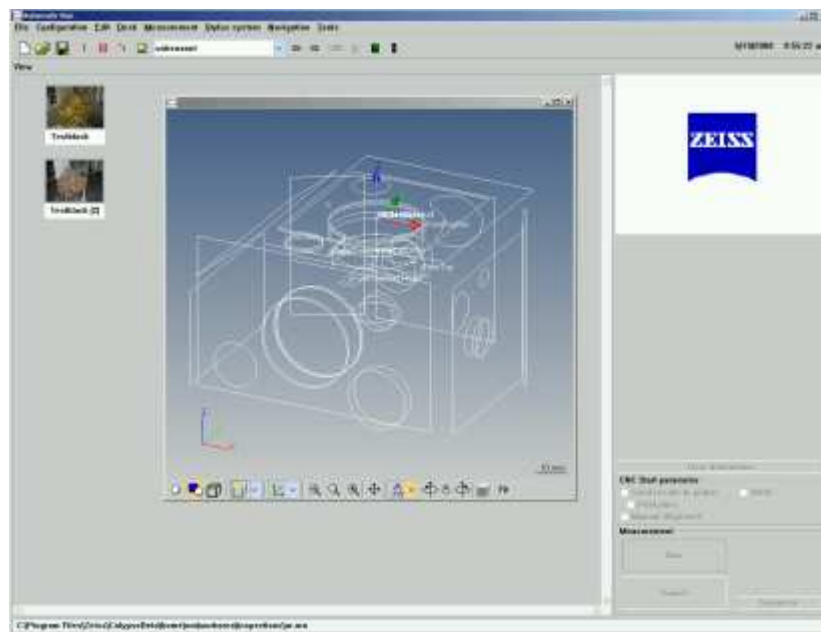
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2.3.6 Prompting using CAD Windows for Manual Runs

C48_8_2

Application:

For optimum prompting for **manual** runs that are started under AutoRun, the CAD graphics window is displayed and probing points and features are marked in color.



Call:

The graphics window is opened automatically after the start of the measurement plan in the AutoRun for manual runs.

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2.3.7 Super Characteristic for Toolbox

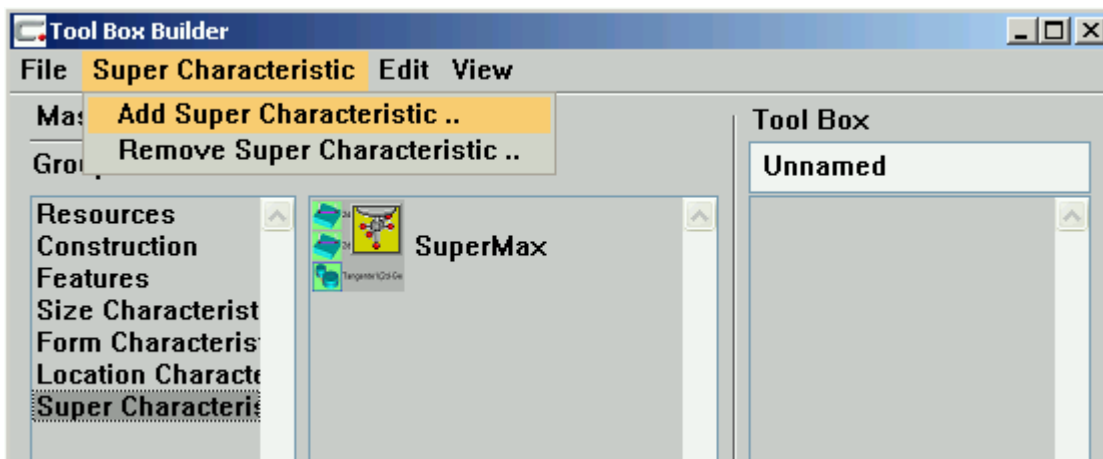
C48_8_3

Application:

With this function, macro measurement plans can be saved as independent characteristics in the toolbox. These characteristics can be moved to the measurement plan currently open per drag & drop as for all the other features in the toolbox.

Call:

The Super Characteristics are managed in a single group in the open toolbox:



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2.4 New Features – Stylus Systems and Qualification

2.4.1 Angle Schema for RDS Qualification using Stylus System List

C48_11

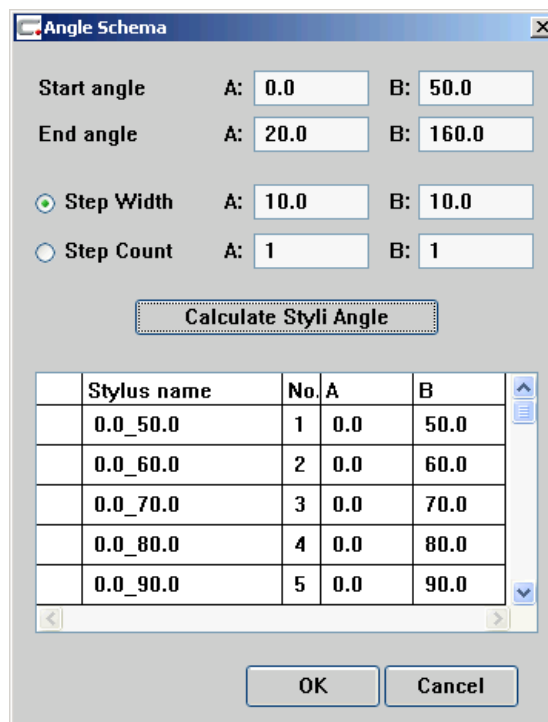
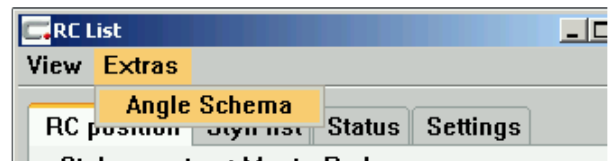
Application:

For applications on coordinate measuring machines that are equipped with an index system, e.g. a RDS, and which need a number of stylus positions, the setup and qualification is simplified with this new function. Stylus positions are automatically generated and saved using a start and end angle and a step width or step count.

