

# Calypso



## Release-Info



## Documentation on Release 4.10

# Release Info - Calypso 4.10

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## 1 About Calypso 4.10

### 1.1 Notes on the Application and Familiar Problems

Please read the following notes before installing this software!

#### 1,1.1 Important information:

- Please install **Service Pack 4.10.04** immediately following the installation of the basic DVD – existing probe data from earlier versions can only be preserved by doing so.

- **Stylus system data** created with versions **older than Calypso 4.2** cannot be converted automatically into the format used in Calypso version 4.10. Please contact the hotline in such a case.

- If a CNC-run with activated 'missing bore' function is aborted due to **unsuccessful probing of a bore** hole, this feature will be treated in the same manner as a missing bore hole would, i.e. would be left out after restarting the CNC-run without 'resetting old results'. The actual result of the feature must be deleted in order to ensure a new measurement.

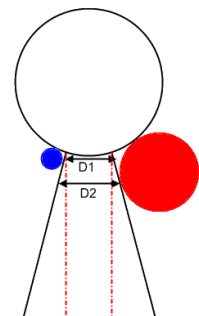
Purpose: CNC-runs with critical probing situations in bore holes can be completed faster.

- The **Shaft Radius** of the **Reference Sphere** on the 'Reference sphere management' page must be set to a value large enough to cover all of the stylus diameters in use:

Sphere No. 1	
Sphere Radius	14.987000
X Offset	444.490399
Y Offset	-621.797261
Z Offset	-405.041239
S	0.000352
Roundness Deviation	0.000000
Update Stylus	
Shaft Radius	6.000000
Shaft Length	0.000000
Tilt	125.000000

In order to prevent collision during probe qualification the 'Shaft Radius' setting must be increased to a value that sufficiently takes into consideration the largest stylus radius in use (see D2 for the red sphere illustrated).

However, increasing the radius will also reduce the amount of possible angular positions for qualification (RDS,DSE etc.). A workaround to this situation is achieved by saving multiple copies of one and the same reference sphere with a varying shaft radius and selecting the sphere according to the requirements for probe qualification.



- The **Sphere Coverage** angle for a **full qualification** of **passive sensors (XXT, SP25)** is limited to a minimum of 180°, values lower than 180° are ignored. In order to qualify smaller styli a reference sphere with a smaller diameter (e.g. a stylus of which the radius is known) is required. Following a full qualification it is

possible to **re-qualify** a stylus using the regular reference sphere. For this a lower sphere coverage angle may be selected and a 6-point qualification is performed.

- LN 522 – Newly created **shaft stylus** can only be qualified using the following method:

- Qualify stylus
- Re-establish connection to CMM via the Stoplight window
- Define the newly qualified stylus as shaft stylus

This will be corrected with a ServicePack.

- ViScan/O-Inspect/F25: **Optically probed 2D-lines** used for alignment can cause the alignment to be rotated incorrectly by 180 degrees.

- ViScan/O-Inspect/F25: A manually defined alignment and preset base-alignment is prerequisite for the **optical-tactile adjustment** with the ring gauge, "Current Alignment" must not be used. The plan must be run "From Characteristic List" only.

- ViScan/O-Inspect/F25: After installing Calypso 4.9 the **ViScan sensor** must be re-qualified using the chrome template and the reference sphere! LN\_653

- ViScan/O-Inspect/F25: After focussing during manual CNC-runs the **optical probing method** must be **manually** re-selected. This will be corrected with a ServicePack.

- ViScan/O-Inspect/F25: **Template measurement** in combination with ViScan is currently only available for manual measurements. Templates can be displayed incorrectly or not at all in CNC-mode. This will be corrected with a ServicePack.

- ViScan/O-Inspect/F25: The **Graphics adapters** ATI FireGL 8800 and NVIDIA Quadro FX1100 are not compatible with Calypso 4.10 in combination with the **optical sensor**. The camera image is not displayed correctly in the graphics window.

- ViScan/O-Inspect/F25: The ViScan Sensor can only be used with **Windows Vista** in combination with a suitable Framegrabber card and. Please refer to chapter 3.4.

- **myCALYPSO** can be used in German and in English. When **switching** from one **language** to the other, the following changes must be carried out by the user:

1. Depending on the language selected, the respective 'myCalypso.arn' file must be saved under ...\\Calypso\\home\\om\\workarea\\myCALYPSO\_Macros\\autorun\\. Use the Windows Explorer to copy the desired file from the \\de subfolder (for German) or the \\en subfolder (for English).
2. The language dependent Macro files for macro 121 must be copied to the folder ...\\Calypso\\home\\om\\workarea\\myCALYPSO\_Macros\\inspections\\1\_macro\_al\\121\\. Use the Windows Explorer to copy the desired files from the \\Macro\_121\_de subfolder (for German) or the \\Macro\_121\_en subfolder (for English) to this location.

- Use of the **Aero Mode** with installations on **Windows Vista** systems cause malfunction of the landscape view of the graphics window in the custom printout. This can be corrected temporarily by switching off the Aero Mode. A final correction will be supplied with a Calypso ServicePack.

- **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.

- 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 4.10.

- **Installing** Calypso Release 4.10 will also upgrade the **Zeiss License Manager** to version 1.8.0.01. This is carried out automatically, as long as the Zeiss License Manager does not yet exist on your computer or an older version than 1.8.0.01 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.

### 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.

### 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**.

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

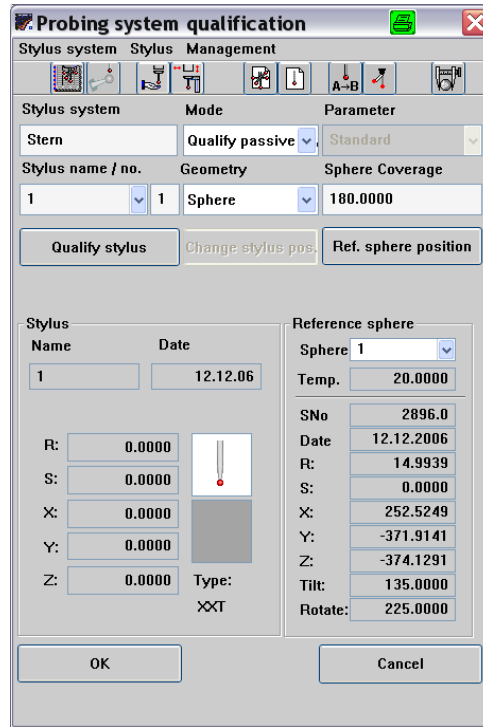
With the RDSCAA or DSECAA option, **side styli** can now also be **qualified semi-automatically** (except for XXT sensors!). Please note: **List qualification cannot** be applied for stylus systems with side styli!

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 (**not** for stylus systems with **side styli!**). The procedure is described on the following pages.

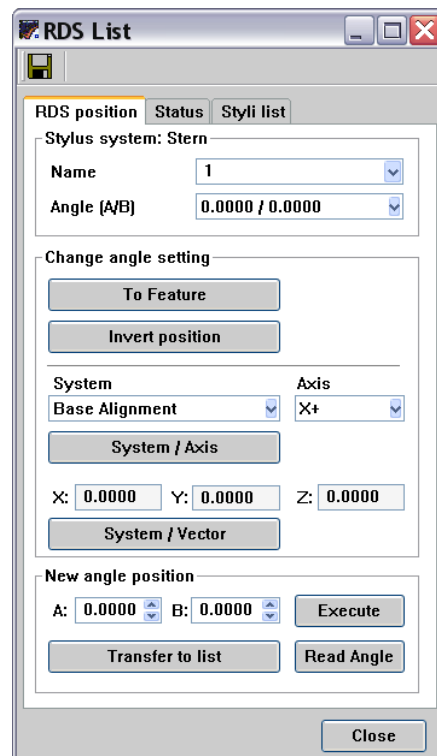
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**List Qualification:**



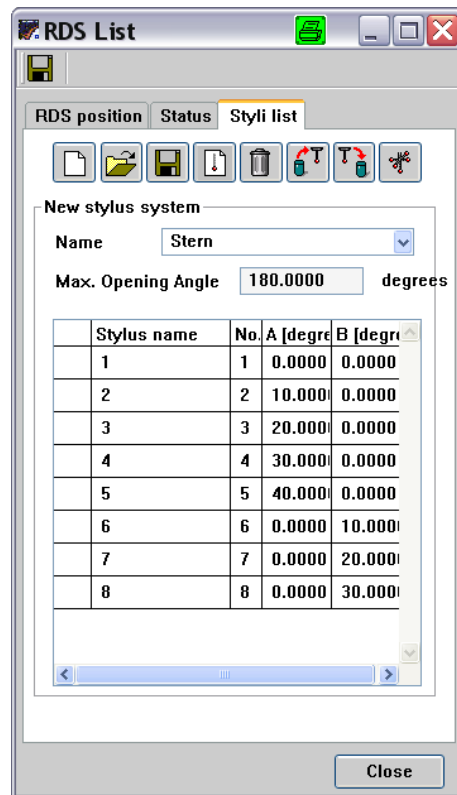
1. Open the 'Probing system qualification' window:

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



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3. Select the 'Styli list' tab:

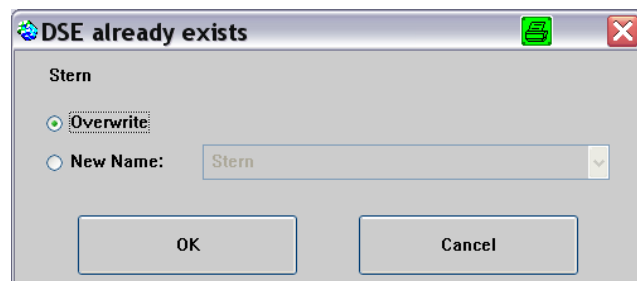


4. By clicking on the




icon, the message displayed on the right will appear.

Select 'Overwrite' and click 'OK'.

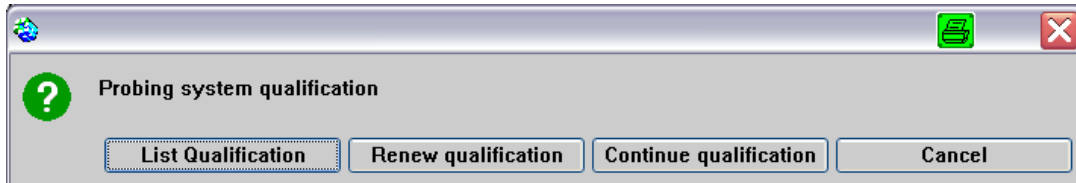


5. Close the window for setting the RDS axis with 'Close' and in the 'Probe system qualification' window start

the List Qualification using the  icon.

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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 DVD and latest changes

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**Contents:** Calypso ServicePack 4.10.04  
**Default Languages:** German, English, French, Italian  
**Additional Languages:** -  
**Instruction manuals:** German, English

### Latest changes:

<b>4.10.04</b>	<b>05.02.2010</b> Release.
<b>4.10.02.09</b>	<b>05.02.2010</b> Stylus data conversion enabled for simulation.
<b>4.10.02.08</b>	<b>04.02.2010</b> MasterProbeReset corrected.
<b>4.10.02.07</b>	<b>02.02.2010</b> Optimized stylus data conversion for upgrades.
<b>4.10.02.06</b>	<b>27.01.2010</b> Optimized stylus data conversion for upgrades.
<b>4.10.02.05</b> 11557 11580	<b>21.01.2010</b> Section in profile elements in CAD for Metrotom corrected. Bugfix in open waviness plot.
<b>4.10.02.04</b> 11441 11554	<b>14.01.2010</b> +Z stylus qualification corrected. Correct alignment selected for output of curve points.
<b>4.10.02.03</b> 11508	<b>14.12.2009</b> VDA data import corrected.
<b>4.10.02.02</b> 11512 11494	<b>09.11.2009</b> Acceptance start corrected. Creation of alignment in freeform surface dialog enabled.
<b>4.10.02.01</b> 11480 11459	<b>27.11.2009</b> Bugfix stylus system change TP20/TP200. Languages added. Stylus radius alteration corrected.

<b>4.10.02</b>	<b>17.11.2009</b> Release.
<b>4.10.01.13</b>	<b>16.11.2009</b> Stylus system data management corrected.
<b>4.10.01.12</b>	<b>12.11.2009</b> Optimized stylus system data management.
<b>4.10.01.11</b>	<b>10.11.2009</b> Bugfix for CMM connection.
<b>4.10.01.10</b> 11425 11424, 11445, 11447	<b>05.11.2009</b> Optimized safety zone for Accura2. Stylus system data management corrected.
<b>4.10.01.09</b> 11399	<b>23.10.2009</b> Manual run in Japanese version corrected.
<b>4.10.01.08</b> 11306 11388 11387	<b>15.10.2009</b> Bugfix for circle feature without points. Repeated measurement with manual alignment suppressed. Dynamic re-qualification corrected.
<b>4.10.01.07</b> 11301 11322 11359, 11363	<b>02.10.2009</b> Creation of safety groups corrected. Bugfix in Acceptance. 3D best fit funktion corrected.
<b>4.10.01.06</b>	<b>22.09.2009</b> Bugfix for ViScan.
<b>4.10.01.05</b> 11316, 11317	<b>21.09.2009</b> Stylus system data import corrected for Japanese systems. New drivers for ViScan (Framegrabber) available.
<b>4.10.01.04</b> 10726 10963, 11044, 11248 11167, 11201, 11265 11217 11220 11277 11279, 11280 11287 11291 11293 11299	<b>01.09.2009</b> Context menu in workroom corrected. CAD bugfixes Bugfix in printout. Stylus qualification in CNC mode corrected. Bugfix in Stoplight window. Bugfix in reference system of a pattern. Bugfix in angle point window and function. Calculation of curve form tolerance corrected. Dialogue point masking in workroom corrected. Bugfix in CNC mode with narrow driveways. Bugfix in stylus qualification.
<b>4.10.01.03</b> 11186 11187, 11163, 11121, 11119, 11081 11226	<b>20.08.2009</b> Macro update corrected. CAD bugfixes. Blade measurement sequence corrected.

