

Manual

aStat 3.0

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The software **aStat** 3.0 is used for the comfortable creation of STATISTICA reports of measurement and production data. In this manual you get to know how to create reports with contents, filters and data preselection of any complexity using **aStat**. The kind of report and data output can also be freely defined.

Finally we will show you how to sum up all your **aStat** settings to profiles to be able to create a report with current data any time with one click.

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1 Login

The users have to enter their valid identification code and password to start the software.

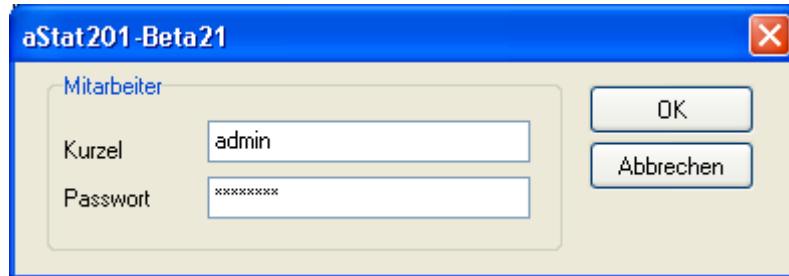


Figure 1: aStat / Login

The employees have read permission, if they are member of the user group *ASTAT3_USER*.

Write or supervisor permission are granted for the members of *ASTAT3_WRITE* and *ASTAT3_SUPERVISOR* groups.

The IT department manages the access rights.

2 Data Selection

The columns in the upper area contain ERP information like type of measurement, customer, product and lot number and also measurement parameters (points) with appendant allowances, nominal values and units.

All information can be preselected in any order.

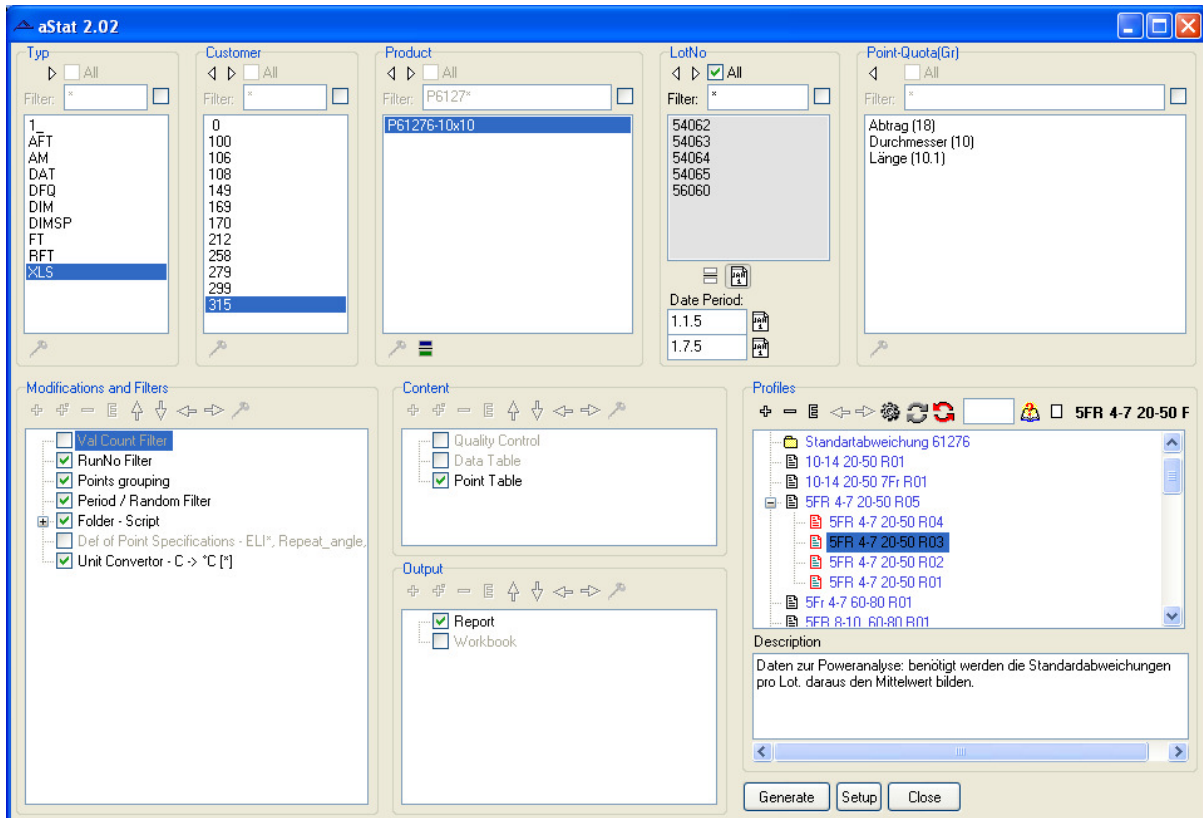


Figure 2: aStat with selected database fields and options for a report

2.1 Selection of the data columns and the contained elements

You can select the relevant database fields from the existing ones for display and determine their order.

The selection of the columns is carried out in the following way:

- Right-click the title bar of a column
- Select *options from the context menu*
- Select the data columns that should be displayed from the list

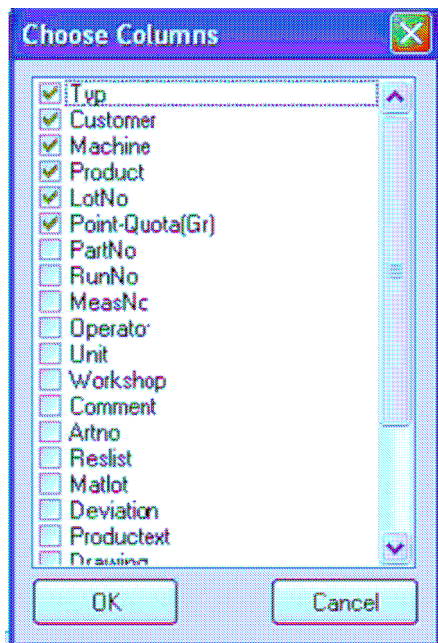


Figure 3: aStat / Selection of the database fields

The inquiry of the data is carried out from left to right. To change the order of the columns

- Click on the arrows in the title bar of a column

Now you can select if all values of a column should be displayed or only certain ones (e.g. products):

- Select the option *all*. All entries of a column are marked. The list can furthermore be manipulated through filters (see below).

or

- Mark single entries by mouse click pressing CTRL or SHIFT (multiple single selection with CTRL, continuous selection with SHIFT)

2.2 Setting the time limits

For each data column that contains the production or measurement time (*Rundatetime*) you can limit the relevant time. You can select the start and end date; relative time entries are also allowed.

- Click the date symbol below the data column to show the start and stop fields.
- Enter the desired date.

The input format is *dd.mm.yyyy* or *dd.m.yy*.

If e.g. 04.03.07 is entered as the start date and 23.03.07 as the end date, internally the period 04.03.2007 0:00 – 23.03.2007 23:59:59.999 is used. This way all the measurements from the last relevant date are included.

For fine adjustment it is also possible to enter the time: The input format is extended by *hh:mm* (e.g. 05.04.2007 12:33).

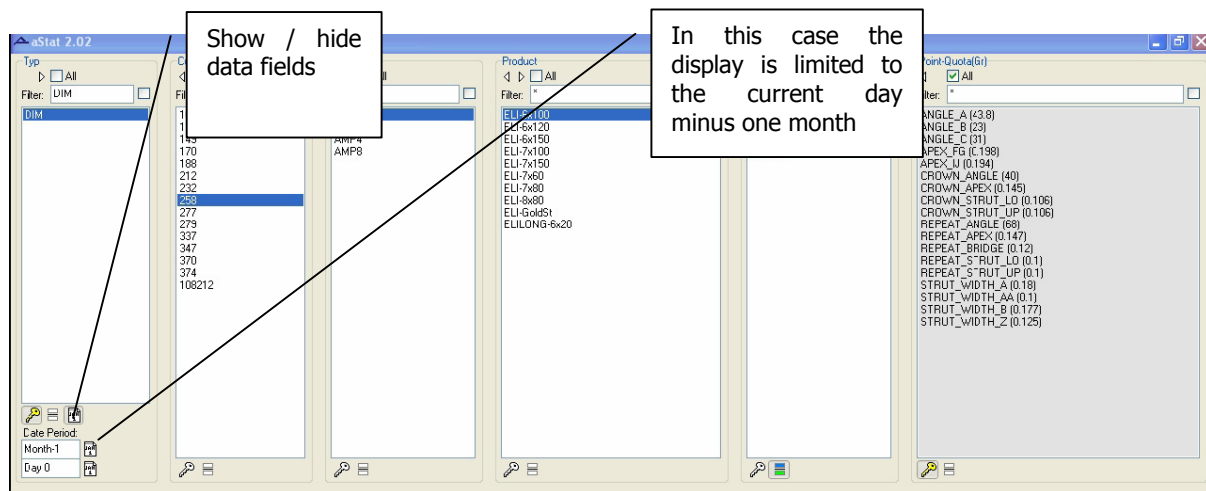


Figure 4: aStat / data columns

2.3 Filtering of a data column

The data of a column can additionally be limited by a filter. This option is especially suggestive if you have selected all elements of a column.