So that this dialog is always displayed in the same place on the monitor, the position can be saved using 'View' and 'Save Window Position'.

Call:

In the 'Probing system qualification' dialog, the RC list is opened using the 'Stylus' and 'Position' menu. In this screen, the dialog for generating the angle positions is opened under 'Extras' and 'Angle Schema'.



The 'Angle Schema' dialog box contains the following fields and controls:

- Start angle: A: 0.0, B: 50.0
- End angle: A: 20.0, B: 160.0
- Step Width (selected): A: 10.0, B: 10.0
- Step Count: A: 1, B: 1
- Calculate Styli Angle button
- Table of generated stylus names:

Stylus name	No.	A	B
0.0_50.0	1	0.0	50.0
0.0_60.0	2	0.0	60.0
0.0_70.0	3	0.0	70.0
0.0_80.0	4	0.0	80.0
0.0_90.0	5	0.0	90.0

OK Cancel

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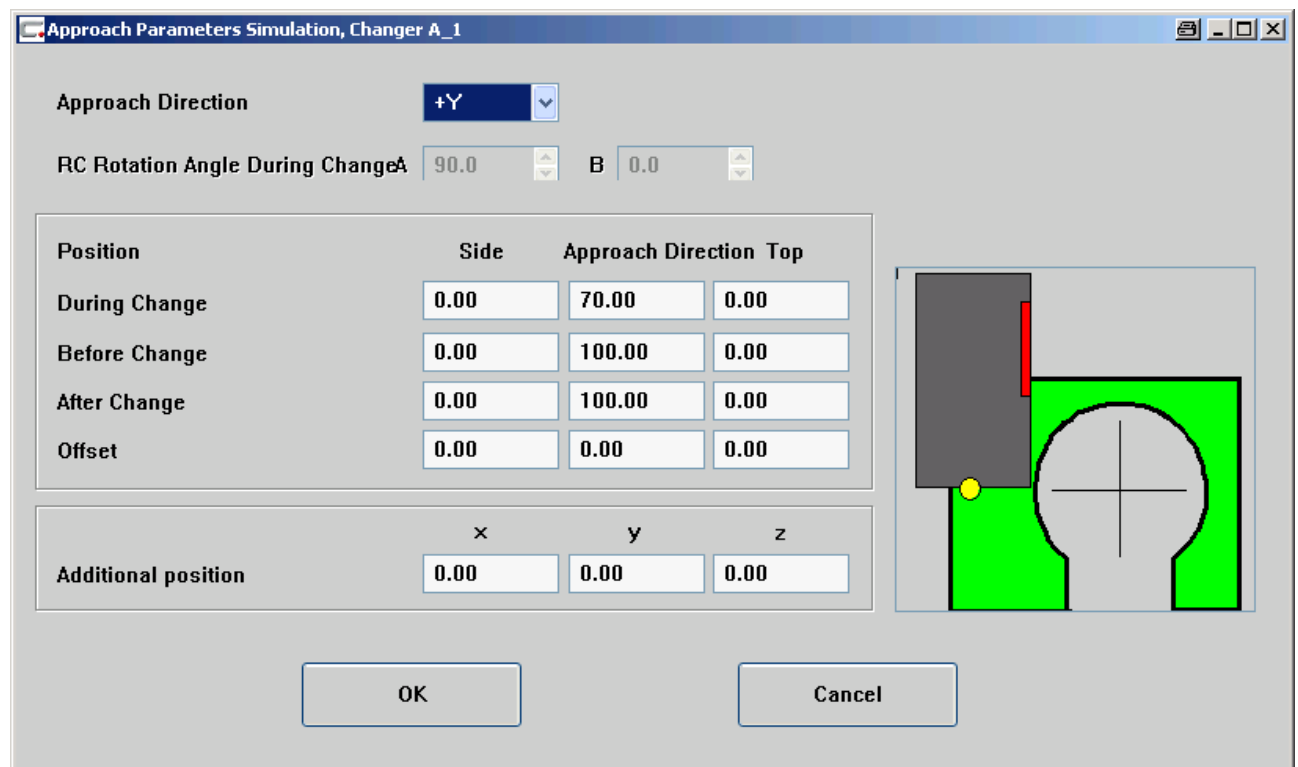
2.4.2 RDS Position during Stylus System Change

The SCR200 change magazine can now be approached in any RDS angle position with a TP200, regardless of the fitting position of the RDS magazine. The stylus has to point in $-Z$. The magazine must be aligned horizontally with approach directions $+X$, $-X$, $+Y$, $-Y$. The approach directions $+Z$ and $-Z$ as well as inclined approach directions or stylus positions other than $-Z$ are not possible.

2.4.3 Navigation Positions during the Stylus System Change

The dialog for setting the approach direction has been enhanced by the option of defining the distance to the magazine during the change process analogous to the positions before and after the magazine in the other axes as well.


In this way it is possible for example to move away over a high part between two changers which are assembled at opposite sides of the measuring area.



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2.4.4 Home Position Travel with Indexing Systems (RC)

For bridge measuring systems with RDS probe (RDS, ISC, PH9, PH10 and PH10M) the angle position can now also be given for the home position travel. In this way the home position travel can be carried out with stylus systems which would otherwise lead to a collision with the bridge.



Sensors

PH9

Diameter

Max 100.00 mm

Upon Probing...