11221	Min Max features corrected.
11209	Bugfix average feature.
11220	Coordinate display in Stoplight window corrected.
11232, 11219	Bugfix curve feature.

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## 2 New Features in 4.10

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### 2.1 New Features – Measurement Method

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#### 2.1.1 Mask Scanning Points by Number

**MOVIE!**

AF-00005

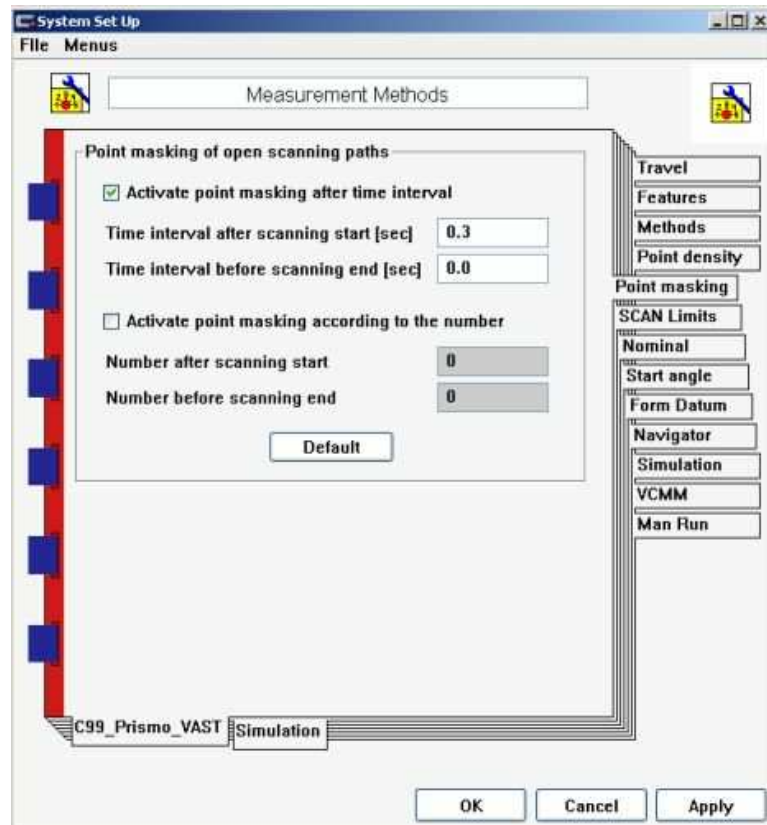
##### Application:

During the acceleration and deceleration phases of scanning (after starting to scan and before finishing scanning) the accuracy of the gathered probing points tends to be lower than for the main scanning section. For highest accuracy it is therefore advisable to mask these points and eliminate them from the evaluation.

This was possible with earlier Calypso versions by defining time intervals in which the scanning points would be masked. This feature has been extended by the facility to **mask the points by number** as opposed to defining the time interval.

##### Call:

'Point masking' is selected from the workroom page 'Measurement' where the desired number of masked scanning points can be defined by the user.

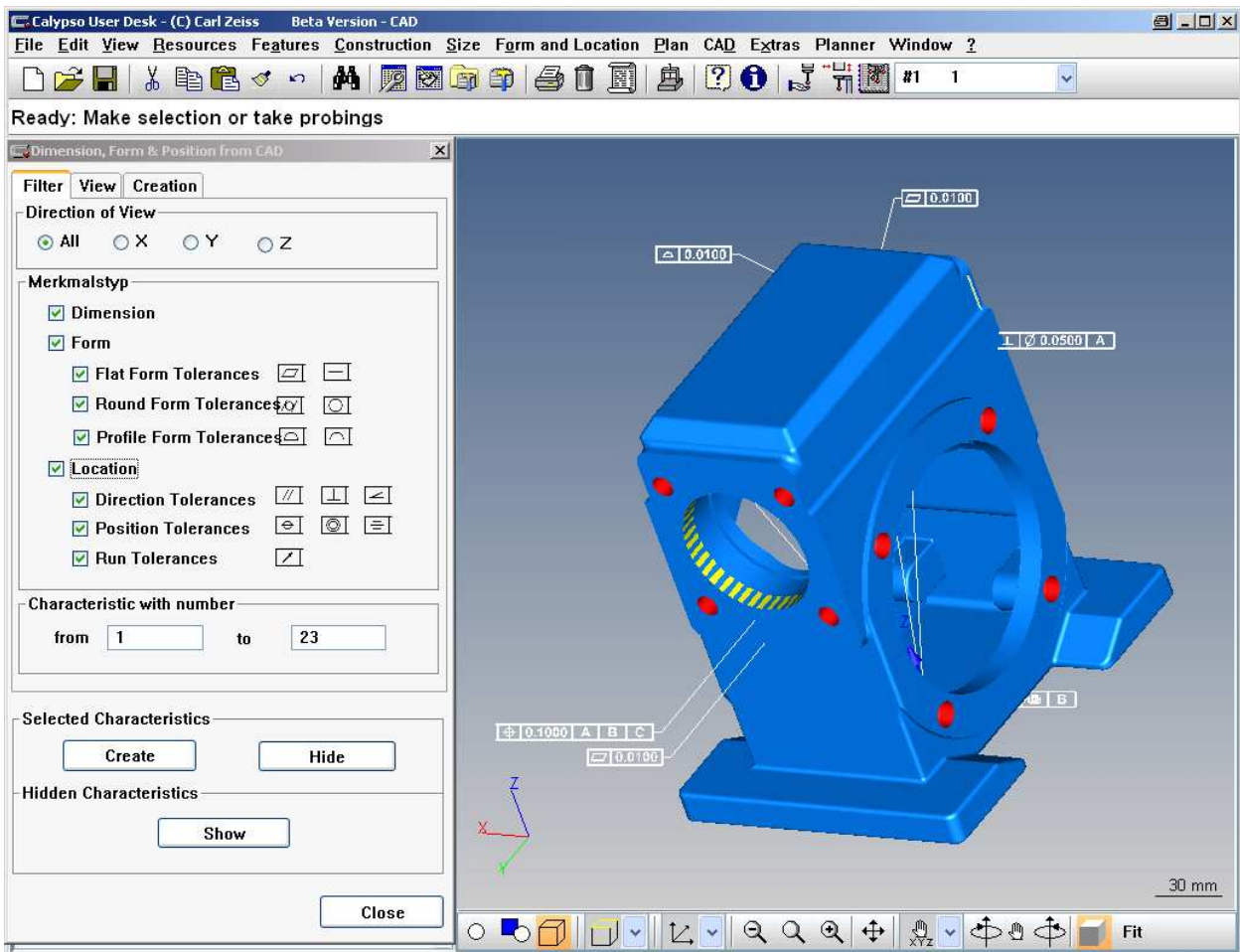


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## 2.1.2 Transfer Dimension, Form and Location Info from CAD Model **MOVIE!** AF-00074

### Application:

Dimensional data as well as form and location data contained in CAD models (CatiaV format only) can be extracted and directly imported to characteristics of a measurement plan. The selected data is displayed in the graphics window:



### Call:

With the CAD model loaded, select 'CAD Model Control' and 'Display Form and Location' from the 'CAD' menu.

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### 2.1.3 Alignment by Iteration for EagleEye

AF-00016

#### **Application:**

Should an alignment by iteration be necessary when using the optical EagleEye sensor to measure freeform surfaces (e.g. with Holos or DMIS-Engine via CMM-OS), the required time needed for the alignment can be **reduced considerably**.

In doing so, the optical sensor is used **only once** to gather data in form of a point cloud. For each iteration the data is then transformed to the computed alignment before the features for the alignment are extracted.

Therefore the multiple measurement of the alignment features required previously is eliminated.

#### **Call:**

This function is controlled directly by the software application in use ( e.g. Holos or DMIS-Engine).

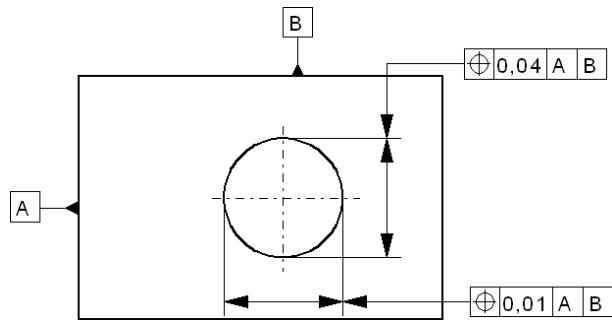
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## 2.1.4 Rectangular Tolerance Zone for True Pos and Best-Fit of Bore Pattern **MOVIE!** AF-00028

### Application:

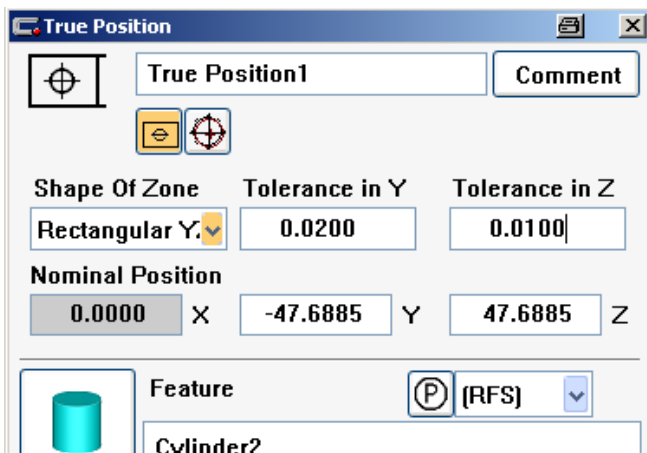
The requirement for a rectangular tolerance zone for true position can be recognized by the two true position tolerances for a single feature, which are rotated by 90 degrees to each other.

Calypso now features the selection of this form of tolerance zone together with the separate input of both tolerance values.



### Call:

'Rectangular' Shape of Zone is selected in the true position characteristic where also both of the associated tolerance values are entered subsequently.



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## 2.1.5 Recall Feature Points from Cylinder for Circle Feature

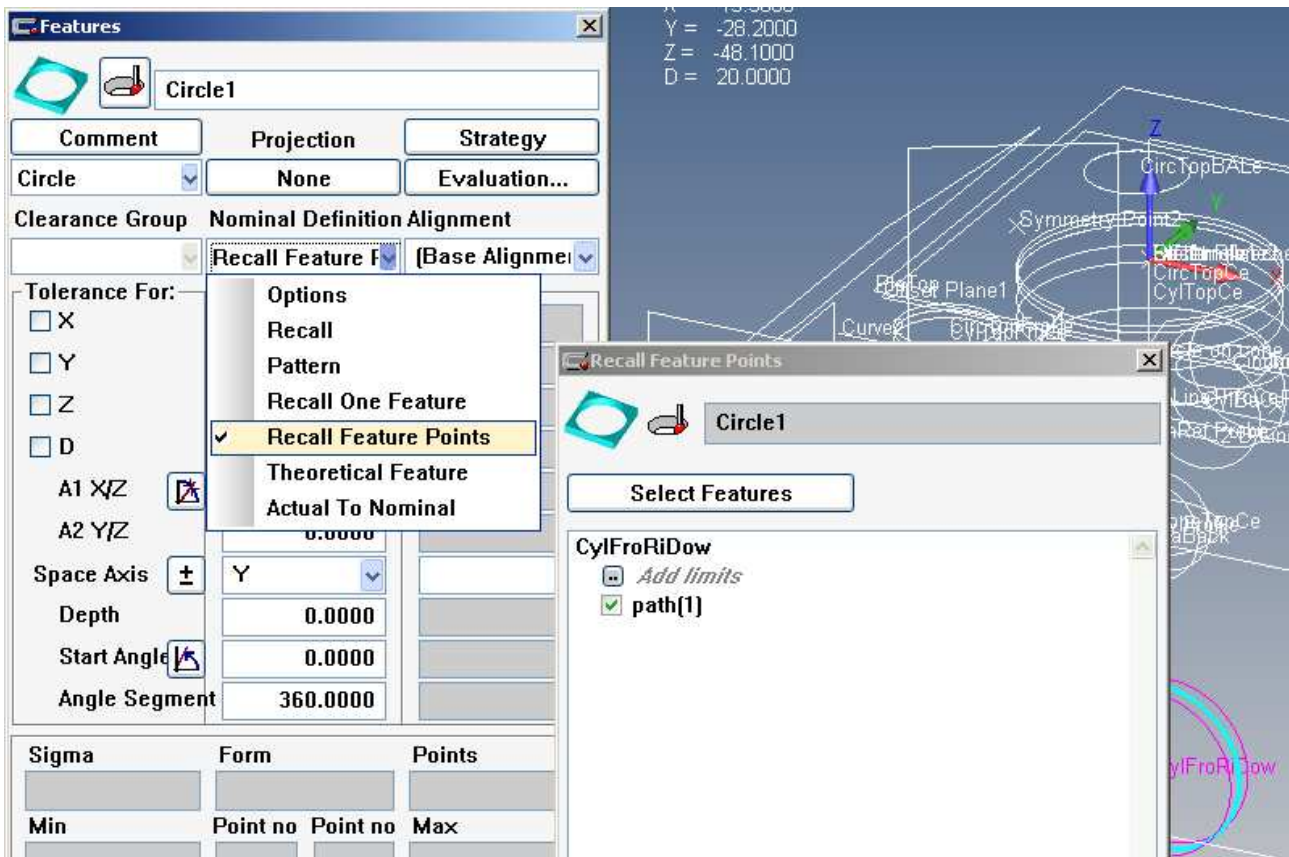
AF-00043

### Application:

For additional evaluation purposes, scanning paths of existing external or internal cylinder features in a measurement plan can be used to create new circle features by utilising the function 'Recall Feature Points'.