- Enter the filter type in the field *filter* above the column.

For the definition of the filter type the classical DOS mask is used. The usual wildcards are used:

- ? Wildcard for exactly one character
- * Wildcard for a free number of characters (including zero)

Examples:

WZ15-*x60

– WZ12-3x40, WZ12-10x40...

WZ12-?x40

– WZ12-3x40, WZ12-8x40 (not WZ12-10x40)

WZ*Gold*

– WZ12GoldSt, WZ-GoldSt

2.4 Serial processing vs. Seperate processing

On the left side next to the date symbol under each data column there is the button *separate report*. Usually when the report creation is carried out a serial processing of the elements of each column is done. When the *separate report* function of a column is activated (button pressed) a new operation is carried out for each selected object. In this example a separate report is created for each lot.

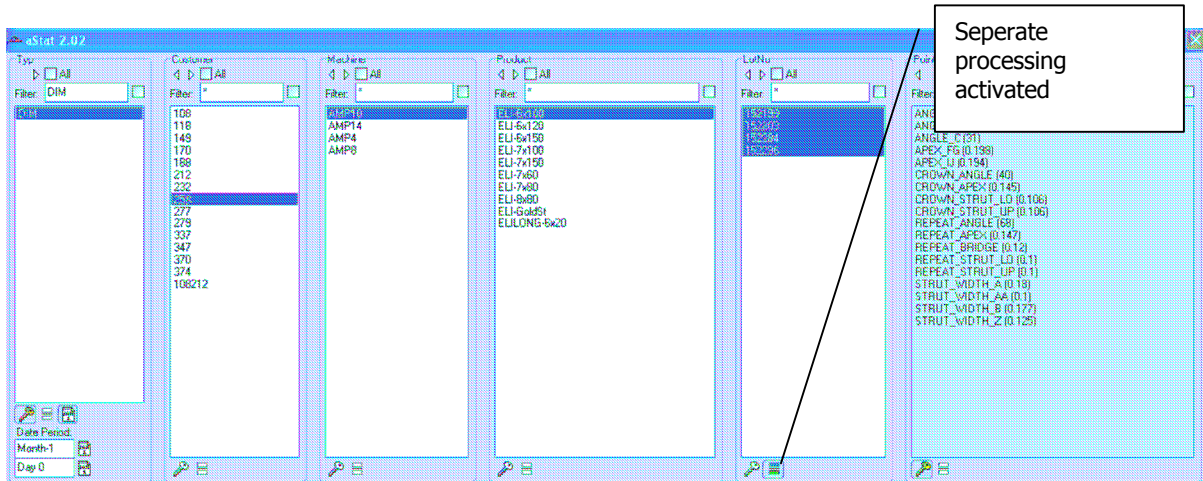





Figure 5: aStat data columns / Separate processing for lots

3 Filters

3.1 Utilization

After having selected and arranged data columns and column entries for the report in the upper part the data can be furthermore filtered and modified for the reporting employing predefined filters that are available as Plug-Ins.

The part *Modifications and Filters* can be found in the lower left area.

- You can activate an existing filter by selection.
- New filterd can be added using the  button.
- Existing filters from other existing profiles can be added using the  button.
- The filters can be edited using the  button.

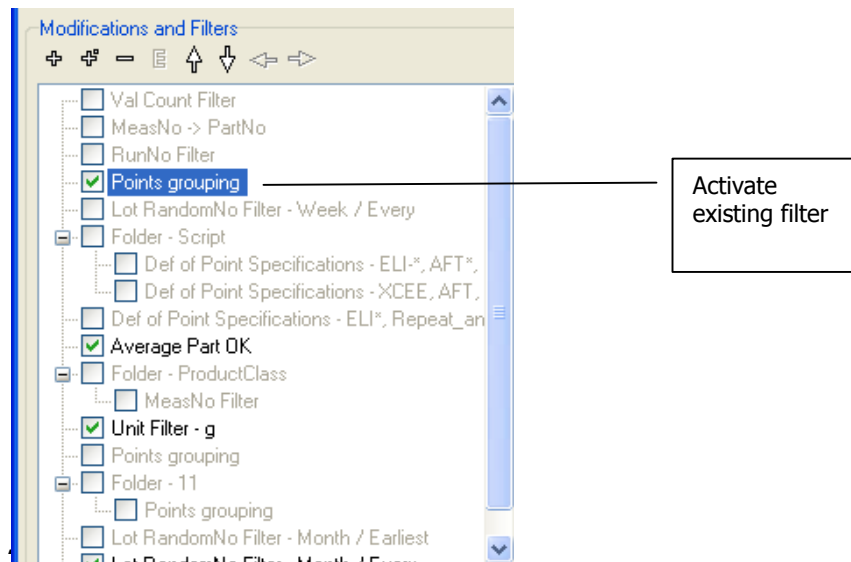








Figure 6: aStat / Filters

The order of the filters is important. They are employed from top to bottom. You can change the order using the arrow buttons.

You can create folders for arranging filter combinations for diverse analysis.

All filter options at a glance:

button	function
	Add new filter
	Adding of filter options from other existing profiles: All settings are taken over. Even complete folders with filters can be imported. A new definition of complex filters is not necessary.
	Deleting the selected filter
 or double click	Editing the selected filter
	Move out of the folder. Folders are a collection of filteroptions. They can thereby be activated / deactivated together.
arrow right	Move into the folder above
 /arrow down	Oder of filters Different orders lead to different results!
active/passive	Inactive filters are not used.

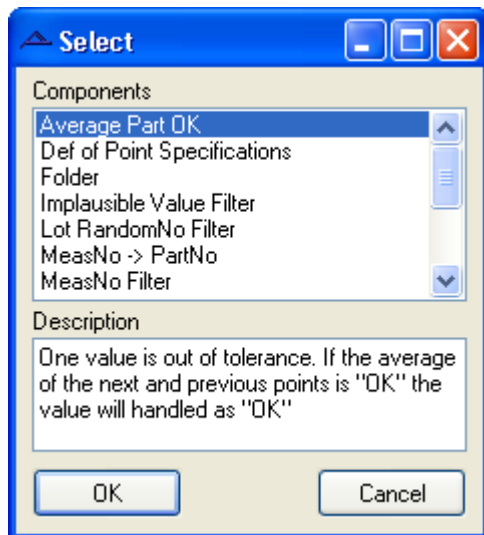


Figure 7: aStat / Add new filter

Now the most important predefined filters are presented.

3.2 Average Part OK

The Average Part Ok filter analyzes outliers. Outliers are values that are out of the defined tolerance. If the average value of the following and previous points is ok, this value is accepted as appropriate.

In the properties window is defined for which products and for which parameters the outliers should be checked. In addition it is possible to use the components only for the values below *LowerTol* or above *UpperTol*.

Each faulty measurement value is being replaced by the average value of the nearby points. The number of nearby points is defined by the interval.

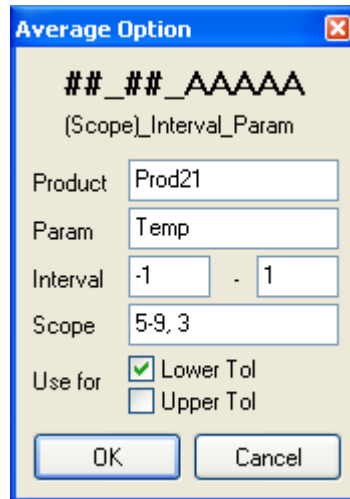


Figure 8: aStat / Average Part OK filter

- 1 as first value Only one previous point is used for the calculation of the average value
- 2 as first value Two previous points are used

The second value is set in the same way.

If the point to be checked is the first one the last point of the set is used as previous point. The next point for the last one to be checked is the first one of the set.

A measurement point can be used only once in the calculation of the average value.

Example:

The existing points have indexes 1 to 4 and the selected interval is (-2,2: This interval contains 5 points but only 4 exist. In this case only the four values are used for the calculation.

The parameter *Scope* is only relevant if two numbers are written before the parameter identifier. The first number names the range. For *scope* single numbers or ranges are possible.

Multiple options are separated by comma (e.g. 5-9, 3 means the pointgroups 5 to 9 and 3 are used). If *scope* is left blanc all groups are checked.

Optionally this Plug-In can be used for values below *LowerTol* or above *UpperTol* only.

3.3 Bad Part Filter

All scrap parts are filtered.

3.4 Definition of Point Specifications

Use this filter for modifying the specifications of measurement points for an analysis.

In the example for all products of the SX line the measurement point "Wall" is equipped with new specifications.

The "Limits" mark measurement values that are seen as implausible. They are not used in the analysis.

If a field is left blank, e.g. *LowerTol*, it is not affected by the specification modification.