Acoustic signal

PC acoustic signal

Angle for Home Position Travel

Rotate to Angle

A 15 °

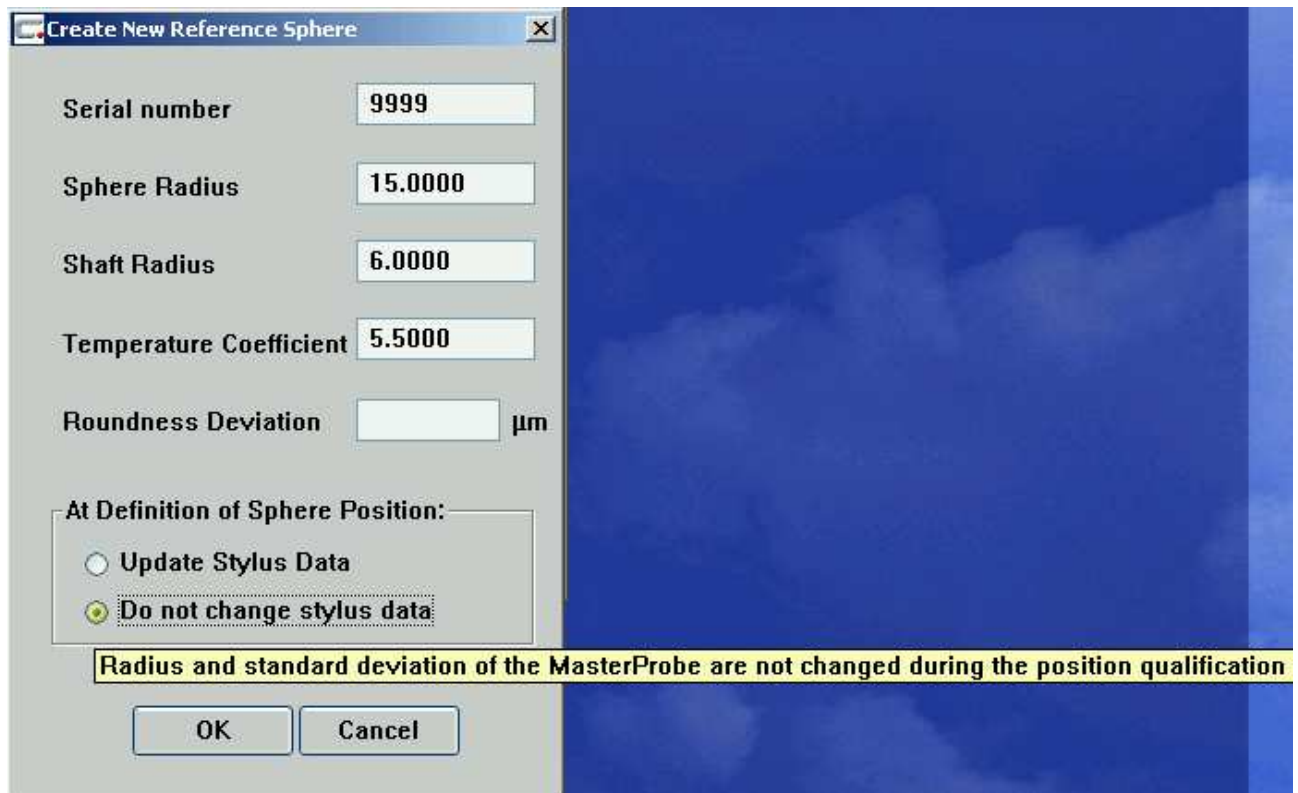
B 0.00 °

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2.4.5 LineScan - Position Qualification of the Reference Sphere Optimized

With this new function, the negative influences of the position qualification of the reference sphere with the LineScan sensor can be avoided.

This is done by entering a new reference sphere for which updating of the MasterProbe data during the qualification is suppressed.



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2.5 New Features – Curve Option

2.5.1 Point Recall without Probe Radius Correction in the Curve

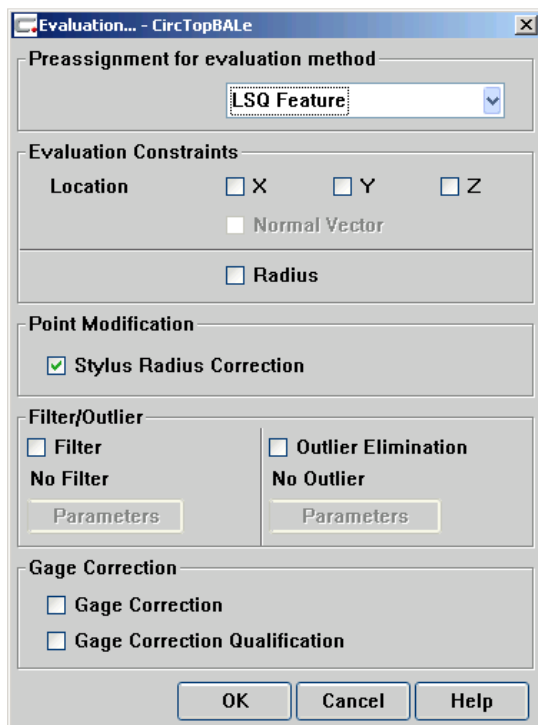
C48_27

Application:

To be able to define a quick and simple a measurement as possible (without the probe leaving the part), sometimes bores, lines and cylindrical transitions are measured in one go as a curve. The regular geometries in this are described with a point recall from the curve. In doing this, the measured points are already corrected by the curve. Sometimes this is not 100% correct (e.g. with transitions between the geometries). Here it may be more advantageous to carry out the point recall within a circle instead of the curve.

Call:

With the point recall of measured points for a curve, the stylus radius correction can be activated / deactivated in the 'Evaluation' dialog. Stylus radius corrected points of the individual geometries and the curve within the one recall are required only when using the lasso function in order to be able to record the correct points for the recall during the measurement.



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2.5.2 Nominal Point Distribution with Chord Height and Max. Step Width SPK-166

Application:

The previous curvature-dependent definition of nominal points on a curve has been extended by the option of entering a 'Max. Point Distance' in order to achieve a sensible nominal distribution as well for curves with little curvature or for straight sections.