### Call:

In the new 'Circle' feature, select 'Recall Feature Points' and the required path from the Nominal Definition menu.



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## 2.2 New Features – Evaluation and Result

### 2.2.1 Documentation of Single Point Information for Form Measurements

AF-00096

#### Application:

For analyzing form inspection results, detailed information for every single point is often required.

This additional function enables the complete documentation of every single point used for the **Profile** evaluation of a **Line** (by using a 3D Curve feature) or a **Surface** (by using a freeform surface feature).

The printout shows:

- Consecutive numbering of single points.
- Perpendicular footpoint coordinates in reference coordinate system.
- Point coordinates, corrected by stylus radius and filtered.
- Deviation from perpendicular footpoint to point.
- Upper and lower tolerance.
- Tolerance deviation or histogram.
- Points with highest and lowest deviation are highlighted.
- Result displayed in colour according to the tolerance status.

Formplot: DIN Linienform1		Calypso		Carl Zeiss		Datum		28. Januar 2009	
Datei... Bearbeiten		4.10.-beta.0				Auftrag		2	
Teil-Nummer		KMG		Zeichnungsnummer		Abteilung:		Master	
179		Prismo		* drawingno *		Prüfer			
Prüfplan						Unterschrift:		DIN Linienform1	
point deviation									
		Ishwert	Sollwert	Obere Tol.	Untere Tol.	Abweichung			
1*	X	-2,4004	-2,4004			0,0000			
	Y	8,1013	8,1067			0,0046			
	Z	-32,6074	-32,6074			0,0000			
	Dist	0,0046		0,0500	-0,1500	-0,0846		-	
	X	0,7400	-0,7400			0,0000			
2	Y	8,0581	8,1067			-0,0506			
	Z	-33,8950	-33,8950			0,0000			
	Dist	0,0506		0,0500	-0,1500	-0,0506		0,0008	
	X	0,7401	0,7401			0,0000			
	Y	8,0446	8,1067			-0,0620			
3	Z	-33,8982	-33,8982			0,0000			
	Dist	0,0520		0,0500	-0,1500	-0,0020		0,0120	
	X	2,0571	2,0571			0,0000			
	Y	8,1181	8,1067			0,0114			
	Z	-32,9982	-32,9982			0,0000			
4	Dist	0,0114		0,0500	-0,1500	-0,0114			
	X	3,4040	3,4040			0,0000			
	Y	8,1675	8,1067			0,0608			
	Z	-31,3230	-31,3230			-0,0557			
	Dist	0,0608		0,0500	-0,1500	-0,0000		-	
5	X	4,6270	4,6270			0,0000			
	Y	8,0510	8,1067			-0,0557			
	Z	-29,8950	-29,8950			0,0000			
	Dist	0,0557		0,0500	-0,1500	-0,0557		0,0057	
	X	5,0460	5,0460			0,0000			
6	Y	8,1402	8,1067			-0,0338			
	Z	-31,8490	-31,8490			0,0000			
	Dist	0,0338		0,0500	-0,1500	-0,0338			
	X	5,1990	5,1990			0,0000			
	Y	8,0882	8,1067			-0,0185			
7	Z	-33,8420	-33,8420			0,0000			
	Dist	0,0185		0,0500	-0,1500	-0,0185			
	X	5,0870	5,0870			0,0000			
	Y	8,0958	8,1067			-0,0110			
	Z	-35,8370	-35,8370			0,0000			
8	Dist	0,0110		0,0500	-0,1500	-0,0110			
	X	4,7107	4,7107			0,0000			
	Y	8,1140	8,1067			0,0082			
	Z	-37,7999	-37,7999			0,0000			
	Dist	0,0082		0,0500	-0,1500	-0,0082			
9	X	4,0759	4,0759			0,0000			
	Y	8,0778	8,1067			-0,0289			
	Z	-39,5949	-39,5949			0,0000			
	Dist	0,0289		0,0500	-0,1500	-0,0289			
	X	3,1989	3,1989			0,0000			
10	Y	8,0435	8,1067			-0,0631			
	Z	-41,4889	-41,4889			0,0000			
	Dist	0,0631		0,0500	-0,1500	-0,0631		0,0131	
	X	2,0880	2,0880			0,0000			
	Y	8,1203	8,1067			-0,0138			
11	Z	-43,1500	-43,1500			0,0000			
	Dist	0,0138		0,0500	-0,1500	-0,0138			
	X	0,7640	0,7640			0,0000			
	Y	8,1012	8,1067			-0,0055			
	Z	-44,8490	-44,8490			0,0000			
12	Dist	0,0055		0,0500	-0,1500	-0,0055			
	X	-0,7462	-0,7462			0,0000			
	Y	8,0340	8,1067			-0,0727			
	Z	-45,9587	-45,9587			0,0000			
	Dist	0,0727		0,0500	-0,1500	-0,0727		0,0227	
13	X	-2,4150	-2,4150			0,0000			
	Y	8,0565	8,1067			-0,0512			
	Z	-47,0560	-47,0560			0,0000			
	Dist	0,0512		0,0500	-0,1500	-0,0512		0,0012	
	X	-4,2152	-4,2152			0,0000			
14	Y	8,0701	8,1067			-0,0368			
	Z	-47,9216	-47,9216			0,0000			
	Dist	0,0368		0,0500	-0,1500	-0,0368			
	X								
	Y								

#### Call:

The 'Point List' is selected from the 'Graphic Output' function of the form evaluation characteristic.

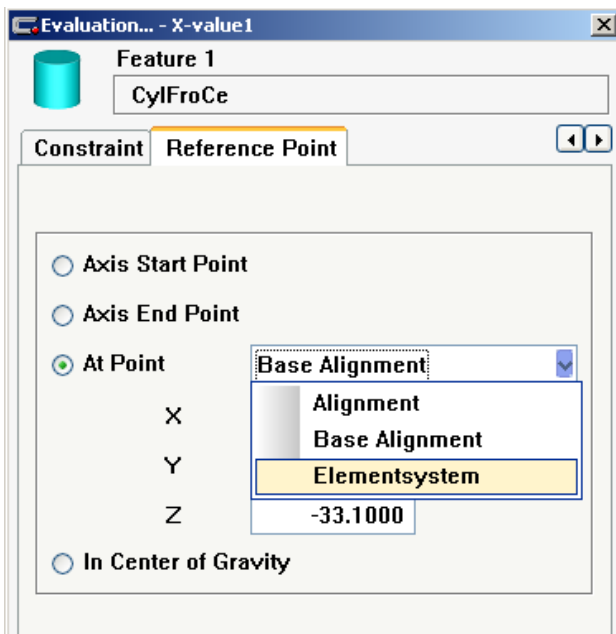
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### Application:

In earlier versions, the tolerancing of feature elements in reference to a user defined reference point was only possible in Base Alignment coordinates. This function has been extended in order to enable the selection of any coordinate system for the reference point definition.

### Call:

In the characteristic click on the selected feature with the right mouse button and the page is opened:



If 'At Point' is used to define the reference point, the desired alignment can then be selected from the list of all coordinate systems available.

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## 2.2.3 Extended Printout of Alignment Data

AF-00127

### Application:

For improved comparability with other printout formats, the printout of alignment data in Calypso has been extended by the 'Plane rotation' value. This value is calculated by adding the plane angle to the tilt direction and is displayed as a value between -180 and +180 degrees.

Alignment1	Alignment		
Spatial Rotation	PlaTop		
Planar Rotation	PlaFron		
X Origin	Intersection2Plane-Plane		
Y Origin	PlaFron		
Z Origin	PlaTop		
X	-0.2175	Tilt Direction Y/X	345.6496
Y	-32.1815	Angle Of Inclination	0.0125
Z	0.0079	Plane Angle Y/X	14.3918
Delta Value	32.4089	Plane rotation	0.0414

### Call:

Not necessary. The output is automatically included in all printouts.

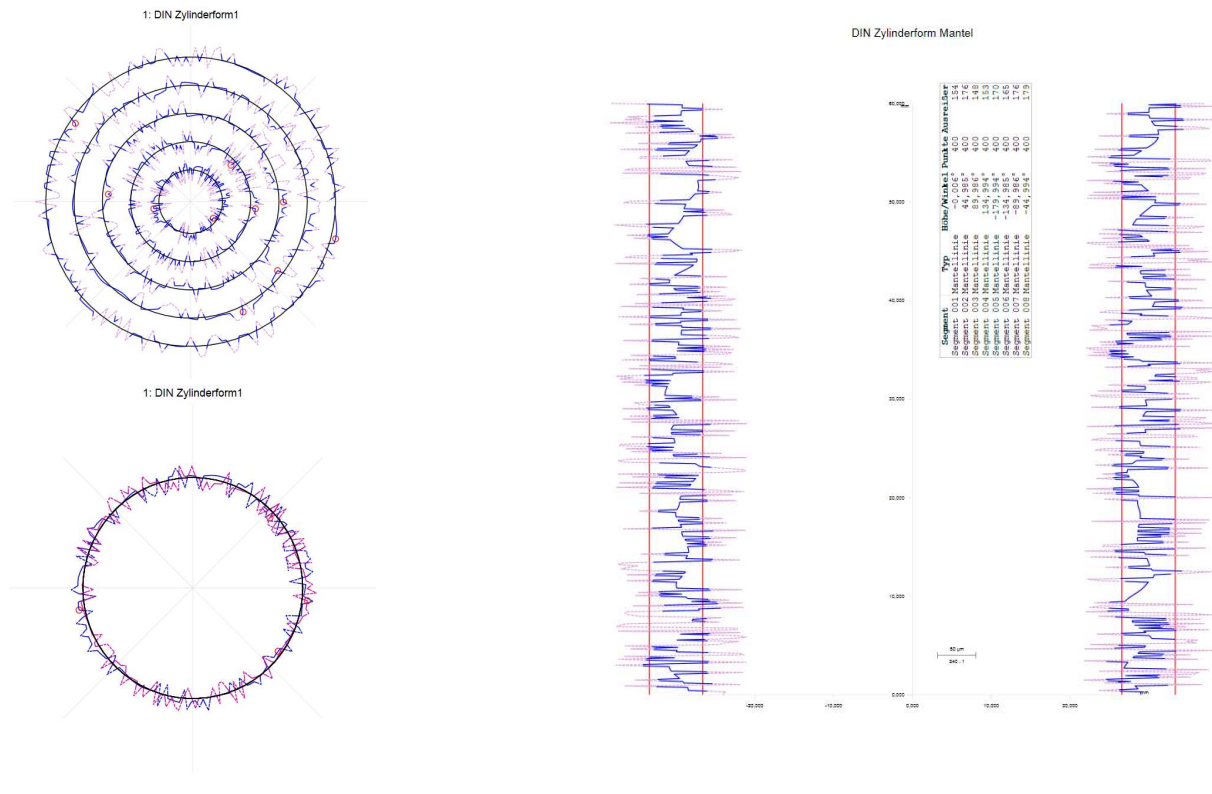
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## 2.2.4 Cylindricity Plot with Surface Lines

AF-00024

### Application:

The surface lines of a cylinder feature can now be displayed in the cylndricity plot by utilizing the Graphics Element function. Two opposite surface lines per plot are shown. A data table containing the numeric values of the cylinder evaluation (section height of circle paths, angular position of the surface lines etc.) is included in the surface line plot.



### Call:

The measured cylinder feature to be evaluated must contain surface lines. Using the 'Graphics Element', select the desired characteristic for cylindricity and the surface line template.