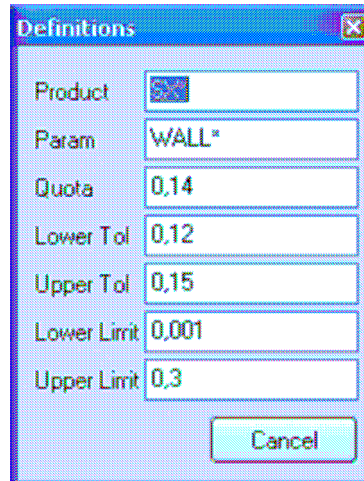



Figure 9: aStat Filter / Point Specifications

3.5 Folder

A new folder for filter options is created. In this case the folder only has an overview optimizing function. It does not affect the result. The folder makes the comfortable activating and deactivating of groups of filters possible. With the  button folders can easily be imported from other profiles. This way filter options can easily be copied.

3.6 Implausible Value Filter

Implausible measurement values are always an obstacle for the analysis of measurement data. This component gives a hint for the number of implausible values. Optionally these can also be filtered.

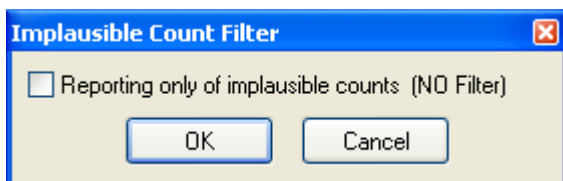


Figure 10: aStat / Implausible Value Filter

3.7 LotRandom Filter

Always use this filter. It can be edited and has two functions:

Periods are assigned to the measurement values. These can be calendar weeks or months. This function is necessary for analyses like "Quality Control Chart" or "Process Analysis QC".

A certain number of measurements can be chosen from a period by random.

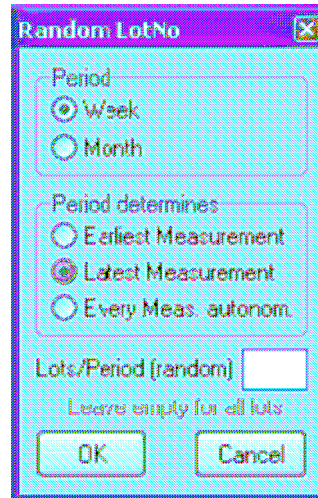


Figure 11: aStat / LotRandomFilter

The following options are available:

<i>Earliest Measurement</i>	The period of the earliest measurement value of the lot is used as period for all measurement values of this lot
<i>Latest Measurement</i>	The period of the latest measurement value of the lot is used as period for all measurement values of this lot
<i>Every Measurement autonom.</i>	The period is assigned to each measurement value individually according to the measuring time

If one of the first two options is selected there furthermore is the possibility to select a number of lots per period that is defined by random for the further procedure. The other lots are deleted.

3.8 MeasNo → PartNo

For some products and types of measurement *MeasNo* real is the real partnumber. Always set this filter for analysis of the type "DIM" or "FT".

It converts the *MeasNo* to the *PartNo* if it is greater than zero.

This way the backwards compatibility to old measurement software from 3-DK is secured.

3.9 MeasNo Filter

For some measurements this field contains an additional identifier. This filter selects only the measurement with the greatest *MeasNo* for analysis. The measurement is uniquely defined by the combination (*Type, LotNo, PartNo, RunNo*).

Set this filter only for measurements of the type "AFTWB", "AFTPL" or "AFTWE" after *RunNo* filter. It lets only the measurement with the greatest *MeasNo* pass. This way you always get the latest interpretation of an AF measurement.

3.10 RunNo Filter

Always use this filter. It checks the *RunNo* for each part and lets only the highest *RunNo* pass to the analysis. The measurement is uniquely defined by the combination (*Type, LotNo, PartNo, RunNo*). This ensures that you only get the latest measurement.

3.11 Points Grouping

Set this filter to sum up measurement points. Some measurement points are measured several times on one stent (e.g. bars). These can be equipped with indexes by the measuring program, that are saved as prefix followed by underscore (e.g. 3_2_Strut1). These are removed by the filter. This way 1_L_STRUT, 2_L_STRUT, etc. becomes only STRUT.

Two special characters, L and R are also interpreted as numbers and filtered out:

L_abcd and R_abcd -> abcd.

3.12 Value Count Filter

Always use this filter. It checks if the number of measurement points of a measurement program (incl rev.) is complete. Incomplete measurements are not considered in the analysis. The corresponding part will be evaluated as scrap.

3.13 Unit Converter

With this filter the unit of measurement points can be converted using a linear function.

Single measurement points can be excluded using *exclude*.

The units are converted according to the freely definable function.

Decide if the conversion should apply to the measurement value, the specification or both.

In the example all measurement points, whose unit is “mm” are converted to “inch”.

If a is set to 1 and b to zero only the unit is renamed. E.g. C → °C.

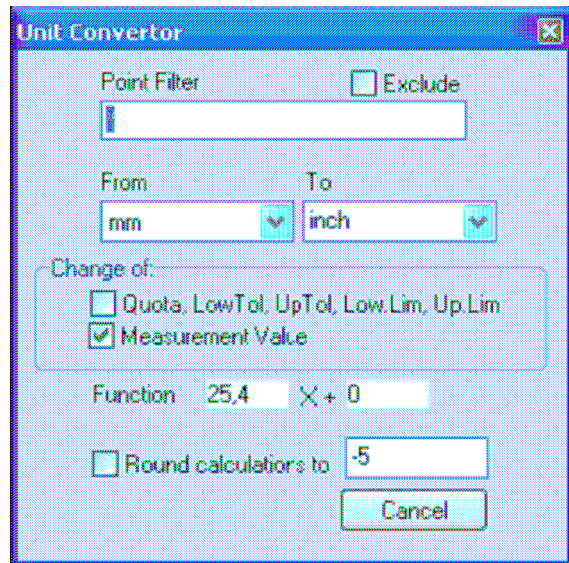


Figure 12: aStat Filter / Unit Converter

3.14 Unit Filter

Often the measurement data has diverse units. With this filter it is possible to select a single unit for the measurement data. In the drop down list all units existing in the database are listed. The special option *<autodetect>* automatically selects the unit with most measurement values.

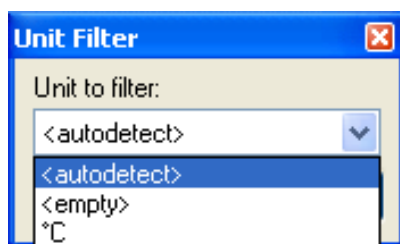


Figure 13: aStat / Unit Filter

3.15 Script Ignore

This filter makes the exclusion of special points possible.

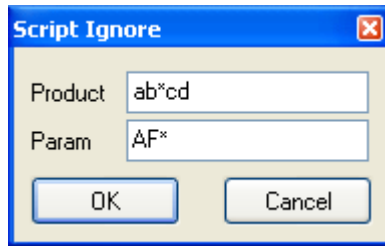


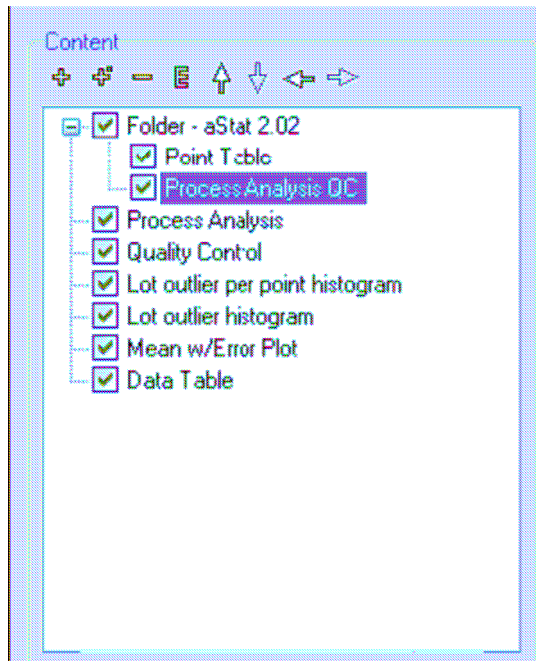
Figure 14: aStat: Script Ignore Filter

3.16 Val Count Filter

The number of parameters for each combination (*Type, Product, ProgrammRevNo*) is determined. Afterwards for each measurement is checked if it contains the maximum number of parameters. Measurements with less measurement parameters are treated as faulty and filtered out.

4 Contents of your analysis: "Content"

Select the contents of your analysis in the lower center *Content* area.



- You can add content using the **+** button. Also use the **⊕** button to load contents from other profiles.
- Using the **E** button you can edit the selected element.
- The contents are put out from top to bottom in the report. Use the arrow buttons to set the desired order.