Call:

In the 'Modify Nominals' curve dialog, the maximum point distance required can be entered in addition to selecting the 'Step Width' or the 'Chord height'. The new calculation of the nominals is carried out once the dialog is closed.

Modify Nominals

in Vector direction
 Coordinate axes direction
 Number

Division

Step Width 2.0000
 Chord height 0.0100
Max. Point Distance 3.0000

Number of Points 50
 Coordinates Distance Start

X 0.0000 0.0000
 Y 0.0000 0.0000
 Z 0.0000 0.0000

OK Cancel

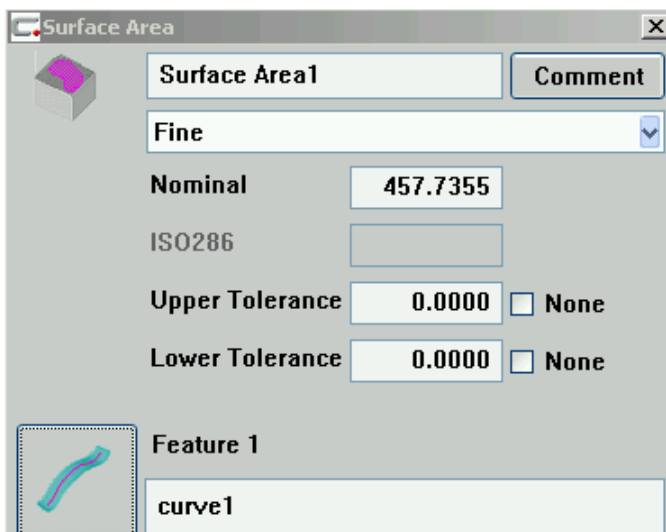
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2.5.3 Surface Area of a Closed 2D Curve

SPK-171

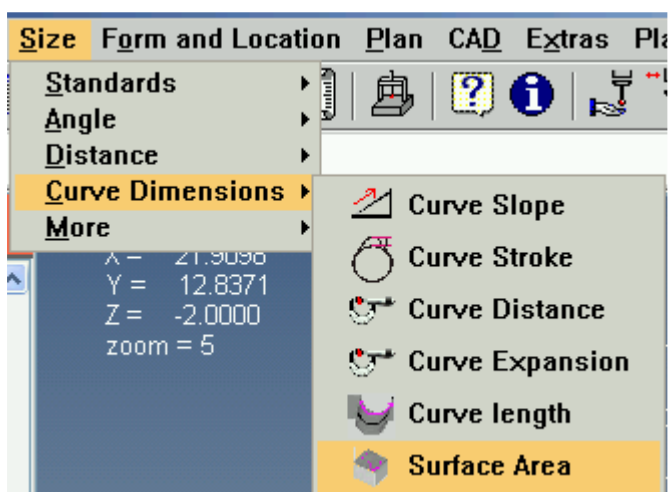
Application:

For closed, two-dimensional curves, the enclosed surface area can be calculated automatically with this function and used for a nominal-actual comparison. The surface area is calculated using the integral of the boundary curve (B spline). The result is written to the printout with an actual value as for all other features.



Call:

Via the menu 'Size', 'Curve Dimensions' 'Surface Area':



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2.6 New Features - PCM Option

2.6.1 PCM-Parameters for ISO Tolerances

C48_36

Application:

This enhancement enables a part spectrum with parts of varying quality, for example, and thus different ISO 286 tolerances to be tested using PCM.

Call:

The input box for the ISO 286 tolerances is allocated with a text formula.

The screenshot shows the 'Features' dialog box for a feature named 'CircTopBALe'. The dialog is divided into several sections:

- Comment, Projection, Strategy:** Comment: Circle, Projection: None, Strategy: Evaluation...
- Clearance Group, Nominal Definition, Alignment:** CP +Z, Options, (Base Alignment)
- Tolerance For:** A table with columns for Nominal and Actual values for X, Y, Z, and D. D is checked.
- ISO 286:** A table for ISO 286 tolerances. The 'H6' tolerance class is highlighted in yellow. The 'Upper Tolerance' is 0.0110 and the 'Lower Tolerance' is 0.0000. The identifier is 'Diameter_CircToj'.
- Form and Points:** Sigma: 0.0026, Form: 0.0028, Points: 4.
- Min and Max:** Min: -0.0014, Point no: 1, Point no: 3, Max: 0.0014.
- Roundness and Position:** Checkboxes for Roundness and Position.

Tolerance For:	Nominal	Actual
<input type="checkbox"/> X	-13.4000	-13.4040
<input type="checkbox"/> Y	23.6000	23.5523
<input type="checkbox"/> Z	-1.4000	-1.4149
<input checked="" type="checkbox"/> D	12.0000	11.9810
A1 X/Z	0.0000	0.0000
A2 Y/Z	0.0000	0.0000
Space Axis	Z	Z
Depth	0.0000	0.0000
Start Angle	0.0000	0.0000
Angle Segment	360.0000	360.0000

ISO 286	Upper Tolerance	Lower Tolerance	Identifier
H6	0.0110	0.0000	Diameter_CircToj