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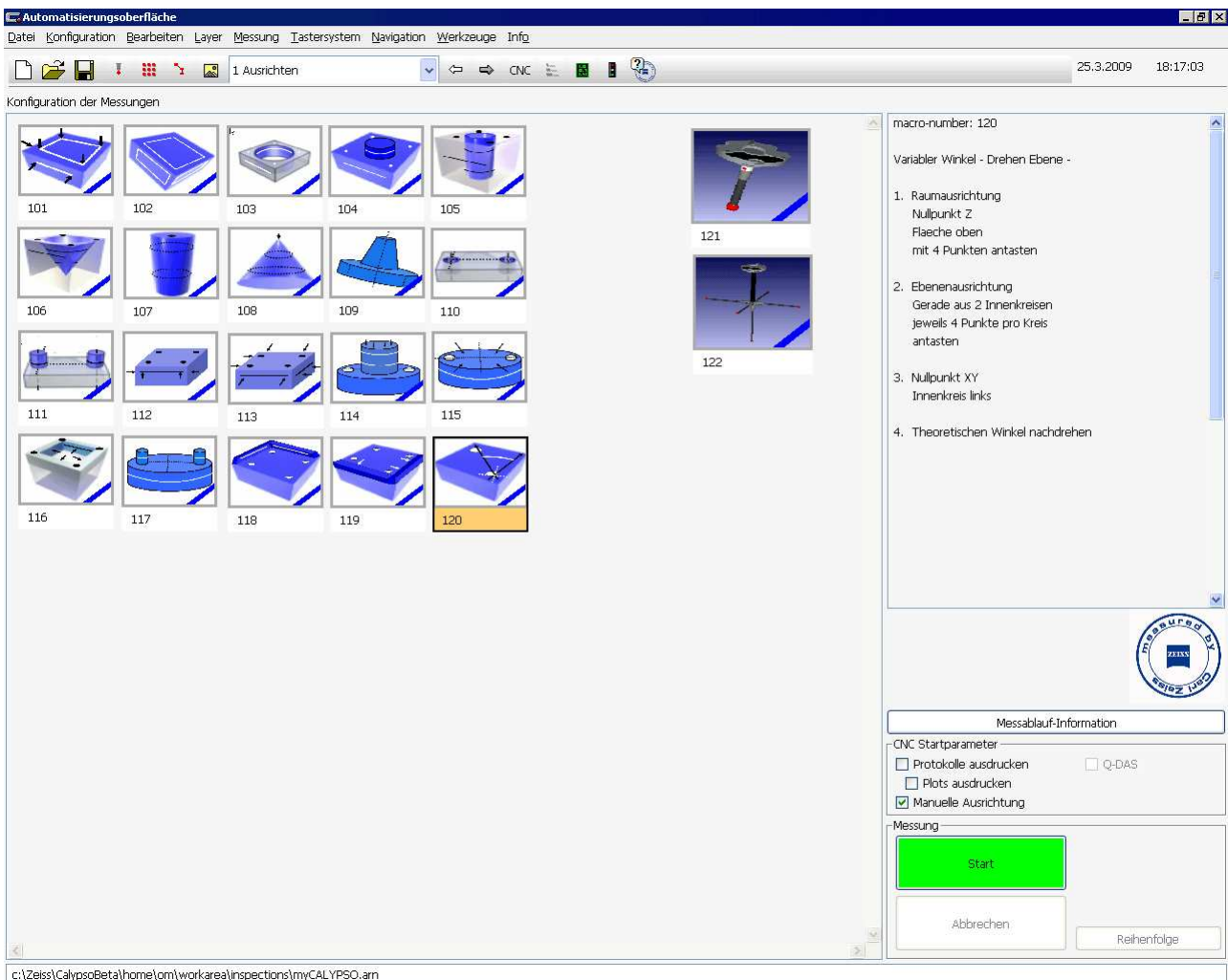
## 2.3 New Features - Operation

### 2.3.1 Simple Handling with 'myCALYPSO' (Option)

AF-00122

#### Application:

**myCalypso** provides a significantly simplified user interface for accomplishing many measuring tasks. The automated interface is used to start macros which guide the user from stylus system qualification through to the final evaluation of measuring results.



#### Call:

Used as the main application, myCALYPSO starts directly. Used as an option with Calypso the interface is opened from the 'Plan', 'myCALYPSO Macros' menu.

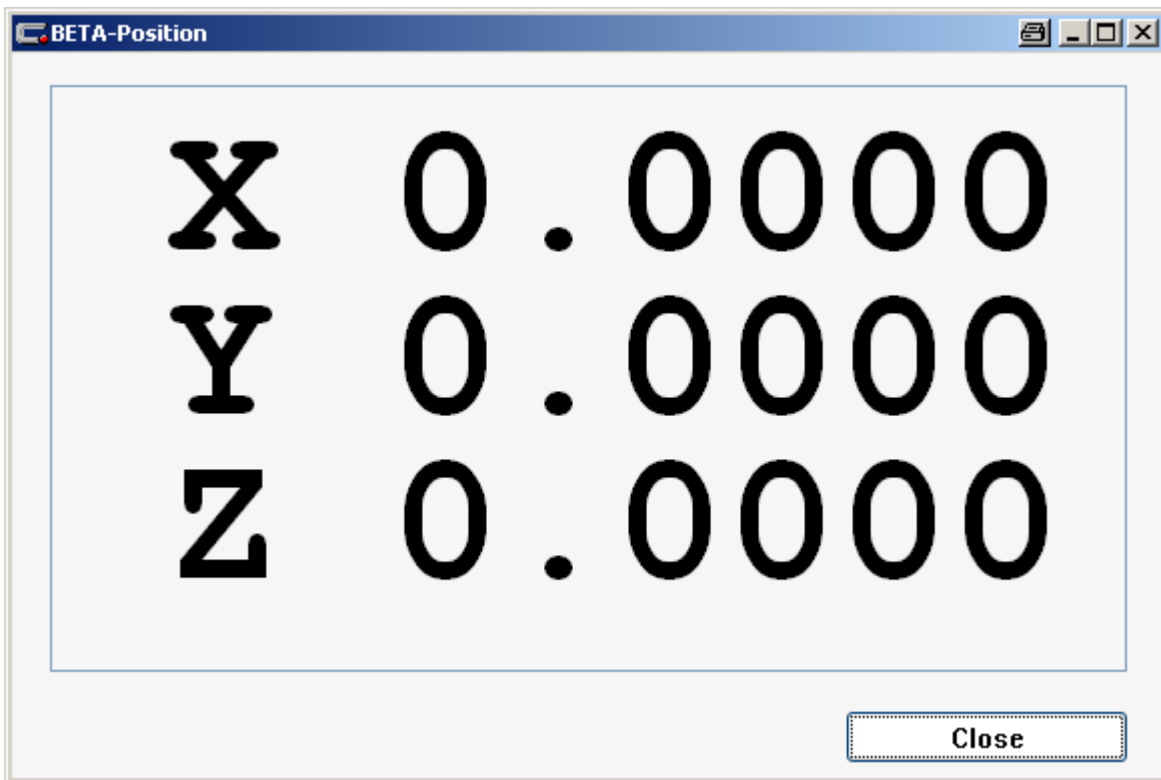
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### 2.3.2 Optimized Display of Coordinates via Traffic Light Window *MOVIE!*

AF-00015

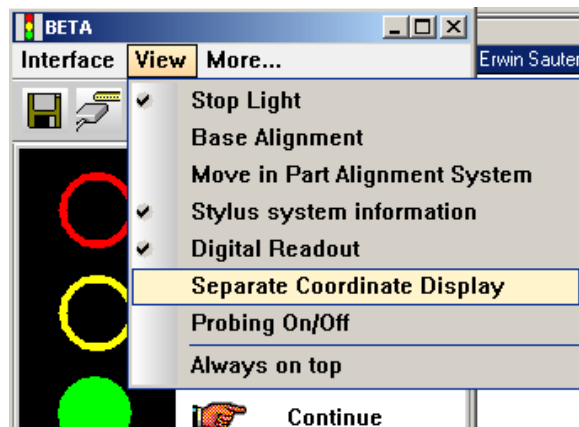
#### Application:

During manual measurement the display of the coordinates of the current position is often helpful. These can now be shown on the screen in a separate, size adjustable window.



#### Call:

Select 'Separate Coordinate Display' from the 'View' menu in the traffic light window.



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### 2.3.3 Extended Dialog for 'Point' Feature

AF-00127-2

#### Application:

Establishing 'Point distance' characteristics has been simplified by enabling the user to select these directly from the 'Point' feature dialog and determine tolerance values.

#### Call:

Open 'Point' feature and select 'PtDist' to create a 'Point distance' characteristic.

**Features** Point1

Comment Projection Strategy  
None Evaluation...

Clearance Group Nominal Definition Alignment  
CP +X Options [Base Alignment]

Tolerance For:

	Nominal	Actual
<input type="checkbox"/> X	40.0000	40.2000
<input type="checkbox"/> Y	-0.5000	-0.4766
<input type="checkbox"/> Z	-31.9000	-31.9288
i	1.0000	1.0000
j	0.0000	0.0000
k	0.0000	0.0000
<input checked="" type="checkbox"/> PtDist		0.2034

ISO 286 Tolerance Classes  
Fine

Upper Tolerance	Lower Tolerance	Identifier
0.5000 <input checked="" type="checkbox"/>	-0.5000 <input checked="" type="checkbox"/>	Space Point Dist

Sigma 0.0000 Form 0.0000 Points 1  
Min Point no Point no Max

OK Reset

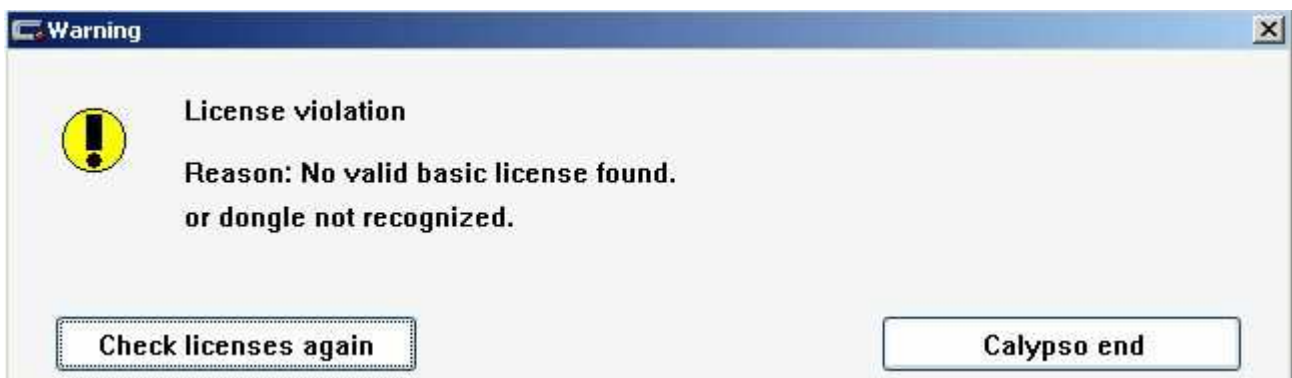
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### 2.3.4 Enhanced Dialog for License Violation

AF-00087

#### Application:

Several instances can accidentally cause a license violation while working with Calypso (e.g. hardware address changed or dongle was removed etc.). Quite often, the reason for the warning was not immediately obvious. Now the warning messages have been improved and with the 'Check licenses again' button the user is given the opportunity to correct the cause of the warning and continue operation.



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### 2.3.5 Adapted User Privilege for Editing Measurement Plans

**MOVIE!**

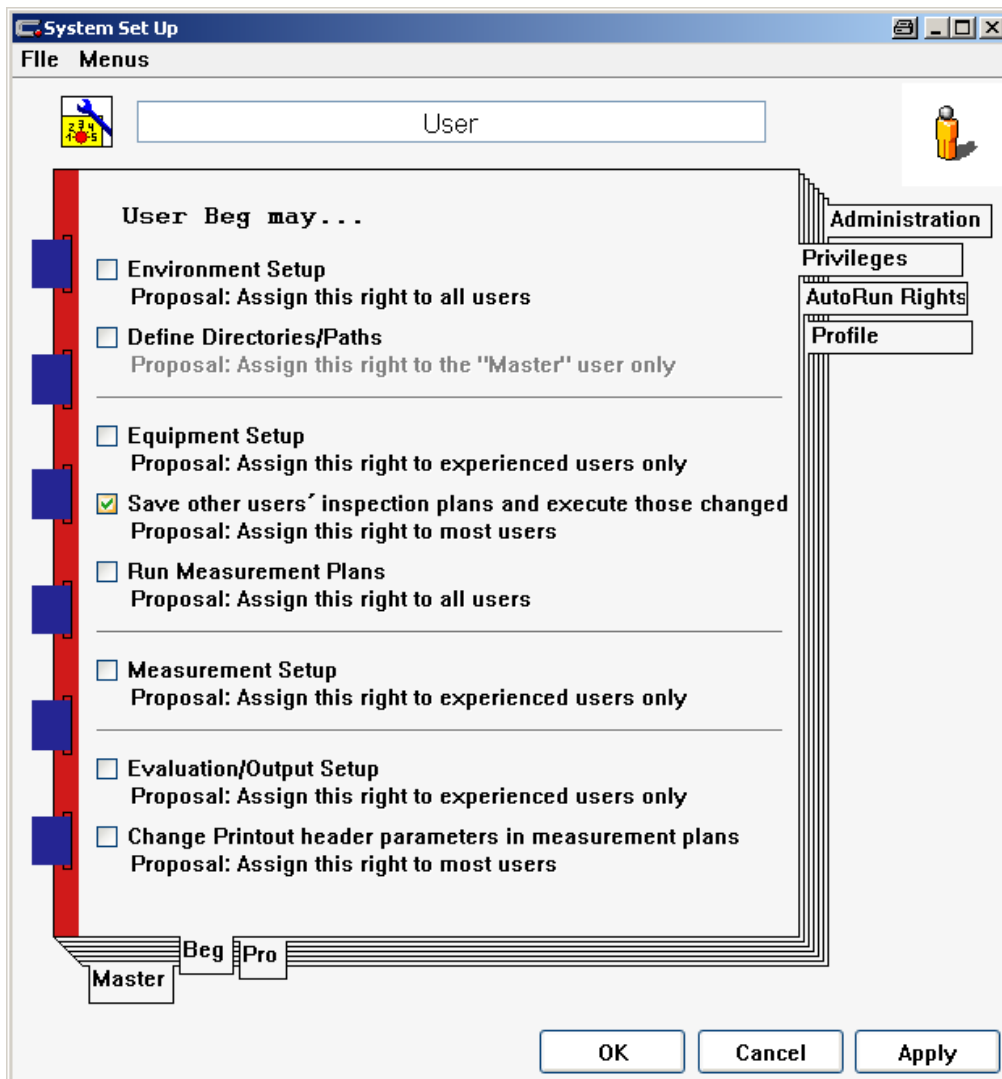
AF-00008

#### Application:

For increased security the user privilege for saving and executing measurement plans has been modified. Users without this privilege can only execute measurement plans created by other users if they have not been changed. Though changes to a plan can still be carried out by unauthorized users the measurement plan in question can no longer be started or saved subsequently.