Figure 15: aStat / Content

The following content options are available. They will be explained in the following:

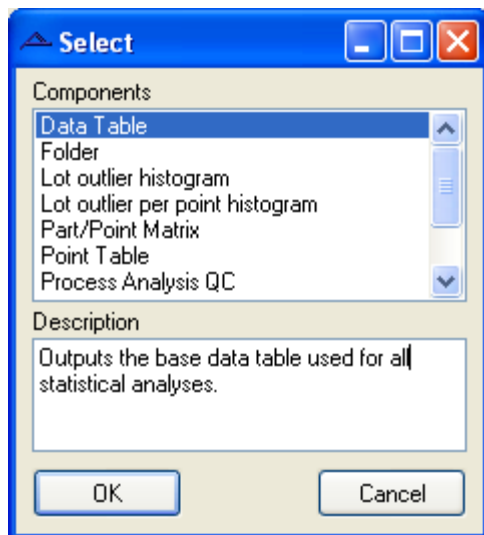


Figure 16: aStat / Choice of Contents

4.1 Folder

Use *Folders* to structure your contents or to add text to the analysis. If a folder is active the contents of the folder are put out.

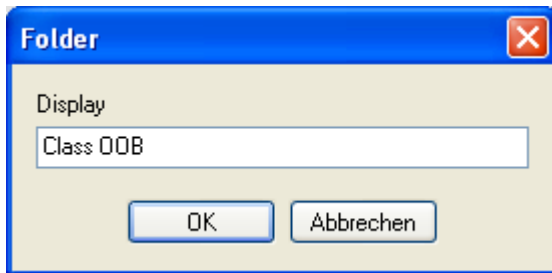


Figure 17: aStat Content / Display name of Folder

Display: A freely definable display name can be set for each folder e.g. Class OOB.

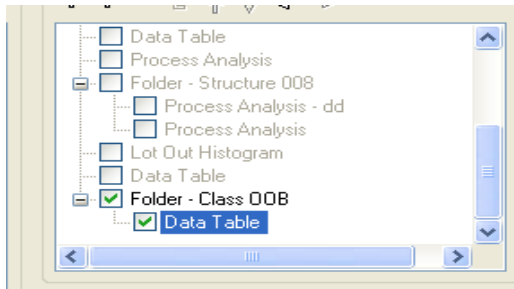


Figure 18: aStat Content / Folder

Different from the filter folders this folder has an effect on the generated report. E.g. this folder also exists in the STATISTICA Workbook.

Data Table

The *Data Table* is not a calculation but puts out the selected information from the database after executing the filters.

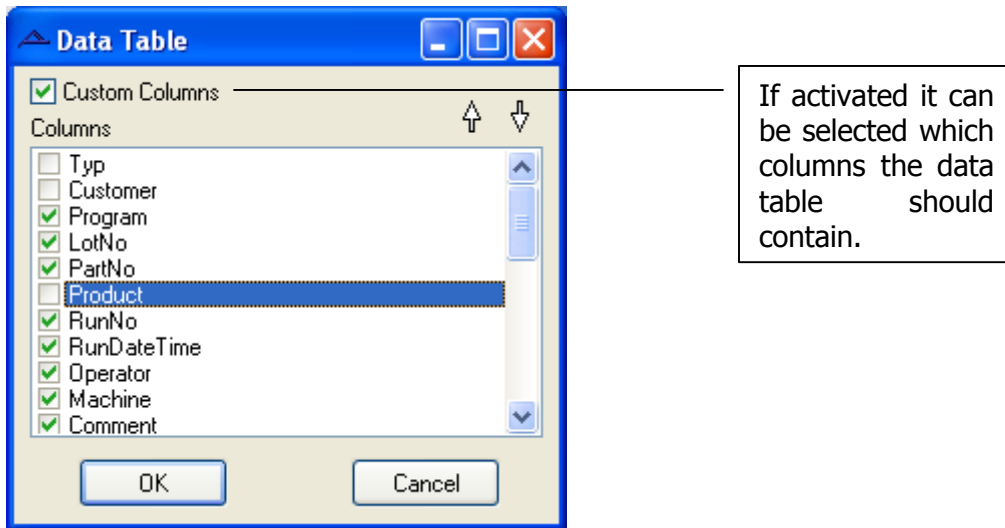


Figure 19: aStat Content: Data Table

- Select the desired information / columns by clicking the check field
- The order can be modified using the arrows

Remember that the output of raw data should be executed into an adequate format (EXCEL or STATISTICA).

! When selecting the option *Data Table* it is possible to display the data in the STATISTICA format and perform further analyses manually.

LotNo 9979 9983

Table 1.00: Data Table

Program	LotNo	PartNo
BOIE-RUIDEED2-8x40_3DK	9979	0
BOIE-RUIDEED2-8x40_3DK	9979	0
BOIE-RUIDEED2-8x40_3DK	9979	0
BOIE-RUIDEED2-8x40_3DK	9979	0
BOIE-RUIDEED2-8x40_3DK	9979	0
BOIE-RUIDEED2-8x40_3DK	9979	0
BOIE-RUIDEED2-8x40_3DK	9979	0

Figure 20: Display of the data table in the report

4.2 Lot Outlier Histogram

Lot Outlier and *Lot Outlier per Point* histograms create an overview of the lots or measurement points of the lots, in which scrap has appeared. Use this graph to get an overview over the causes of the scrap.

For each measurement parameter the number of faulty measurement values per lot is displayed.

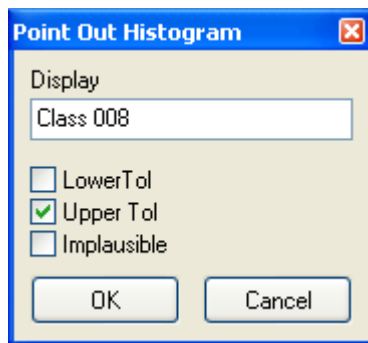
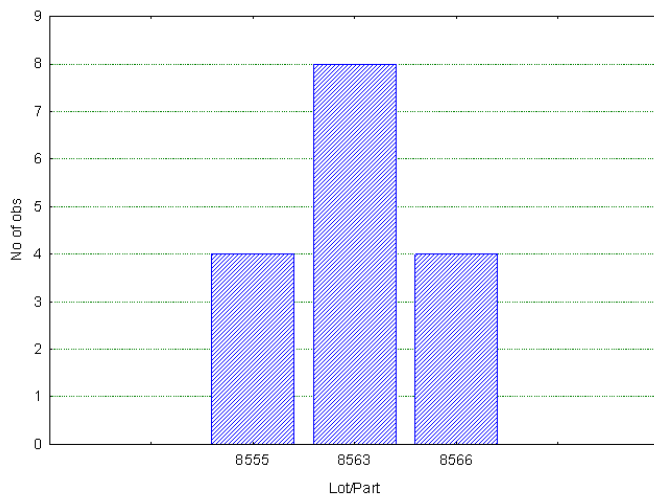


Figure 21: aStat Content / options for Lot Outlier Histogram

<i>Display</i>	Displayed title
<i>Lower Tol</i>	If the measurement values per lot are below the lower allowance the statistic is displayed
<i>Upper Tol</i>	The measurement values exceeding upper allowance are displayed
<i>Implausible</i>	The measurement values per lot that exceed the limits are displayed. These are declared implausible and cannot be interpreted



Picture 1.00: Implausible

If no check field is activated no graph is displayed.

4.3 Lot Outlier per Point Histogram

Lots with outliers are displayed per point in the histogram.

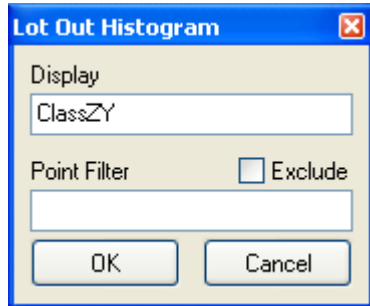
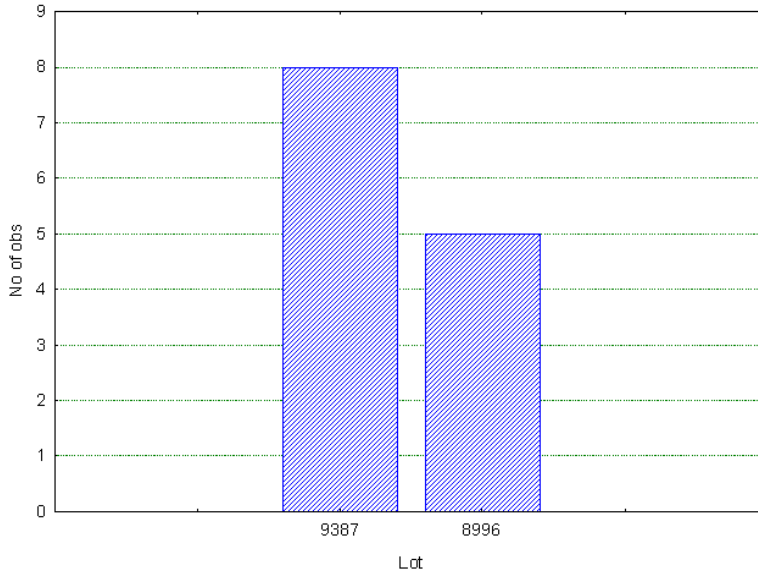


Figure 22: aStat Content/ options for Lot Outlier per Point Histogramm

<i>Display</i>	Displayed title
<i>Point Filter</i>	Certain points can be selected in the display
<i>Exclude</i>	These points are excluded



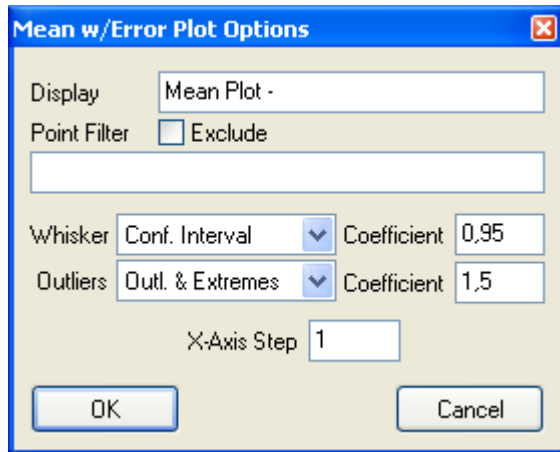
Picture 1.00: ClassZYRidBuBsi

Figure 23: aStat: output for Lot Outlier per Point Histogramm

4.4 Mean w/Error Plot

If this content is selected **aStat** creates a *Mean/Error plot* or a *Box-Whisker* diagram for measurement values per measurement point.