Sigma	Form	Points
0.0026	0.0028	4

Min	Point no	Point no	Max
-0.0014	1	3	0.0014

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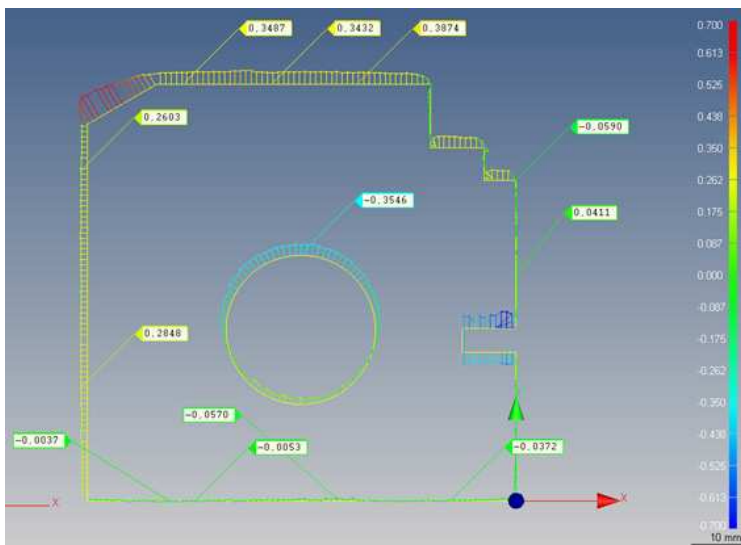
2.7 New Features METROTOM

2.7.1 Measuring with CAD 'Clipping area'

CD-49

Application:

This new function offers the following options:



- Simple measurement of contours in the CAD clipping area
- Definition of CAD clipping areas
- Simple definition of 2D regular geometries from CAD clipping areas and from actual data
- Simple definition of dimensions and distances from the CAD clipping area
- Erratic clipping areas with the defined features
- Direct visualization of the results
- CNC capability of the presentation
- Comparison of the current measurement with templates (= preset geometries)

Call:

The dialog for defining the clipping area is opened using 'Features', 'Additional Features' 'Profile Elements'.

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2.7.2 Optimized Operation for Measuring Individual Characteristics

SM-20

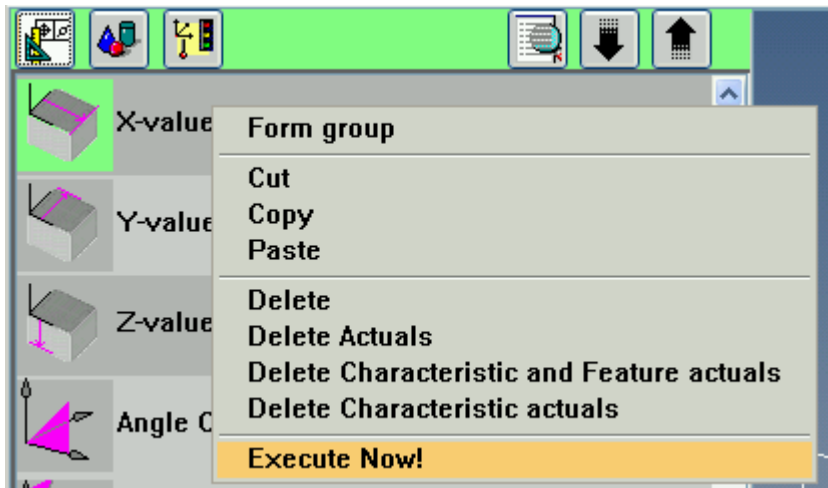
Application:

For fast CNC measurement of individual characteristics of an open measurement plan, the desired characteristics can be selected and measured with the function 'Execute Now!'. The measurement is always carried out with the following settings:

- Existing alignment
- Current selection
- No request for printout header data
- No custom printout
- No compact printout
- Display plots
- Do not print plots
- No output of PDF and/or PostScript
- Clear existing results
- No results to file
- Order of run: Acc. to PM list
- Navigate Feature to Feature: Automatic (CT - no generation)
- Speed: Vmax

Call:

Select characteristic(s) with the left mouse button and select 'Execute Now!' with the right mouse button.



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2.8 Other New Features

2.8.1 Reflector Tools for Laser Tracker

C48_18

Application:

Reflector tools are probing aids for laser trackers which are used for difficult or difficult to record probing points. There are different types of reflector tools: DriftNest, PinNest and EdgeTool. Depending on the construction, the geometry of the respective reflector tool has to be taken into consideration by one or several offset values during the evaluation.

The reflector tool offset values with their geometry can be created and saved in Calypso. When they are used, they are called during the measurement and are included automatically in the evaluation.

Call:

The reflector tools are created in the 'Stylus System Management' window.

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2.8.2 Laser Tracker: Cancel Option after Base Alignment Match

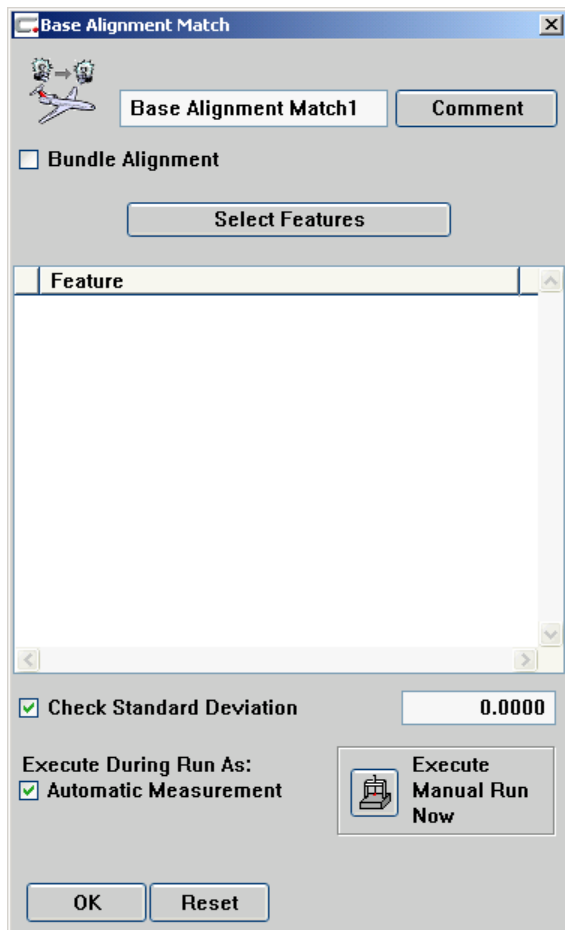
C48_19

Application:

This enhancement of the base alignment match, once it has been carried out, enables the user to assess the quality of the basic alignment match making the base alignment match much easier to use. The sigma value determined after the match is then output. The user then decides how to continue, that is either to carry on measuring or to repeat the measurement.