#### Call:

Select 'User' and 'Privileges' in the Workroom.



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### 2.3.6 Planner – Simplified Positioning of Workpieces and Fixtures

AF-00044

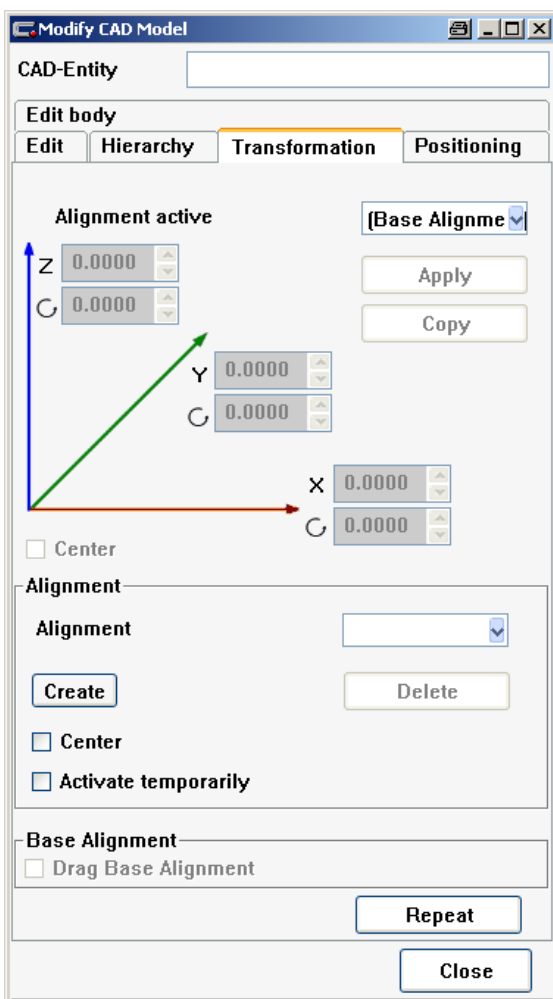
#### Application:

This new function facilitates the preparation involved in creating measurement plans offline using CAD models. The possibility to **create and utilize local coordinate systems** makes for comfortable positioning of all workpieces, fixtures, reference spheres and probe racks on the virtual machine.

For easier handling, models consisting of several **individual components** can also be joined together as a **group**.

#### Call:

Via the 'CAD', 'Modify CAD Entities ...' menu:



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### 2.3.7 Monitor CMM Range while Generating Measurement Plan

AF-00045

#### Application:

While generating a measurement plan in **simulation mode** with the collision observation switched on, Calypso continuously checks that the probing system actually is in the **measuring range of the selected coordinate measuring machine**. If the range is exceeded, an acoustic warning is given and the incident is noted in the collision list.

#### Call:

As in earlier versions, via the menu 'Planner', 'Stylus System Simulation'



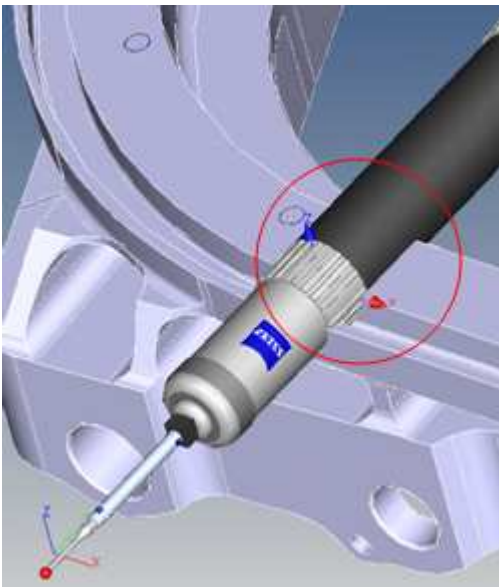
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### 2.3.8 Simulated Collision Checking for Stylus System and Probe

AF-00046

#### Application:

A further improvement regarding safety during measurement operation has been achieved by extending the collision observation functionality. The **selected probe** as well as the **complete active stylus system** are now incorporated in the collision observation.



Example of a collision with the probe.

#### Call:

As in earlier versions, via the menu 'Planner', 'Stylus System Simulation'



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### 2.3.9 Surface Measurement with Single Points

AF-00000

#### Application:

Due to large deviation, it is possible to select the wrong surface during surface measurement.

#### Manual Case:

Solutions for error recognition:

1. Pre-define search distance
2. Check the normals
3. User rejects result

Error solution:

1. Search for nearest surface with correct normal
2. Allow choice of several surfaces near selection
3. User must select correct surface

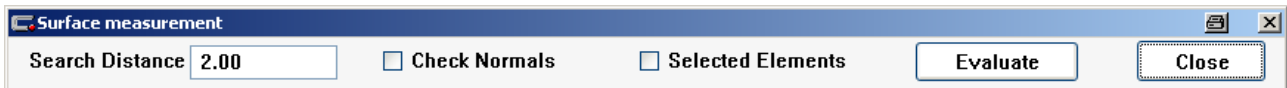
#### CNC-run

Solution:

Preset selection of correct surface

#### Call:

Via the 'Features', 'Surface measurement with single points' menu.



1. Switching to Surface Measurement with Single Points opens a small window. When this window is closed the surface measurement is switched off and feature recognition is activated.

2. The window allows the following input:

#### Fields:

Enter search distance

#### Checkboxes:

Check normals

Select elements (selected surfaces)

#### Buttons:

Re-evaluate current point

Close

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## 2.4 New Features – Stylus Systems and Qualification

### 2.4.1 Faster Stylus System Change Prepared

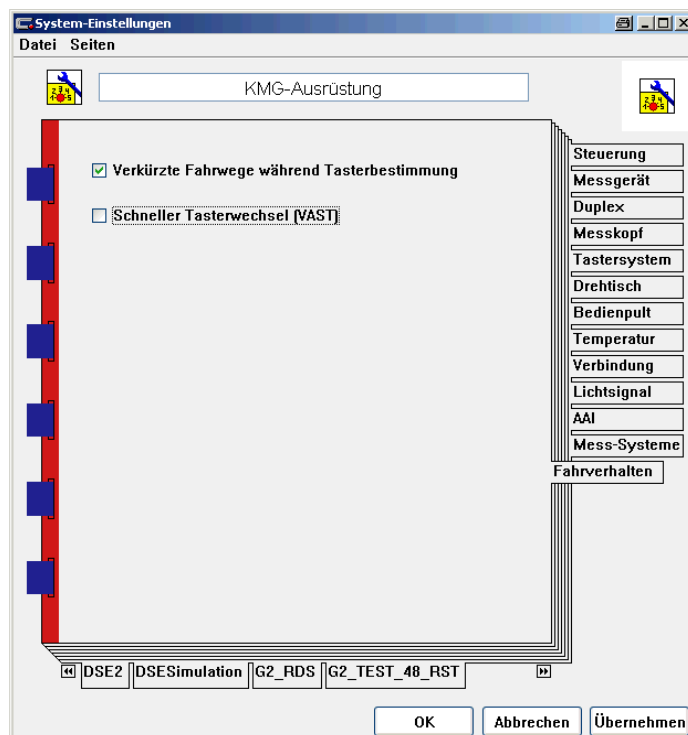
AF-00057

#### Application:

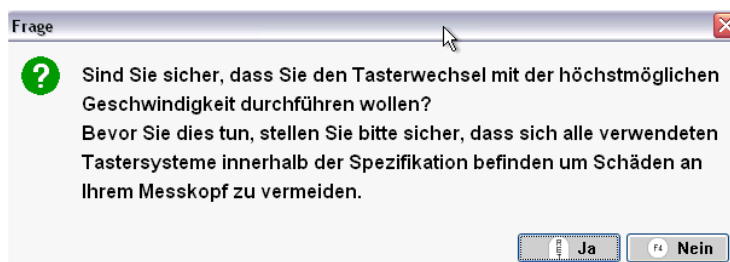
For VAST, VAST-XT und VAST-DT, only in conjunction with C99 controllers and firmware 23.xx and newer!

#### Call:

By selecting the 'Movement' tab on the CMM workroom page the fast stylus system change mode can be switched on or off:



After activating, a safety warning is displayed to remind the user:



The user must assure that the stylus systems used all comply with the specifications regarding max. weight, torque and stylus length and that the assignment of the stylus systems to the respective holders in the probe rack are absolutely correct, as the stylus system change will now commence at top speed.

**Non observance can lead to damage of the complete system.**

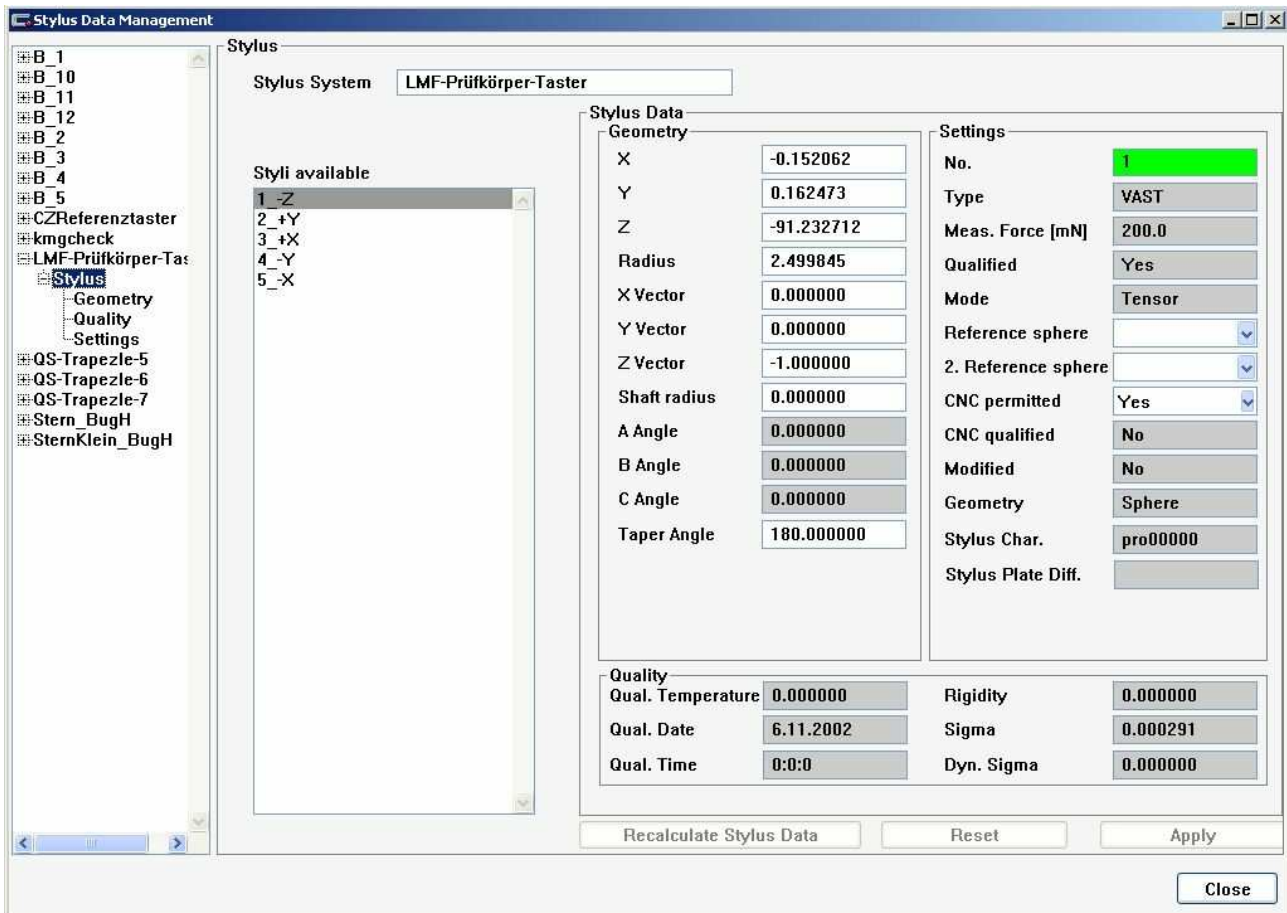
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## 2.4.2 New Probe Data Administration

AF-00071

### Application:

The user interface for the probe data administration has been totally redesigned and is therefore a lot more user-friendly.



### Call:

The screen is opened as in earlier versions by selecting the same symbol from the User Desk or Stylus System Qualification toolbars. Operational functions such as Copy or Delete can also be executed by right-clicking the respective stylus system in the left hand column.