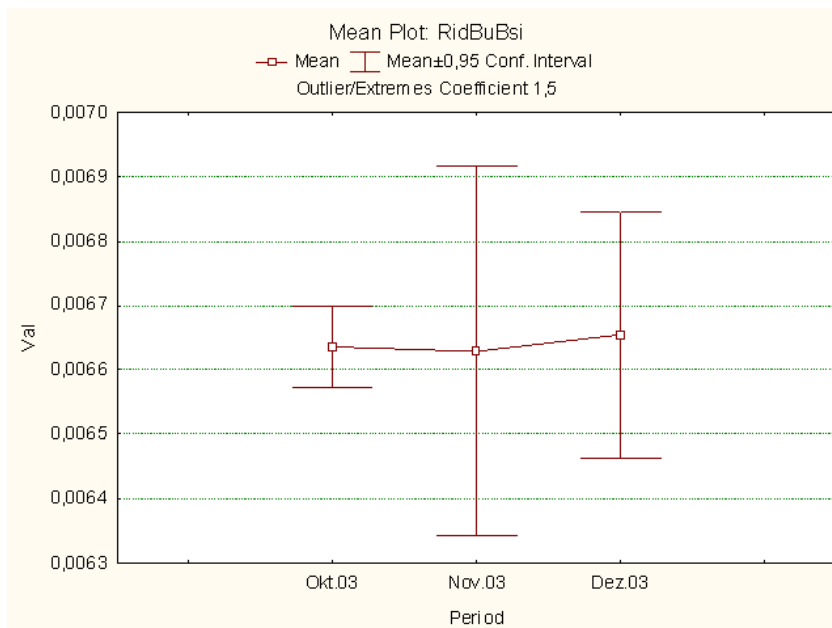
! The data is arranged by period so the LotRandomNo filter is crucial.



- Select the kind of display with the given options
- Add a title in the *Display* field if desired

Figure 24: aStat Content / options for Mean Plot

In the figure above you see a meanplot example, generated with the settings shown. This leads to the following output:



Picture 2.00: Mean Plot - RidBuBsi

Figure 25: aStat: Output for Mean Plot

4.5 Part / Point Matrix

aStat generates an error matrix, that shows the parameter next to the part identifier (*LotNo* and *PartNo*).

As option you can display the title in the *Display* field.

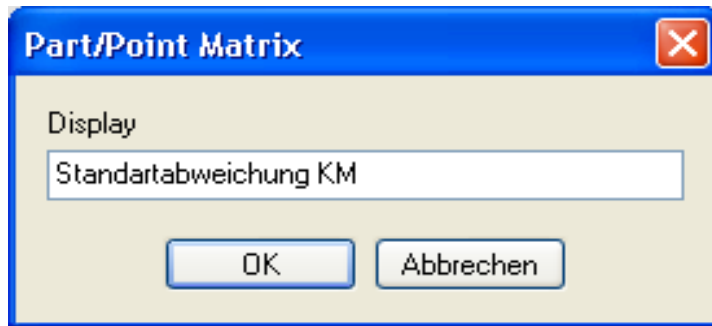


Figure 26: aStat Content / options for Part/Point-Matrix

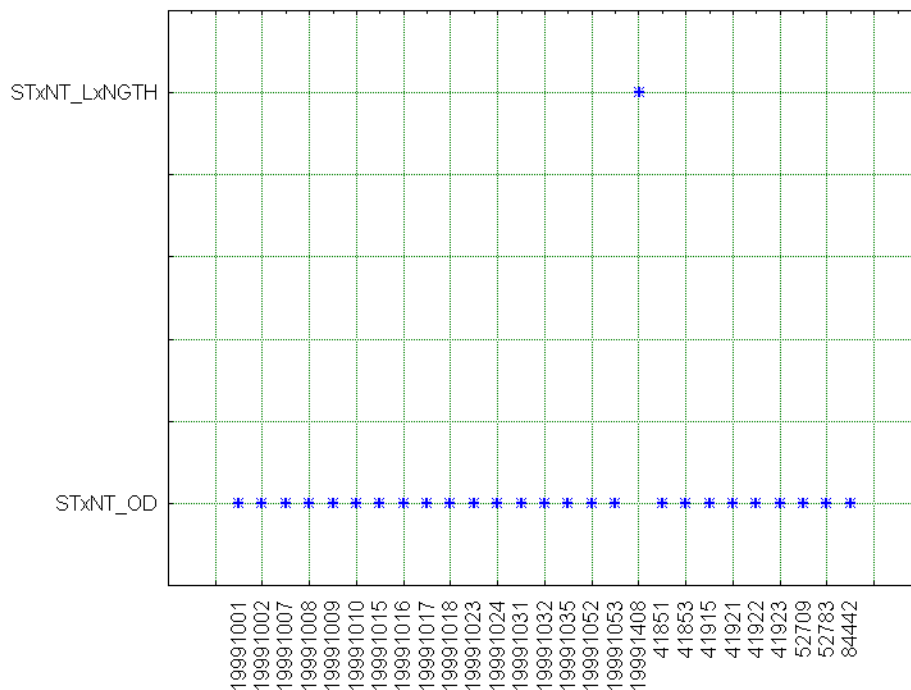
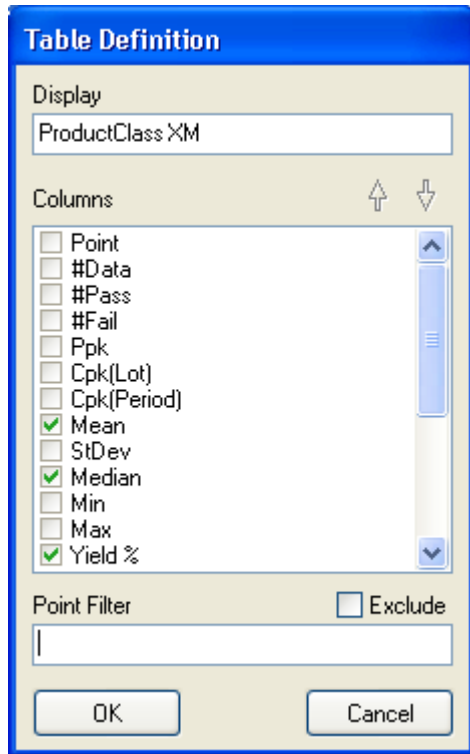


Figure 27: aStat Content / Output of a Part/Point-Matrix

4.6 Point Table

The *Point Table* creates a tabular display of the measurement parameters, if desired with calculated values from the data pre selected by you.



- In the field *Display* you set the title
- Select the desired contents by using the check fields
- Using the arrows you can set the order
- *If desired exclude single measurement point using Exclude*

Figure 28: aStat Content / Point Table

The analysis of *PPK*, *CPK*, *Mean*, *StDev* etc. can be included.

- For *CPK-Lot* and *CPK-Period* (as well as *PPK* for more than 5000 datasets) the QC module is loaded (QC-license required).

Table 1.00:

Point	#Data	#Pass	#Fail	Mean	StDev	Median	Yield %
Längx	947	947	0	102,47682	0,29955	102,5	100

Figure 29: aStat / output of a Point Table

4.7 Process Analysis

Process Analysis as well as *Process Analysis QC* create a histogram with allocation of the measurement values.

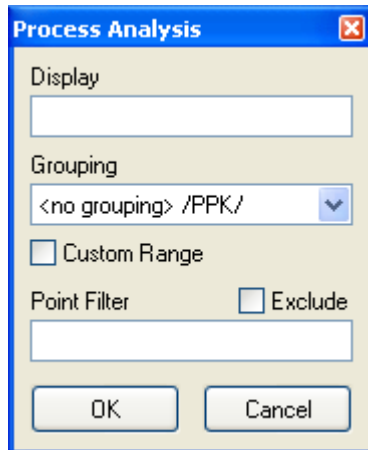


Figure 30: aStat Content / Process Analysis

The *Process Analysis* executes the graphic process analysis for a maximum of 5000 measurement values.