Call:

Using the menu 'Resources', 'Utilities', the Base Alignment Match is selected and then decided if the output is wanted and if yes, from which warning limit.



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2.8.3 Laser Tracker: Graphic Stylus and Reflector Display

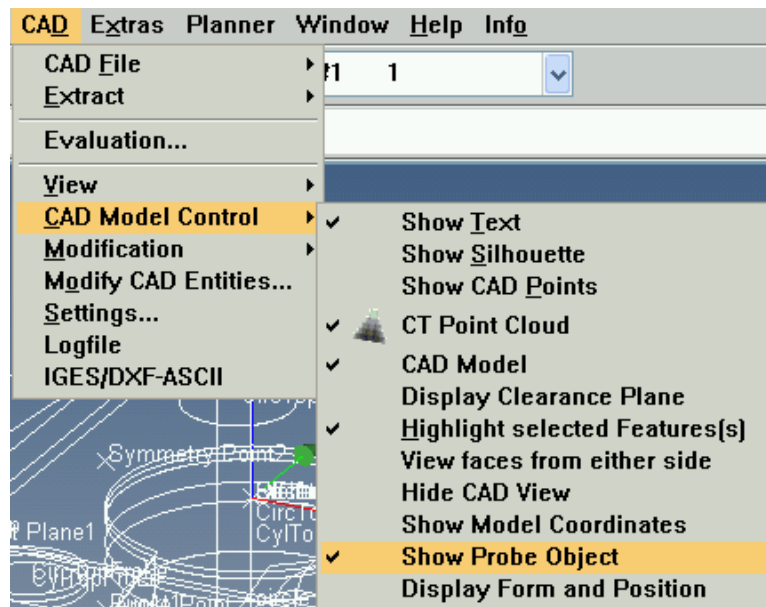
C48_20

Application:

With this new function, the manual measurement with measuring arms and laser trackers is simplified. The position of the stylus or the reflector relative to the object being measured is displayed in the CAD graphics window.

Call:

The display is activated using the menu 'CAD', 'CAD Model Control', 'Show Probe Object'.



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2.8.4 Laser Tracker: New Feature - 'Station Point'

KMG-17

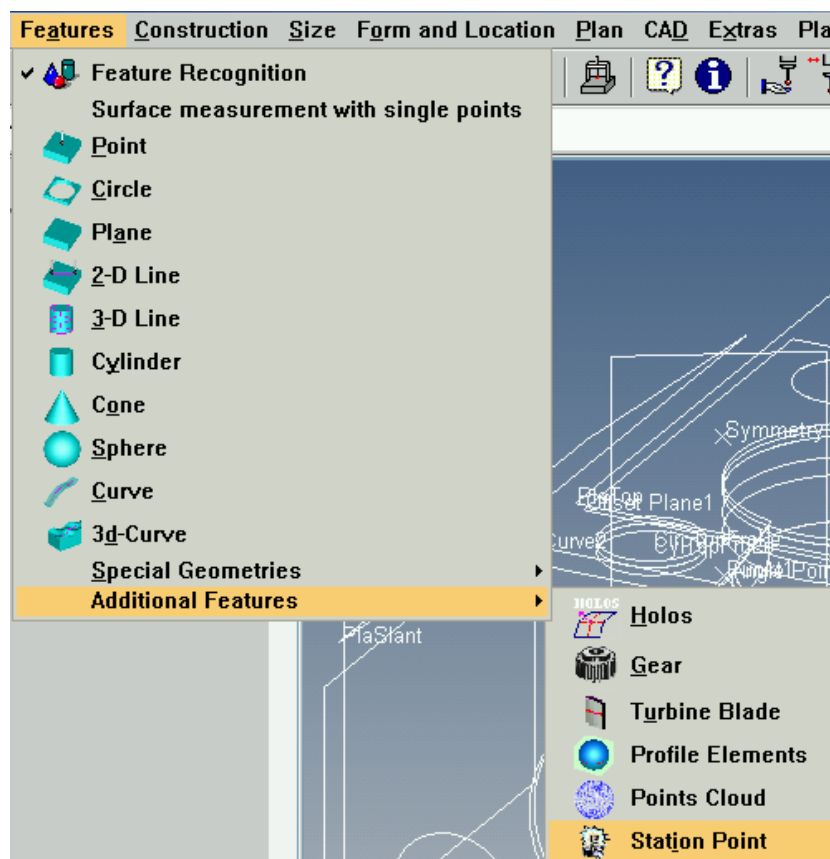
Application:

As laser tracker devices are mostly used on very large parts, the laser tracker often has to be moved during the measurement or several laser tracker devices have to be used during the measurement. Therefore it is imperative that the relation of the laser tracker positions to one another is known.

This is why a new feature 'Station Point' is now available with the laser tracker application. The station point provides an enhancement of the basic alignment match with alternative alignment algorithms. The station point is not a measurable feature but corresponds to the position of the laser tracker device.

Call:

Using the menu 'Features', 'Additional Features', 'Station Point'.