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## 2.4.3 Movement

AF-00000

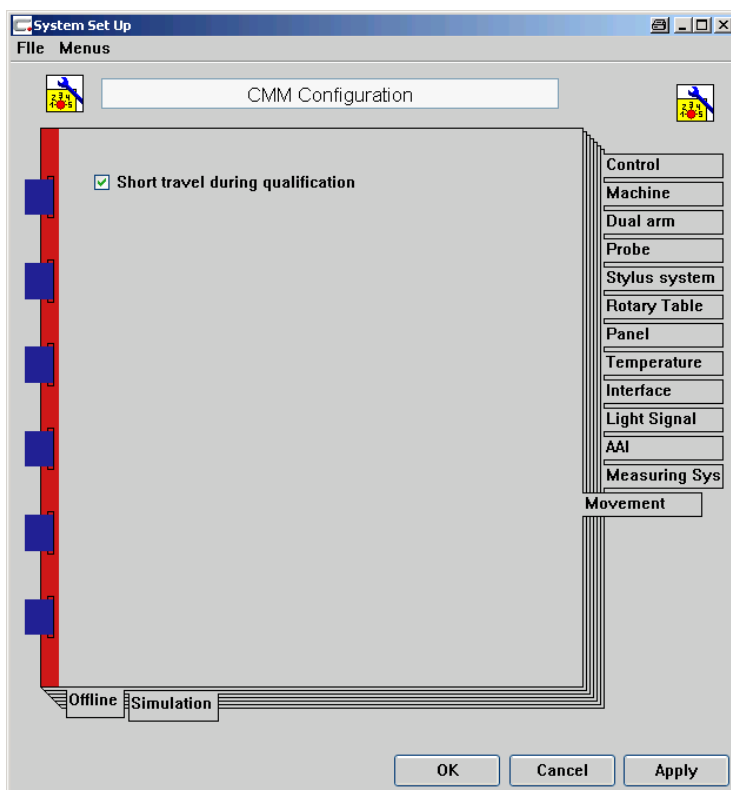
### Application:

With this new function the user is able to deactivate the enhanced probe route for stylus system qualification ("Short travel") introduced with release 4.8.

This function was added to comply with certain restrictions during qualification of complex stylus systems. By default, the enhanced movement is activated. By deactivating this function, the original probe routes for stylus system qualification will be used.

### Call:

'Movement' is selected from the 'CMM' page in the workroom.



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## 2.4.4 Optimized Rotation Position for Stylus Qualification

AF-00000

### **Application:**

The rotation positions during stylus system qualification in CNC-mode have changed with Calypso 4.10.

In older versions of Calypso, the indexing system (RDS, DSE, etc.) simply rotated at the current position. Now the rotation is always carried out at the section point of the A/B axes considering the longest stylus (a theoretical stylus with the maximum possible deflection of all styli in the selected stylus system).

The indexing system is therefore always positioned by this maximum distance (plus the clearance range of the reference sphere) above (in front of) the reference sphere in quill direction.

This results in shorter probe routes and additional collision prevention

### **Call:**

No call required.

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## 2.5 New Features – Curve Option

### 2.5.1 Digitize Circular Grooves with Rotary Table

AF-00007

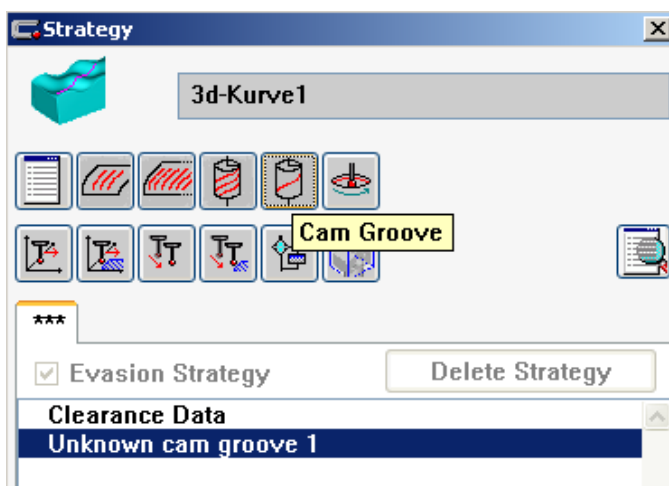
#### Application:

Circular (Cam) grooves are a special type of stroke curve. The difference between the two is the fact that a circular groove has no traverse warping and therefore can be digitized with a single scanning line, allowing digitizing to be conducted via rotary table motion.



#### Call:

Select Cam Groove from the 3D-Curve strategy window.



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## 2.5.2 Actuals Plot

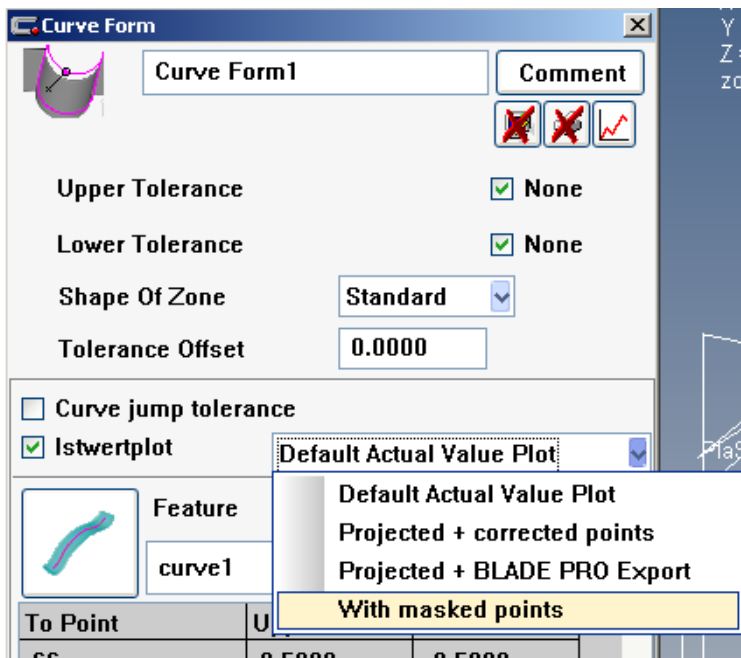
AF-00000

### Application:

This plot function can be used to display curve data in case of missing or undesired nominals. With this plot the user can now also select the output to be with or without masked points.

### Call:

Select 'Curve Form' from the 'Form and Location' menu



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### 2.5.3 TiMS Interface

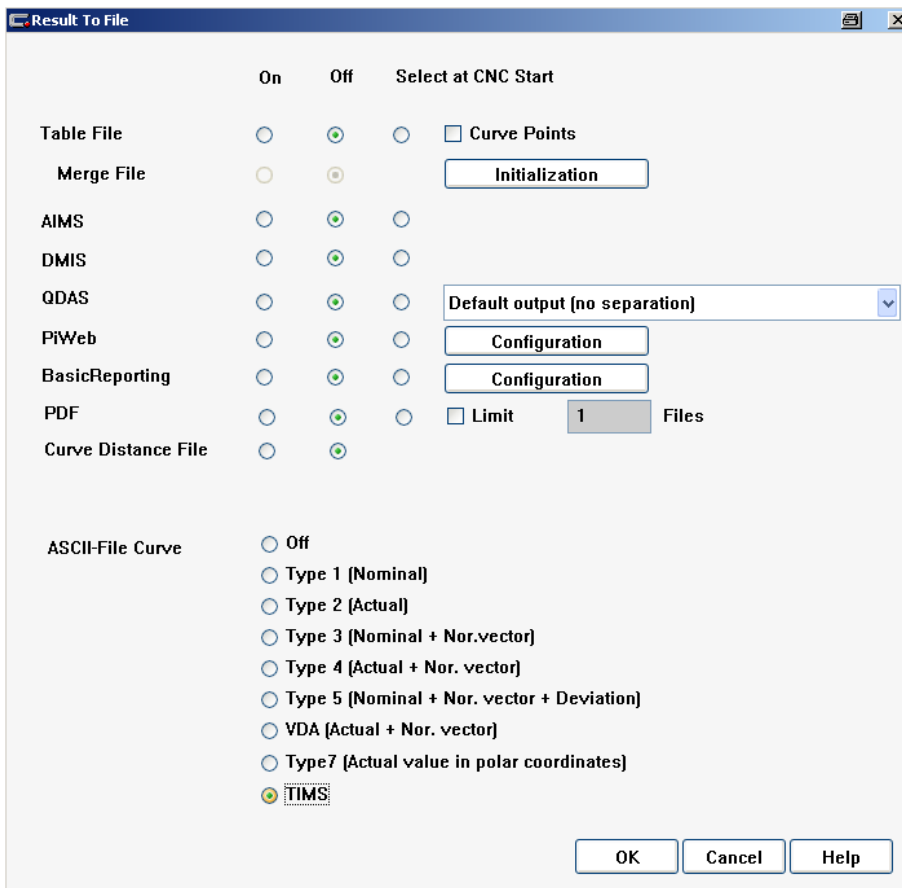
AF-00000

#### Application:

With Calypso 4.10 curve data can also be saved to ASCII file in the **TiMS** format. TiMS can then be used to import and evaluate the curve data for special requirements.

#### Call:

Select TiMS from the 'Resources', 'Results to file...' menu:



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## 2.6 New Features - PCM Option

---

### 2.6.1 Access to Measured Point Stylus Data

AF-00027

#### Application:

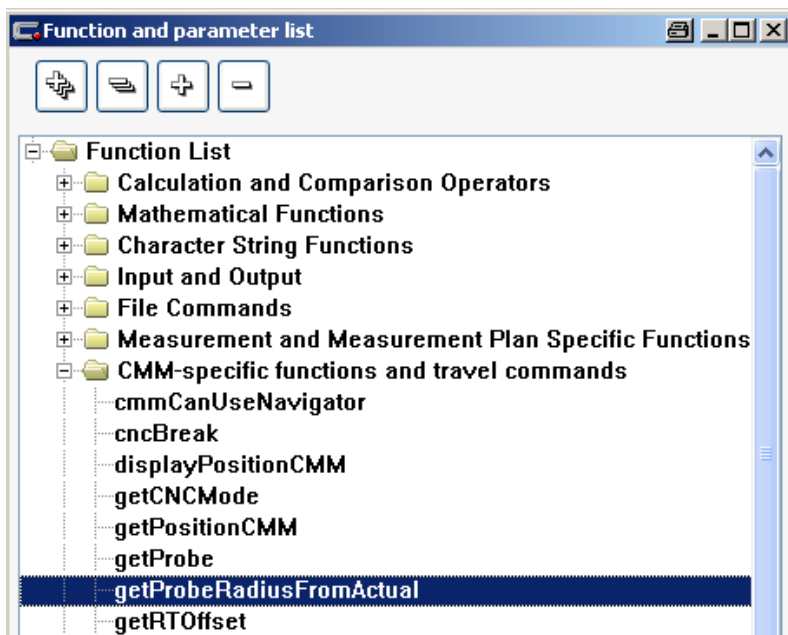
In many cases knowledge of the stylus radius used for measuring a certain point or feature is necessary for subsequent evaluation using PCM.

The following PCM command makes this possible:

```
getProbeRadiusFromActual(Featurename[,Pointindex],[Elementindex])
```

#### Call:

The function can be called from the Parameter Function list:



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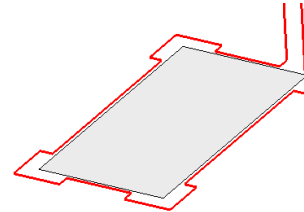
## 2.7 New Features METROTOM

### 2.7.1 Pin Macro - Rectangular Path

AF-00002

#### Application:

The new strategy 'Rectangular Path' is especially suitable for programming connector housings and pins efficiently. In CNC mode rectangles are measured with 4 lines.



Example: Outer rectangle path

#### Call:

Select Rectangular Path from strategy window of 'Rectangle' feature or extract from CAD model.

A screenshot of the 'Rectangular Path' dialog box. The window title is 'Rectangular Path'. It contains several sections: 'Presettings' with buttons for 'Presettings', 'Calculate', and 'Datum Features'; a list of radio buttons for 'Expected Tolerance' (0.0000), 'Speed' (3.0000), 'Step Width' (2.0000), and 'Number of Points' (0); a 'Stylus' dropdown menu set to '#1 1'; a 'Single points' checkbox; a 'Path' section with 'Measuring Height' (0.0000), two '1.0000' input fields, a diagram of a rectangle with dashed lines and labels 'L' and 'B', and two more '1.0000' input fields; a 'Move to Safety Position' checkbox; and 'OK' and 'Reset' buttons at the bottom.

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## 2.7.2 METROTOM – Offline

AF-00090

### **Application:**

With Calypso 4.10 the 'COMPUTERTOMOGRAPH' software package is also optionally offered for sale for application without a METROTOM machine, thus enabling users to create measurement plans and carry out evaluations based on volume files supplied by METROTOM users.

### **Call:**

Only signed volume data files of the type \*.uint16\_scv can be imported using the 'Open file' function for selecting the CT data set. Import of Volume Graphics Info files is no longer available.