The following options are available:

<i>Display</i>	Displayed title in the report
<i>Grouping</i>	Sets the attribute by which the grouping in the process analysis is carried out (e.g. <i>LotNo</i>). If no grouping is selected the PPK value is calculated.
<i>Custom Range</i>	<p>A customer specific pre defined scale for the horizontal axis is used in the process analysis.</p> <p>The target value (quota) is always displayed in the centre.</p> <p>The ratio between the distance between allowance value and target value and the distance between allowance value and border is 2:1. If the distance between an allowance value and the target value is smaller the scale is determined by the greatest value.</p> <p>This option is useful for the optical comparison of different graphs.</p> <p>If this option is not set an automatic scale from STATISTICA is used.</p>

It leads to the following output:

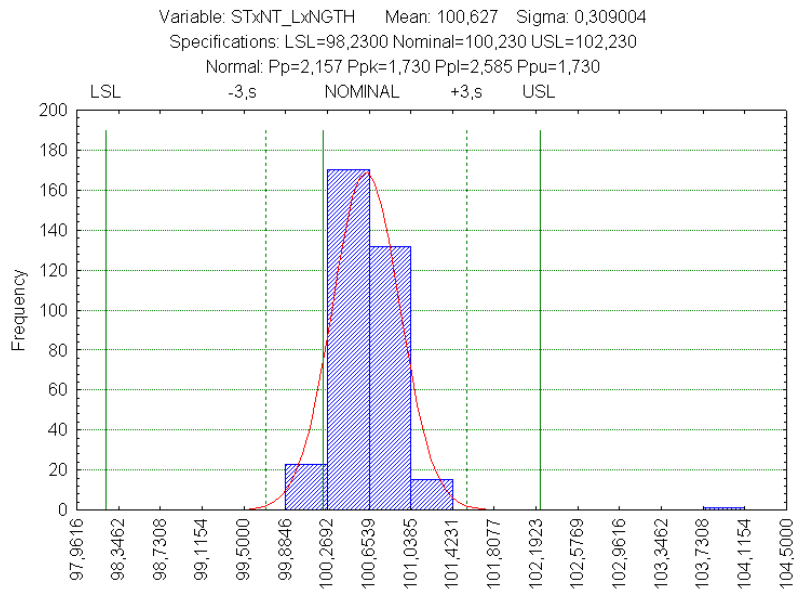


Figure 31: aStat / output of a Process Analysis

4.8 Process Analysis QC

The *Process Analysis QC* equates to the process analysis. The difference is that in this case the QC module is used, which allows a measurement with more than 5000 data sets. The QC license is required.

Another main difference to the usual process analysis is the kind of calculation of the sigma value. In difference to the classic definition by the root mean square deviation the sigma value is calculated by *ranges*.

The calculation of the *PPK* value is only possible in combination with a *CPK* value.

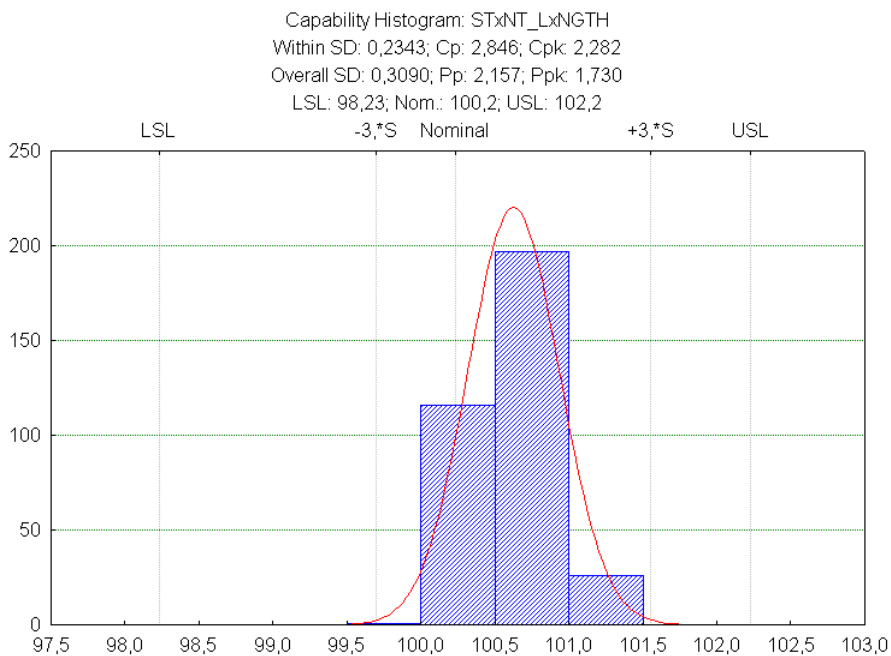


Figure 32: aStat / Output of a Process Analysis QC

4.9 Quality Control

This function creates a six graph quality graph using the STATISTICA QC module (QC license required). Root mean square deviation, range, normal distribution and process analysis are included.

The *LotRandomNo* filter is crucial.

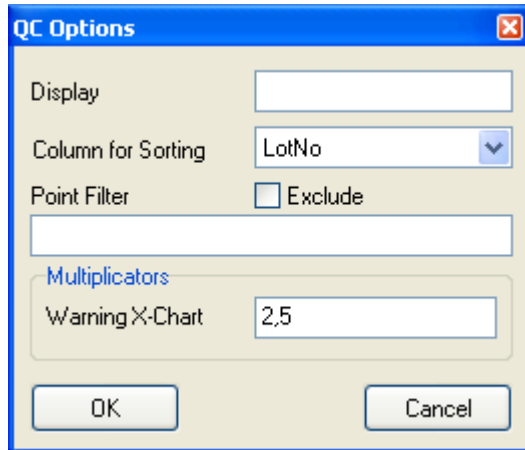


Figure 33: aStat Content / Quality Control

<i>Display</i>	Title displayed in the report
<i>Column for Sorting</i>	Enter the column name relevant for the display of the quality control in the report and for grouping
<i>Multiplicators</i>	Here the multiplier of the warning line can be entered as <i>Warning X-Chart</i>

4.10 Radial Force

This content monitors the radial force in a graph and a tabular list in the report.

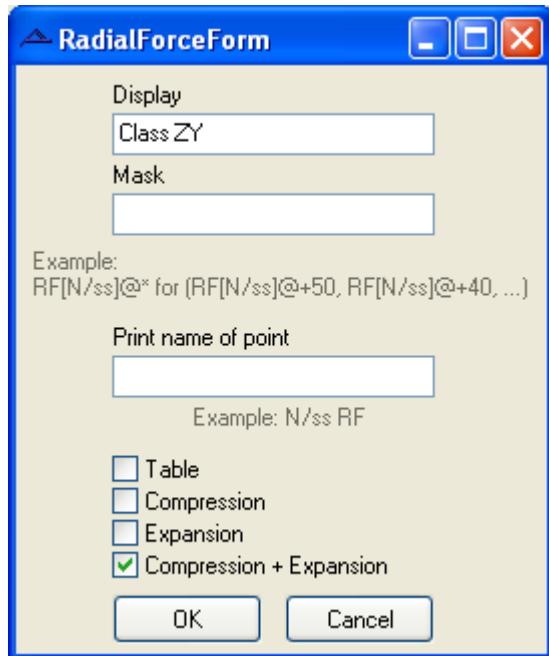


Figure 34: aStat Content / Radial Force

<i>Display</i>	Title displayed in the report
<i>Mask</i>	Identifier that is entered by the administrator in the menu item <i>Point-Quota</i> . E.g.: [N/ss]@* für RF[N/ss]@+50, [N/ss]@+40,..., [N/ss]@-50
<i>Print name of Point</i>	Display of the parameter
<i>Table</i>	The values of compression and expansion are displayed in a table
<i>Compression</i>	Compression graph is displayed
<i>Expansion</i>	Expansion graph is displayed
<i>Compression + Expansion</i>	Compression and extension graph are displayed together