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2.8.5 Automatic Error Report

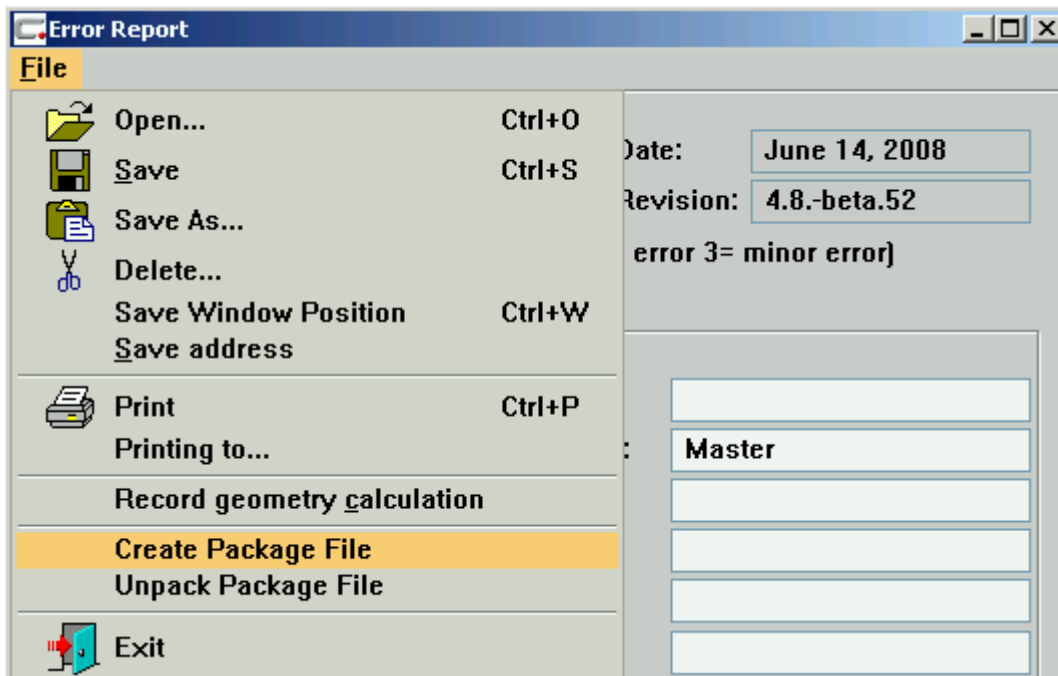
HS-13

Application:

All error messages are recorded in order to be able to observe and analyze any malfunction. These can be grouped together in one file for passing on.

Call:

Errors are recorded automatically. The package file is created or extracted using the 'File' menu in the error report.



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2.8.6 New CMM: DuraMax



Universal CNC coordinate measuring machine with VAST XXT scanning probe from ZEISS. For shop floor use as universal measuring machine and flexible gage.



DuraMax

The ideal start in 3D metrology:

- Technology from Carl Zeiss
- Single-point probing and scanning
- Robust design
- Fully equipped CMM
- For shop floor use

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3 Installation Instructions

3.1 Installing the Calypso Basic CD

In order to install Calypso you must have full **Administrator rights**.

If with this version you are performing an Update of a Calypso installation which already exists, the existing installation first has to be uninstalled. Existing data such as e.g. measurement plans, probe data or other CMM-specific data are not deleted. However we still recommend you create backup copies of your data at regular intervals.

The **deinstallation** is performed using the Windows Uninstall function. In Windows, click on "Start" and select 'Calypso' via "Settings\Control Panel\Add or Remove Programs" and then click on "Remove".

When the CD is inserted, the installation routine usually starts automatically. If this is not the case, use the Windows Explorer to select "Calypso.exe" on the CD and start the installation by double-clicking.

Installation of several Calypso versions on one PC at the same time is not supported! Error-free functioning of Calypso is only guaranteed if there is just one version installed!

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3.2 Installing Calypso ServicePacks and Patches

If you have received a Calypso ServicePack or a Patch together with the Calypso Basic CD, the ServicePack or Patch must be installed after the installation of the Basic CD.

Make sure you do not accidentally install ServicePacks for older revisions as this would lead to an undefined status of your measuring software and can cause problems!

Prerequisite for the installation of a ServicePack is always an existing installation of the official release of a basic CD. The release currently installed can be seen in Calypso in the 'Miscellaneous' menu. The revision currently installed is also automatically output in the "Error Report". You reach this via the "Extras" menu.

How to install a ServicePack:

1. First end Calypso if this is running.
2. If the ServicePack is on a CD:
The installation routine starts automatically. You only need to click once on the 'Install ServicePack' button and the installation is carried out in full. If the CD does not start automatically, open your Windows Explorer and start the 'Calypso_ServicePack.exe' by double-clicking.
3. If you have received the ServicePack per email (setup.exe):
Copy the setup.exe file to your local hard disk and start the file by double-clicking in the Windows Explorer.
4. After the installation has finished, Calypso has to be started and the changes are activated. You are then prompted to restart Calypso again.

Notes:

From 4.6.02 onwards, ServicePacks and Patches are no longer listed under 'Settings', 'Control Panel', 'Add or Remove Programs'.

How to carry out the installation of ServicePacks is described in detail in the Calypso manual in the 'Management' chapter.

For current **ServicePacks and Patches** concerning **Calypso** visit our website:

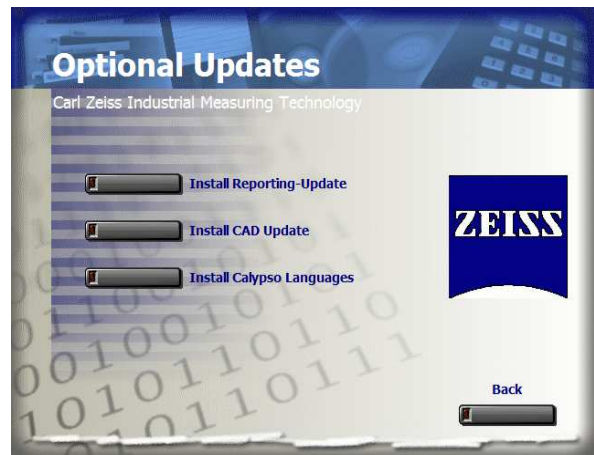
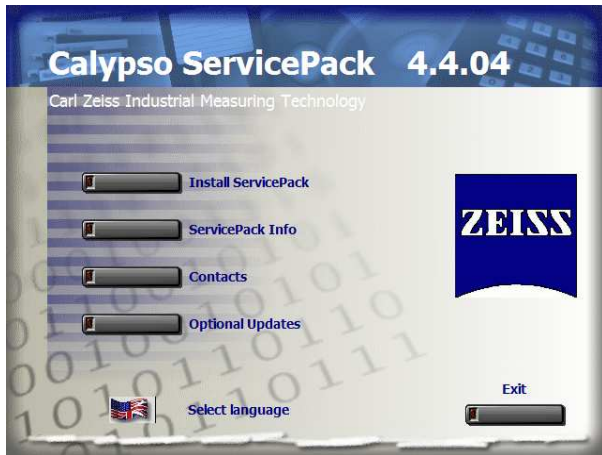
<http://www.zeiss.com/imt-servicepacks>