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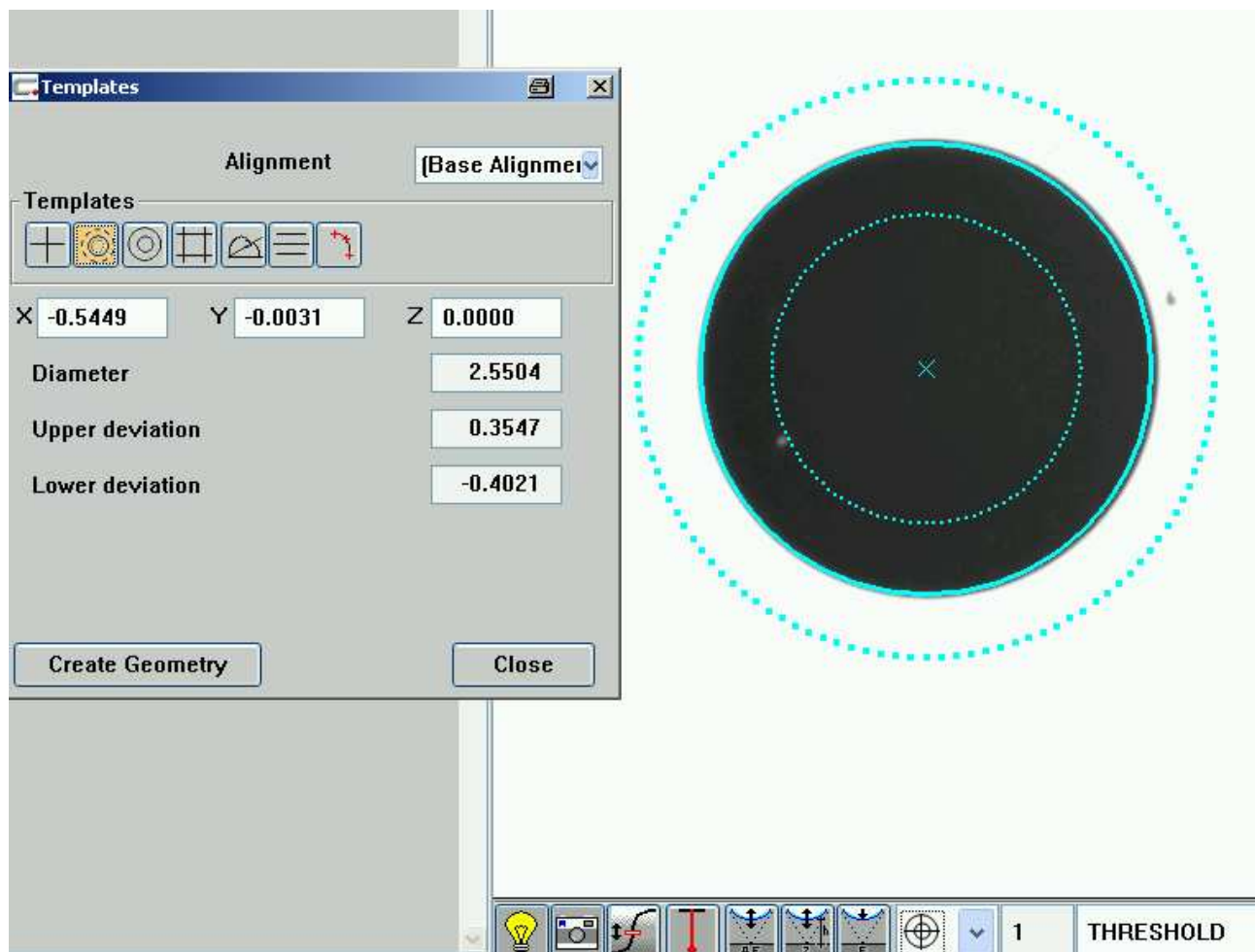
## 2.8 New Features O-Inspect

### 2.8.1 Template measurement

AF-66

#### Application:

This new function enables fast manual measurements (analogical to a measuring microscope) directly by using templates shown on the computer screen.



#### Call:

The 'Templates' window is opened by selecting the template icon from the optical bar. Here you can select between point, circle, two-circle, rectangle, angle, line and radius templates.

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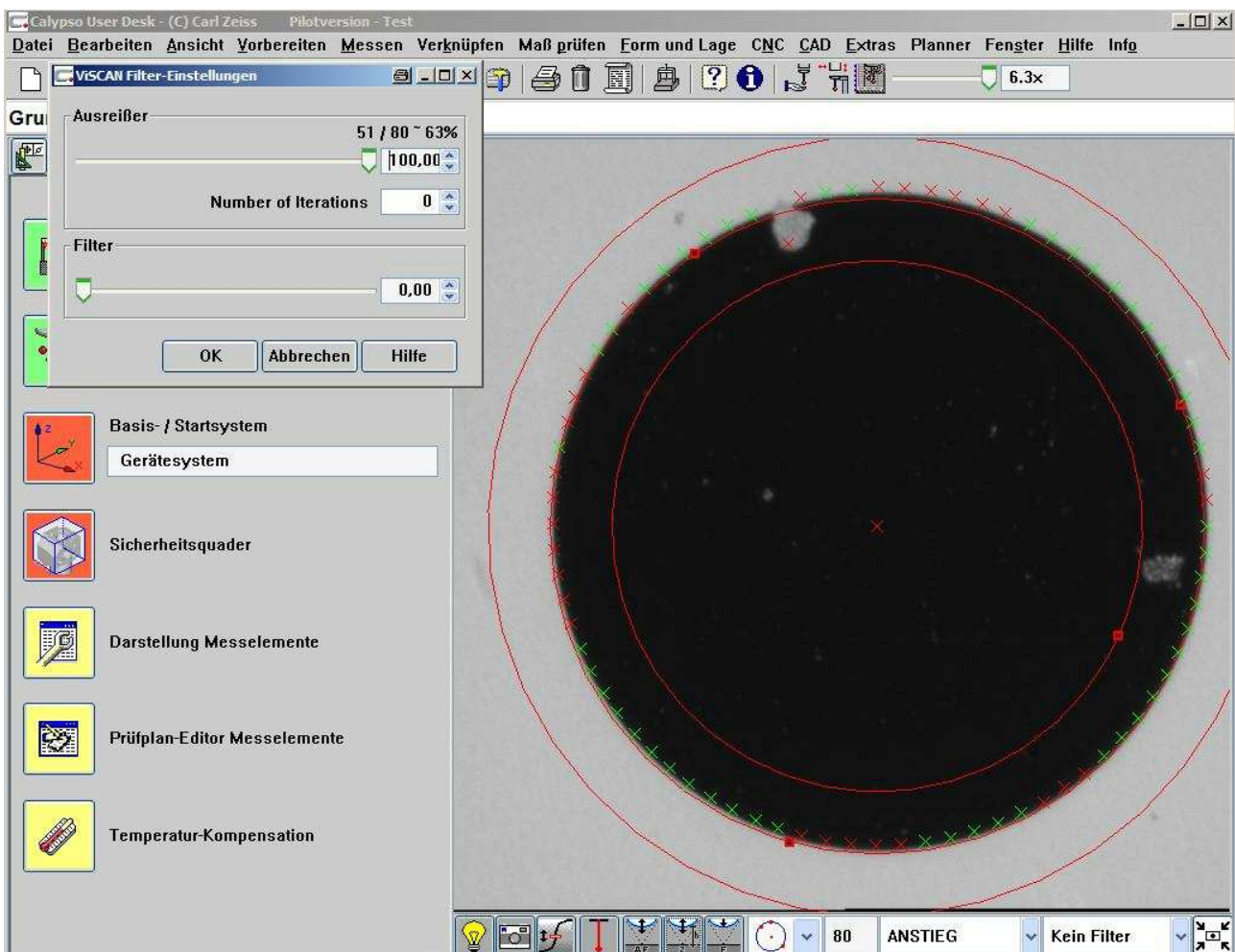
## 2.8.2 Outlier Filter in Camera Image

AF-00062

### Application:

This function can be used for eliminating outliers as well as for filtering individual segments for the optical strategies 'Circle', 'Circle section' and 'Line'.

### Call:



When probing the above elements, the window 'VISCAN Filter Settings' is displayed automatically and the desired outlier and filter factor can be selected. The values set when generating the measurement plan are used automatically for CNC runs. The setting can also be made here using the Setup Mode.

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## 2.8.3 Displaying the Camera Image in the Graphics Window

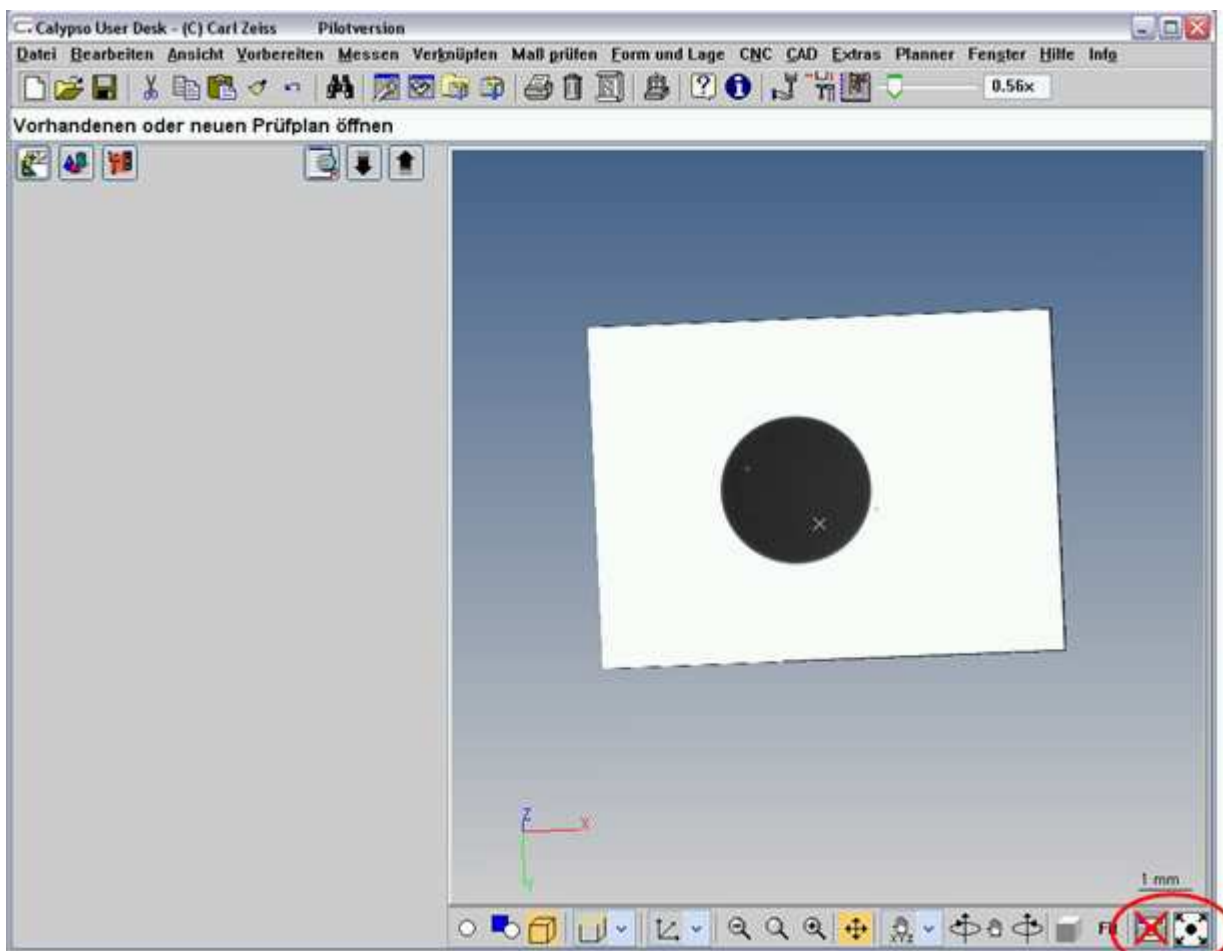
AF-00061

### Application:

Due to the direct integration of the camera image in the graphics window, changing between the CAD view and the camera image is considerably quicker and easier.

### Call:

There are two new buttons in the icon bar of the graphics window for this.



The left button in the area marked red switches the camera image off. The right button switches to the camera image, thus enabling measurement.

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## 2.8.4 Stepmode

AF-00063

### Application:

When taking optical measurements during CNC runs, it can be helpful to be able to **correct** the illumination and/or the camera settings **manually**. For this purpose, Stepmode can be used for a complete run or just for specific parts of the programme. The CNC run stops at the selected place in the programme so that the user can optimize the settings if necessary. After completing the adjustments, the CNC run is continued automatically.

### Call:

Step mode is initiated by selecting 'Step Mode' during CNC start or via the feature settings editor.