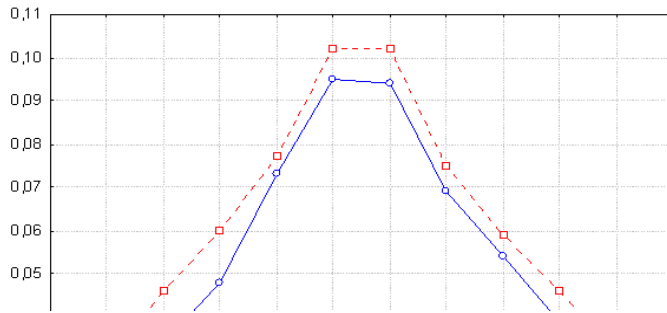
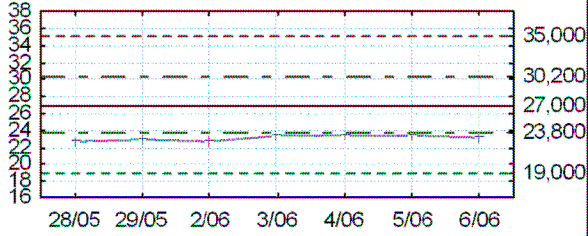
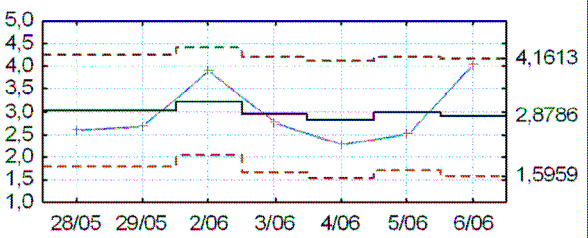
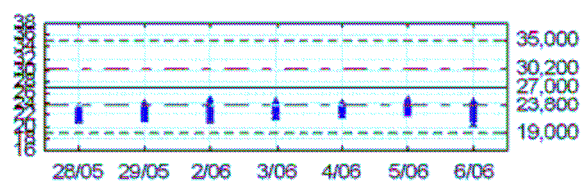
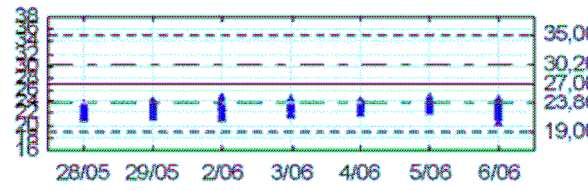
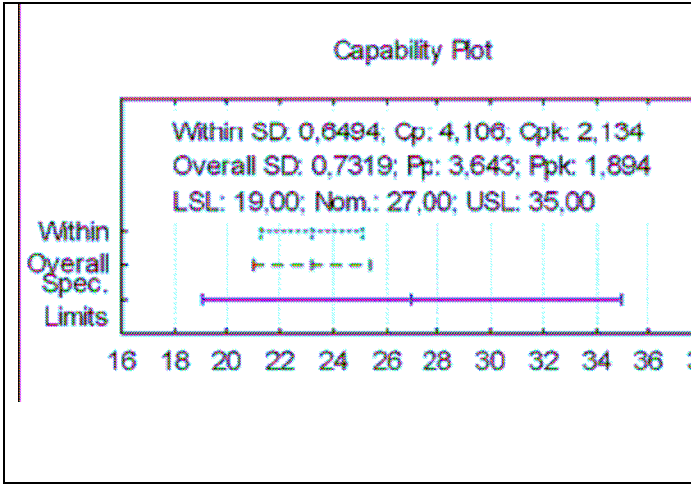


Figure 35: aStat / Output of a compression and extension graph (Radial Force)

4.11 Overview over the report contents

<p>X-bar: 23,158 (27,000); Sigma: 0,64939 (0,64939); n: 58,857</p> 	<p>The X-bar Chart gives the average measurement values.</p> <p>The red lines indicate the upper and lower specification of the measurement point, the black line shows the target value. The green lines show an area of +/- 3 standard deviations. The blue line shows the average value of the measurements per month.</p>
<p>Range: 3,0027 (3,0027); Sigma: 0,41581 (0,41581); n: 58,857</p> 	<p>In this graph the ranges of the measurement values in the given period are displayed (blue line).</p> <p>The red lines show an area of +/- 3 standard deviations.</p>
<p>Individual Plot</p> <p>X-bar: 23,158 (27,000); Sigma: 0,64939 (0,64939); n: 58,857</p> 	<p>The Individual Plot displays the single measurement values.</p> <p>The red lines are the specification borders, the black line is the target value. The green lines show an area of +/- 3 standard deviations from the target value.</p>
<p>Individual Plot</p> <p>X-bar: 23,158 (27,000); Sigma: 0,64939 (0,64939); n: 58,857</p> 	<p>The Normal Probable Plot shows, if the measurement values result from a gaussian distribution. If all points (measurement values) are on the red line this can be assumed.</p>

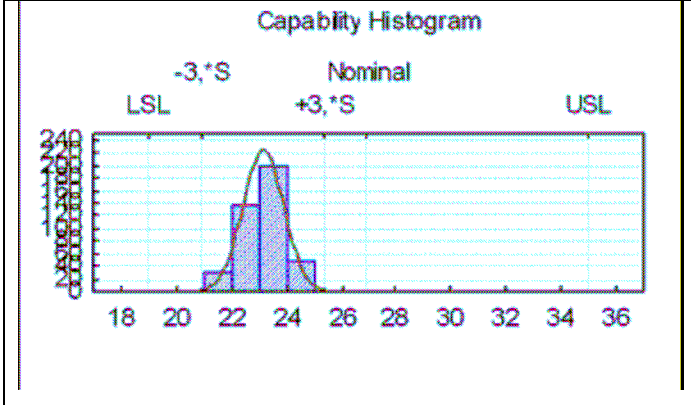


In the **Capability Plot** all key performance indicators are displayed.

The *CP* and *PP* value **generally** gives the capability of the process of delivering a certain quality.

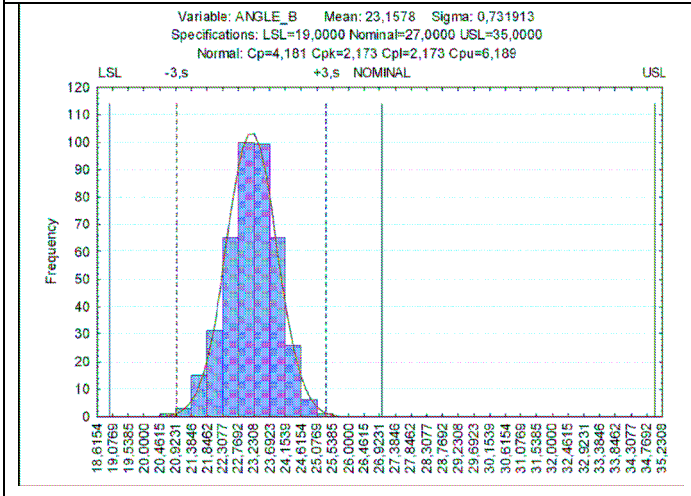
The *CPK* and *PPK* value give the capability of delivering a **certain** quality. They factor the specifications into the calculation.

While *CP* and *CPK* only monitor the standard deviation inside a group (in this case per month) *PP* and *PPK* monitor the complete standard deviation.



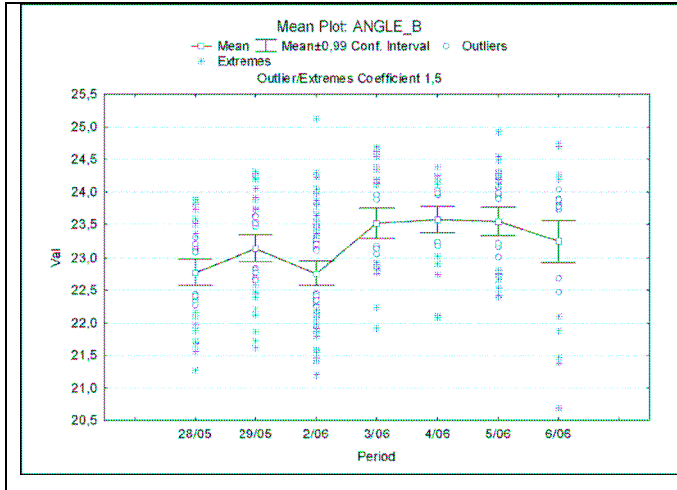
The **Capability Histogram** gives the distribution of the measurement values.

In addition the specifications and the +/- 3 standard deviation are charted.



This graph equates to the **Capability Histogram**.

The display is more detailed and includes the key performance indicators from the capability plot.



The **Mean Plot** is independent from the process borders.

Here shifting can be easily recognized. 99% of all measurement values lie inside the bars. Circles symbolize values that can be assumed to be outliers, stars symbolize extreme outliers.

5 Report (Output)

Define here in which format your "Content" should be put out.

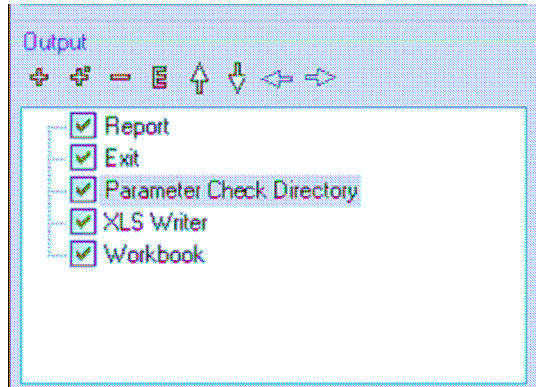


Figure 36: aStat / Output

The Elements *Exit* and *Parameter Check Directory* influence the creation of the output.

Exit aborts the output.

Parameter Check Directory checks if the conditions in the "Point Table" are fulfilled and then continues with the procedure.

Use this option to create reports depending on conditions. Also see *Parameter Check Directory*.