Please register in order to access the ServicePack download area and you will immediately receive your personal access code via eMail.

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3.3 Installing Additional Languages

In addition to the default languages German and English further languages are supplied on the Calypso ServicePacks. These have to be installed separately. Insert Calypso ServicePack CD and select German or English installation menu, then click on 'Optional Updates' and 'Install Calypso Languages'



By clicking on the one of the flags, the desired language and corresponding reference manual will be installed on your hard disk and can then be activated via the workroom menu in Calypso. Please note that some of the reference manuals are not up to date (see chapter 1), in this case, please refer to either the German or the English version.

Consequently, to save hard disk space, the installed languages can also be uninstalled if no longer needed by selecting 'add/remove programs' from the Windows control panel menu.

Caution: Do not uninstall the Language that is currently selected in Calypso!

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3.4 Data Backup

CMM-specific data can be saved and then reimported with the 'Save CMM Data' and 'Install CMM Data' functions. The data is saved with 'Save CMM Data' and burned on a CD (CMM data CD), which can then be installed at a later date with 'Install CMM Data'.

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4 Compatibility

Please read the information on the **Application** and **Familiar Problems** before you use this software.

4.1 CMM Validity

Calypso Release 4.8 is intended for application on the following coordinate measuring machines:

Bridge measuring machines:	C400, C700 Eclipse Vista Contura Contura G2 Contura G3 Spectrum Accura Prismo MC, FC, WMM, PMC, ZMC UMC UPMC CenterMax GageMax
Horizontal arm measuring machines:	Carmet SMC USMC SMM PRO
Large measuring machines:	MMZ-T MMZ-G MMZ-E MMZ-B
Special measuring machines:	METROTOM DuraMax

4.2 Controls & Stylus Systems

Please refer to the [Compatibility list](#) in order to view the permissible combinations of machine types, controllers and firmware .

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4.3 PC System

Recommended data systems:

ZEISS Power Workstation: HP Workstation xw4600, 3.00 GHz Core 2 Duo
2x160 GB SATA-hard disc 10k
4 GB RAM DDR2-800 ECC
NVIDIA Quadro FX1700 graphic card 512Mbyte PCI
1 x LAN Broadcom 10/100/1000
1 x LAN Intel 10/100/1000
DVD+/-RW drive, 6 x USB, Mouse, Windows XP or Vista*

ZEISS Entry Workstation: HP Workstation xw4600, 2.33 GHz Core 2 Duo
160 GB SATA- hard disc 7,2k
2 GB RAM DDR2-667 ECC
NVIDIA Quadro FX570 graphic card 256 MB PCI-E
1 x LAN Broadcom 10/100/1000
1 x LAN Intel 10/100/1000
DVD+/-RW drive, Mouse, Windows XP or Vista*

Minimum system requirements:

The following minimum requirements must be fulfilled for installing and operating Calypso 4.8:

PC with 1,6GHz and 1GByte RAM, mouse, printer and data backup. As operating system, Windows XP with ServicePack 2 or Windows Vista* (32bit only!) must be installed.

2 network connections must be possible (incl. installed driver): 1x for control connection, 1x for customer network. The TCP/IP network protocol must be installed. The installed graphics card must be installed with OPEN-GL drivers. At least one of the ZEISS approved graphics cards should be used (NVIDIA QuadroFX oder ATI Fire GL).

A special "Zeiss" driver must be used for NVIDIA graphics cards. Use of other graphics cards as well as the installation of other drivers may only be made after consent from Carl Zeiss IMT. If you have any queries, please contact our Hotline.

* **Windows Vista:** Calypso 4.08 was tested successfully on Windows Vista and is functional apart from a few minor restrictions:

-Eagle Eye systems using E-Box will not be supported, an upgrade to Blue-Box is necessary.
-NVIDIA graphic cards must be configured by Carl Zeiss IMT. Altering the size of the CAD view can cause a display problem when using NVIDIA graphic cards, this can be fixed by switching measurement plans.

A general release will be issued as soon as all vendors of Calypso components have completed releasing Windows Vista for their components.

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4.4 CAD Interfaces

Calypso supports the following CAD Interfaces:

CAD Software	Version
Catia 5	18
Catia 4	4.2.x
Pro/ENGINEER	Wildfire 3.0
Unigraphics	NX5
SolidWorks	2008
Inventor	12
Parasolid	19
IGES	5.3
VDAFS	2.0
STEP	AP214

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5 Contact Addresses

If you have questions, ideas or problems regarding Calypso, please always use the integrated **Calypso Error Report** to contact us.

You can call the form for this by selecting "Error Report" from the "Extras" menu.

In the "**Comment**" field you can add any text to explain your problem.

With the pull down menu in the Error Report, you can save the report (to forward this per email) or print it (for faxing). Our email address and the fax number can be found in the report together with the respective phone numbers.

For Germany:

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For USA:

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For current **ServicePacks** concerning **Calypso** visit our website:

<http://www.zeiss.com/imt-servicepacks>

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