The screenshot shows the 'Start Measurement' dialog box with the following settings:

- Name:** OITest
- Comment:** (empty)
- Selection:**
  - Base Alignment
  - Start Alignment
  - Current Alignment: (dropdown menu)
  - All Characteristics
  - Current Selection
  - (dropdown menu)
  - Buttons: Printout header data, User Information
- Result:**
  - Use custom printout
  - Compact printout
  - Display plots
  - Print plots
  - Excel-printout
  - Send results to printer
  - PDF  PostScript
  - Clear existing results
  - Results to file:**
    - Table File
    - DMIS  AIMS  PiWeb
    - QDAS  DML
- CMM...:**
  - Order of run:** From Characteristic List (dropdown)
  - Navigate-Feature To Feature:** Use Clearance Plane (dropdown)
  - Run Mode:** Step Mode (dropdown menu)
    - Normal
    - Slow Through First Feature
    - Step Mode** (highlighted)
    - Manual
- Note:** (empty)

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## 2.8.5 Coaxial Illumination for O-Inspect

AF-00064

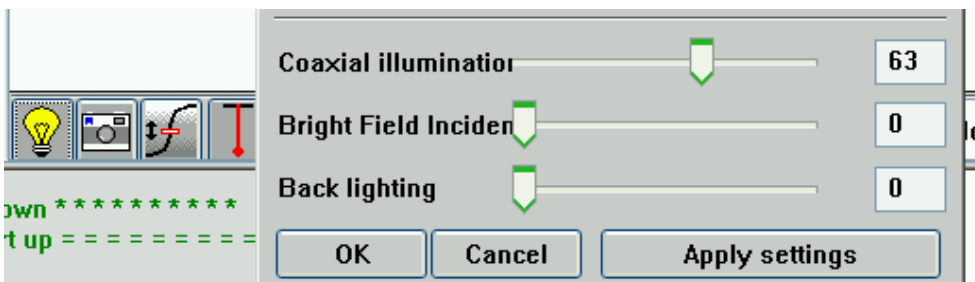
### Application:

The illumination and therefore the optical probing of certain workpieces can be improved by using coaxial lighting. This method illuminates the workpiece by passing a parallel light beam directly through the lens.



### Call:

Coaxial illumination is selected in the illumination settings dialog (open by clicking on the „light bulb“ icon on the optics toolbar).



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## 2.8.6 Scanning by Nominals

AF-00065

### **Application:**

Optical scanning by nominals is especially recommended for measuring 2D-curves taken from CAD models due to the immediate availability of the nominal data (probing position and direction). Measurements are taken at the light/dark transition at the nominal position according to the direction of the nominals respectively.

### **Call:**

Adopting nominal curve data from a CAD model is carried out via the menu ,CAD', ,Modification', ,Modify CAD Entities' according to the general description in the users manual for curve measurement.

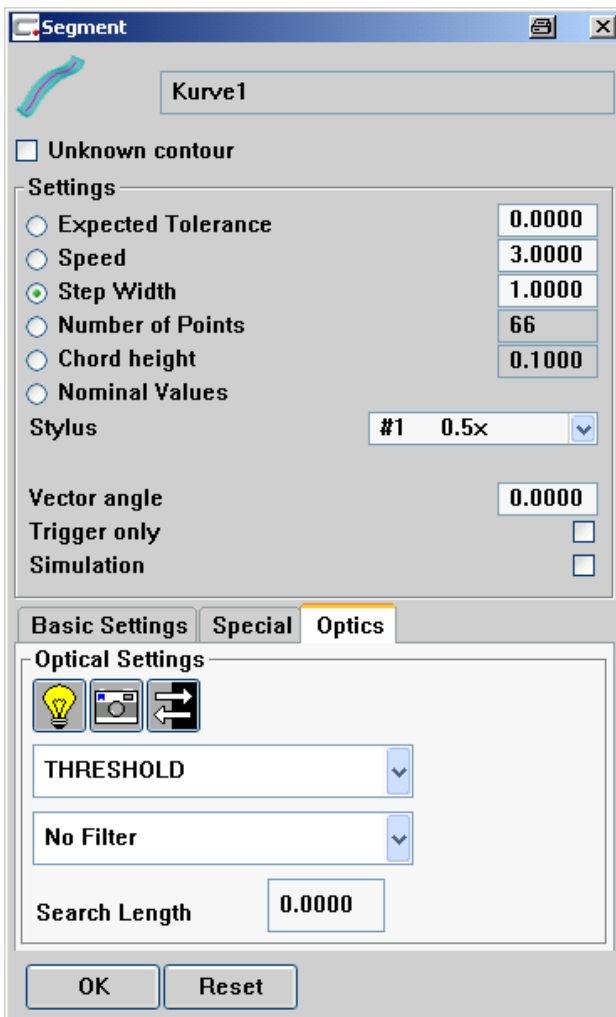
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## 2.8.7 Optical Settings for 2D-Curve Feature via Strategy Window

AF-00065

### Application:

This functionality, already implemented for 'Circle' and 'Line' features, is now also available for '2D-Curve' features allowing optical settings to be adjusted and saved directly from the 'Strategy' window.



### Call:

Open the 'Segment' window by selecting 'Strategy' in a 2D-Curve and doubleclicking a curve segment. The desired settings can be made via the 'Optics' tab and saved consequently.

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## 2.8.8 Measurement Plan Converter

AF-00069

### **Application:**

A new format for measurement plans containing optical measurements was defined for Calypso 4.9. Older plans that were created using Calypso 4.6 or 4.7 are automatically converted to the new format when they are opened with 4.9 or 4.10.

**Note:** Plans saved using Calypso 4.9 or 4.10 will no longer run under Calypso 4.6 or 4.7!

### **Call:**

Not applicable. The conversion is carried out automatically when opening the measurement plan.

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## 2.9 Other New Features

---

### 2.9.1 Erode Module – New Formats

AF-00000

#### Information on format changes/extensions:

Maho-Hansen:	X,Y,Z und C descriptors inserted.
Exeron:	Exeron inserted.
EMT:	Format changed completely.
Deckel-Maho-Gildemeister:	Deckel-Maho-Gildemeisterformat inserted.
Micron:	Micronformat inserted.
AGIE Evolution:	Nr removed, A-B-Axis selectable
Makino(oder Sodik):	Makino(oder Sodik)format inserted.

#### Formatlist

##### Nr. Format

1	Charmilles	
2	Zimmer&Kreim	
3	Mitsubishi	
4	SGL	
5	Hansen	
6	AEG	
7	Makino	
8	AGIE	
9	MAHO-Hansen	
10	Ingersoll	
11	Walter	
12	AEG Elotherm	
13	Exeron	// new (replaces Charmilles)
14	Deckel-Gildemeister-Maho	// new (repöaces Jung)
15	Agie-Evolution	
16	Hermle	// changed EMT-Format
17	Erowa	// new (replaces EMT-Format(2))
18	System 3R	
19	AGIE (Spezial)	
20	Micron	// new
21	Sodick	// new
22	Digma	// new

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## 2.9.2 Enhancements for Articulating Arm and LaserTracker CMMs

AF-00012/14

### Application:

Due to the continuous point reception while scanning with Articulating Arm and LaserTracker systems a very large amount of data is created. This can result in slowing the system down. Also the difference in point distribution between the inside and the outside of measured features can impair the results (high amount of points on outside and low amount on insides).

By applying a 'Grid' or 'Point distance' while scanning, the amount of data is limited and the effects mentioned above minimized.

### Call:

The amount of probing points during scanning is controlled (reduced) by grid or point distance:

- **Grid** for planes and free form surfaces.
- **Point distance** for 2d-lines, cylinders, cones and circles.

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## 3 Installation Instructions

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### 3.1 Installing the Calypso Basic DVD

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

If you are performing an update of an existing Calypso installation, the existing installation has to be uninstalled first. Existing data such as measurement plans, probe data or other CMM-specific data will not be deleted by uninstalling Calypso. However we still recommend creating 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 DVD is inserted, the installation routine usually starts automatically. If this is not the case, use the Windows Explorer to select "Calypso.exe" on the DVD and start the installation by double-clicking.

Simultaneous installation of several Calypso versions on one computer is not supported! Error-free functioning of Calypso is only guaranteed if there is just one version installed!

#### Note:

Locally installed safety systems (firewall and/or intrusion prevention systems) can prevent access to the **SQL server** which is installed automatically as a prerequisite of Calypso 4.10. In such a case the setup will be cancelled. To adjust the configuration of your locally used firewall system please contact your IT department.

The communication between the Microsoft Installer (msiexec.exe) and the SQL server (sqlserver.exe) processes must be assured.

The setup of the SQL server contains the package „MSXML 6“. On some systems the package „MSXML 6 Service Pack 2“ is already installed. This package can be incompatible with the package „MSXML 6“. If the SQL server setup is aborted during the installation of the „MSXML 6“ package „MSXML 6 Service Pack 2“ must be uninstalled first.

#### Important Note for all users of F25, O-Inspect and CMMs equipped with ViScan:

Please take note of the following information regarding existing optical probe data (F25, O-Inspect or ViScan camera data) created with Calypso 4.7.02 or older.

Any existing optical probe data originating from Calypso 4.7.02 or older **must be deleted** before using Release 4.10. The required camera data must be re-qualified with Release 4.10.

Trying to switch to older camera data with Calypso 4.10 will be denied and can result in output of various error messages.

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### 3.2 Installing Calypso ServicePacks and Patches

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

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 DVD. 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

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This is no longer necessary from Calypso 4.10 onwards. All languages available will be installed automatically with Calypso. Should additional languages become available they will be installed together with the following ServicePack for Calypso.

### 3.4 Installing the ViScan Drivers

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Depending on the type of Framegrabber card in use, new hardware drivers are required. When the DVD is inserted the installation routine starts automatically. You then only have to select 'Installation' and 'ViScan Configuration'.



**Framegrabber I** is to be selected for the older card type (ill. left). This version is **for Windows XP only!**

**Framegrabber II** is to be selected for the newer card type (ill. right). This version is valid for **Windows XP and Windows Vista!**

Please ensure that you select the correct drivers by comparing the card installed to the illustration shown.

### 3.5 Data Backup

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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

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

### 4.1 CMM Validity

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Calypso Release 4.10 is intended for application on the following coordinate measuring machines:

Bridge measuring machines:	C400, C700 Eclipse Vista Contura Contura G2 Spectrum Accura Accura II 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:	F-25 O-Inspect METROTOM DuraMax

### 4.2 Controllers & Sensors

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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

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### Recommended data systems:

ZEISS Power Workstation:	HP Workstation xw4600, 3.16 GHz Core 2 Duo 2x160 GB SATA-hard disc 10k 4 GB RAM DDR2-800 ECC NVIDIA Quadro FX1700 grafic card 512Mbyte PCI 1 x LAN Broadcom 10/100/1000 1 x LAN Intel 10/100/1000 DVD+/-RW drive, USB Scroll-Mouse, Windows XP or Vista*
ZEISS Entry Workstation:	HP Workstation xw4600, 2.83 GHz Core 2 Duo 160 GB SATA- hard disc 7,2k 2 GB RAM DDR2-800 ECC NVIDIA Quadro FX570 grafic card 256 MB PCI-E 1 x LAN Broadcom 10/100/1000 1 x LAN Intel 10/100/1000 DVD+/-RW drive, USB Scroll-Mouse, Windows XP or Vista*

### Minimum system requirements:

The following minimum requirements must be fulfilled for installing and operating Calypso 4.10:

PC with 1,6GHz and 1GByte RAM, mouse, printer and data backup. As operating system, Windows XP with ServicePack 2 or Windows Vista\* must be installed.

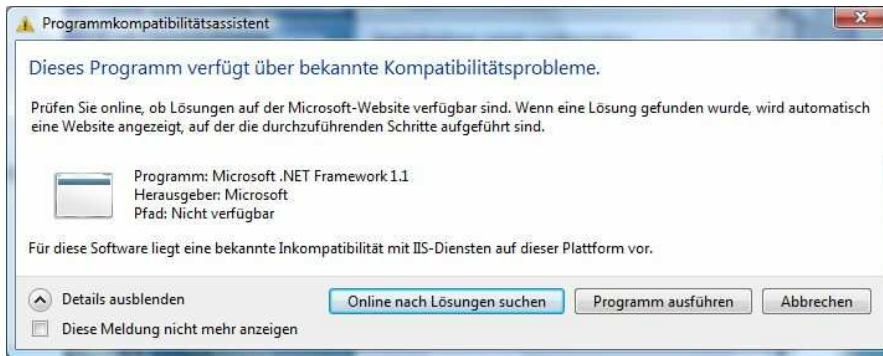
2 network connections must be possible (incl. installed driver):1x for control connection, 1x for customer network. The TCP/IP network protocol must be installed. The installed graphics card must be installed with OPEN-GL drivers. At least one of the ZEISS approved graphics cards should be used (NVIDIA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

Quad-Core processors are not supported!

\* **Windows Vista:** Calypso 4.10 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.
- The ViScan Sensor can only be used with **Windows Vista** in combination with suitable hardware. Please refer to chapter 3.4.
- Due to compatibility problems the following warning message can be displayed while installing the dotNET

Framework 1.1 on Windows Vista systems:



Click on "Proceed" to carry on with the installation.

#### 4.4 CAD Interfaces

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Calypso supports the following CAD Interfaces:

CAD Software	Version
Catia 5	19
Catia 4	4.2.4
Pro/ENGINEER	Wildfire 4.0
Unigraphics	NX6
SolidWorks	2009
Inventor	2009
Parasolid	21
IGES	5.3
VDAFS	2.0
STEP	AP214

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## 5 Contact Addresses

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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:

Carl Zeiss IMT  
IM-A Software Support  
73446 Oberkochen

Tel.: 0180-333-6337  
Fax: 07364-20-4304

eMail: [calypsohot@zeiss.de](mailto:calypsohot@zeiss.de)

[www.zeiss.de/imt](http://www.zeiss.de/imt)

### For USA:

Carl Zeiss IMT Corp.  
Software Support  
Novi MI 48377

Tel.: 1-800-327-9735  
Fax: 248-624-1258 or  
763-535-9792

eMail: [calypso@zeiss.com](mailto:calypso@zeiss.com)

[www.zeiss.com](http://www.zeiss.com)

For current **ServicePacks** 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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