On the following pages kinds of outputs are described:

5.1 Output as Report

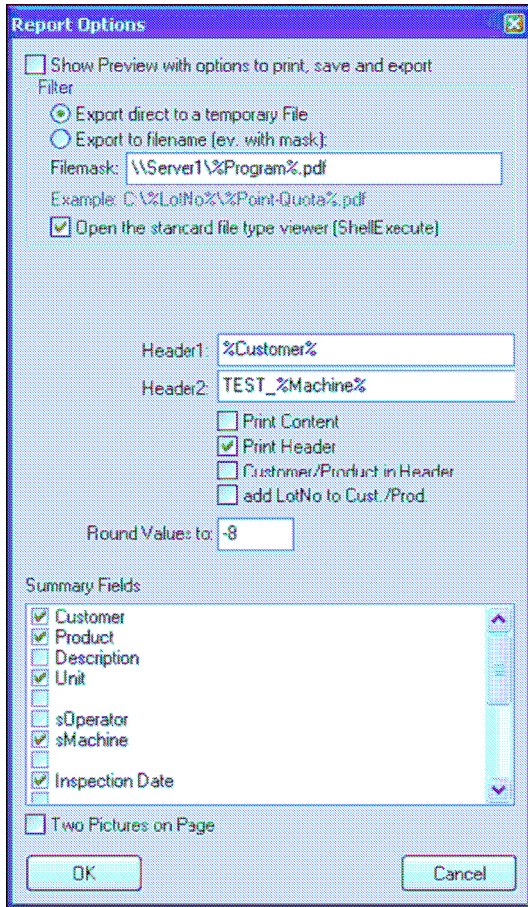


Figure 37: aStat / report options

The following report options are available (details below):

- Preview with print, save and export options
- Export in external files
- Konfiguration of the header
- Definition of number of decimal places
- Selection of the relevant database fields for the output

<i>Export to a temporary File</i>	Export to a temp file, e.g. "temp1", "temp 2",
<i>Export to filename</i>	Export to a concrete file: enter path and file name. Using % placeholders for variable arrangement can be set (see below). In the example the report is saved under "Server 1" as name of the measurement program. <i>%Lotno%</i> equates to the current lot number
<i>Header</i>	Here you can define which data should be displayed in the header. You can use text or variables: <i>%Lotno%</i> , <i>%Customer%</i> , <i>%Machine%</i> Click what you want to print
<i>Print Content</i>	Contents page is printed
<i>Print Header</i>	Headers are printed

<i>Customer/Product in Header</i>	The customer and product name are included in the header
<i>Add LotNo to Cust./Prod</i>	The lot number is added to the customer and product name
<i>Round Value to</i>	Define the number of decimal places to which all values should be rounded
<i>Summary Fields</i>	The active fields are displayed in an own row.
<i>Two Pictures</i>	The pictures are arranged in width first and then in length. This way to pictures fit on one side.



Page

K1219/BOIE-RUIDEED2-8x40/9979 K12

Customer	1219
Product	BOIE-RUIDEED2-8x40
Unit	mm
Inspection Date	24.09.2004 - 01.10.20
Parts inspected	2
Parts passed	0
Yield	0

Figure 38: aStat / Example for a header of a report output

Use of variables in the report output:

In aStat all database fields can be assigned in the following way:

%Fieldname%

The functional character % can be deactivated by putting two of them in a row: %%. In the display they are shown as one.

Combinations can also be listed: By *%(field1 field2)%* all combinations of *field1* and *field2* are created and displayed.

E.g.:

%(%Product%|%Customer)%

gives all combinations of product and customer.

5.2 Output as XLS sheet

Report content can also be directly exported to EXCEL.

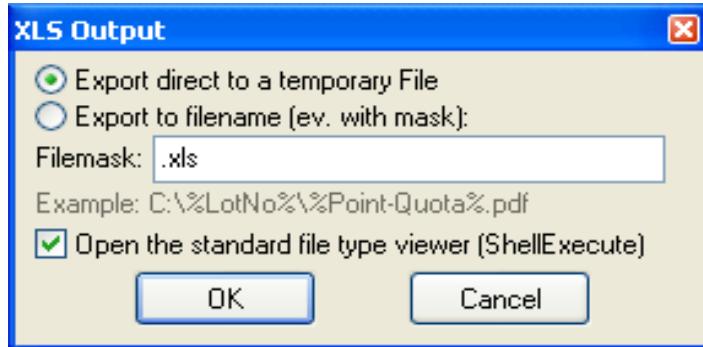


Figure 39: aStat / Output to an EXCEL file

Chose between output to a temp file and output to a determined file. Again it is possible to use variables. Using `%LotNo%.xls` the file is saved with the lot number as name.

5.3 Export to STATISTICA Workbook

This option creates a „workbook“ in STATISTICA. You have the same options as in the XLS output.

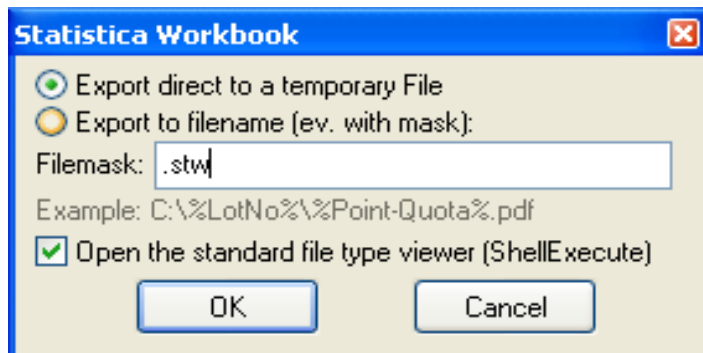


Figure 40: aStat / Output to STATISTICA Workbook

5.4 Parameter Check Directory

Use this setting to create reports depending on certain conditions in the “point table”.

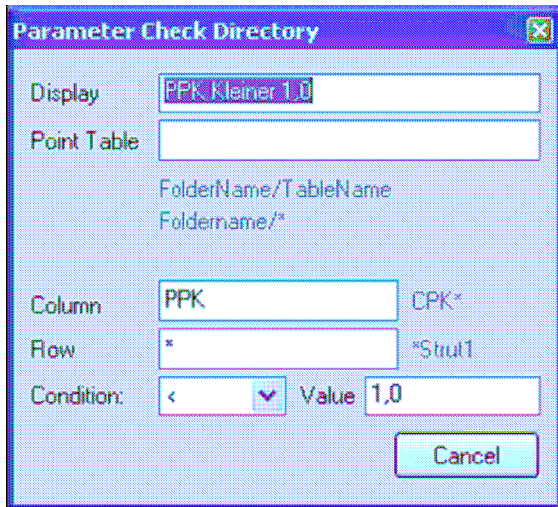


Figure 41: aStat / Output with Parameter Check

Remember that the condition has to exist in the “point table”. In the example a report is only created if *PPK* is smaller than 1.0.

5.5 Exit

Use the “exit” function in combination with “parameter check directory” to combine several conditions with OR.

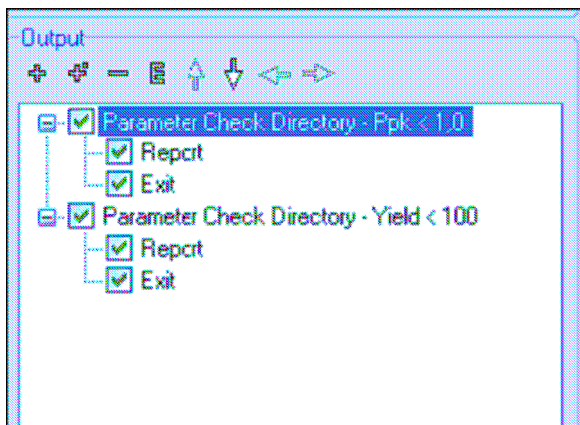


Figure 42: aStat / Output with Exit

In the example the report is created if *PPK* is smaller than 1.0 or *Yield* is smaller than 100.

6 Working with profiles

6.1 What are profiles?

Using profiles it is possible to create reports with one click.

A profile mainly contains:

- The pre selection of the relevant production or measurement information in any order
- The selection of any number of filters
- The selection and combination of different STATISTICA reports (report options) for charts and tables e.g. outlier analysis, quality charts, process analysis
- The kind of output: printer, xls or pdf file

A certain **aStat** setting is saved in a profile.


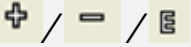




The profiles are secured by access rights and are unique by version.

6.2 Using profiles


A report is created using an existing setting or profile is done in the following way:

- Load a pre defined profile by clicking the *Load* button in the lower right area.
- In the columns it is possible to select single fields by click, e.g. *Product* or *LotNo*. Alternatively you can select all fields of a column with the *All* button.
- The button *Generate* generates the report.



	Load profile, execute
	Create / delete / edit folder Create / delete / edit profile
	Refresh: display profile changes
	Move out of the folder Group is a collection of filter options, this way they can be activated / deactivated together
	Move into the folder above
	<i>Show-Deleted</i> : deleted profiles are also displayed
<i>Edit Profile-Symbol</i>	This profile is fixed and can only be modified by a user with writing permission

6.3 Define profiles

-  Precondition for the definition of profiles is writing permission in the folder (e.g. technician rights).

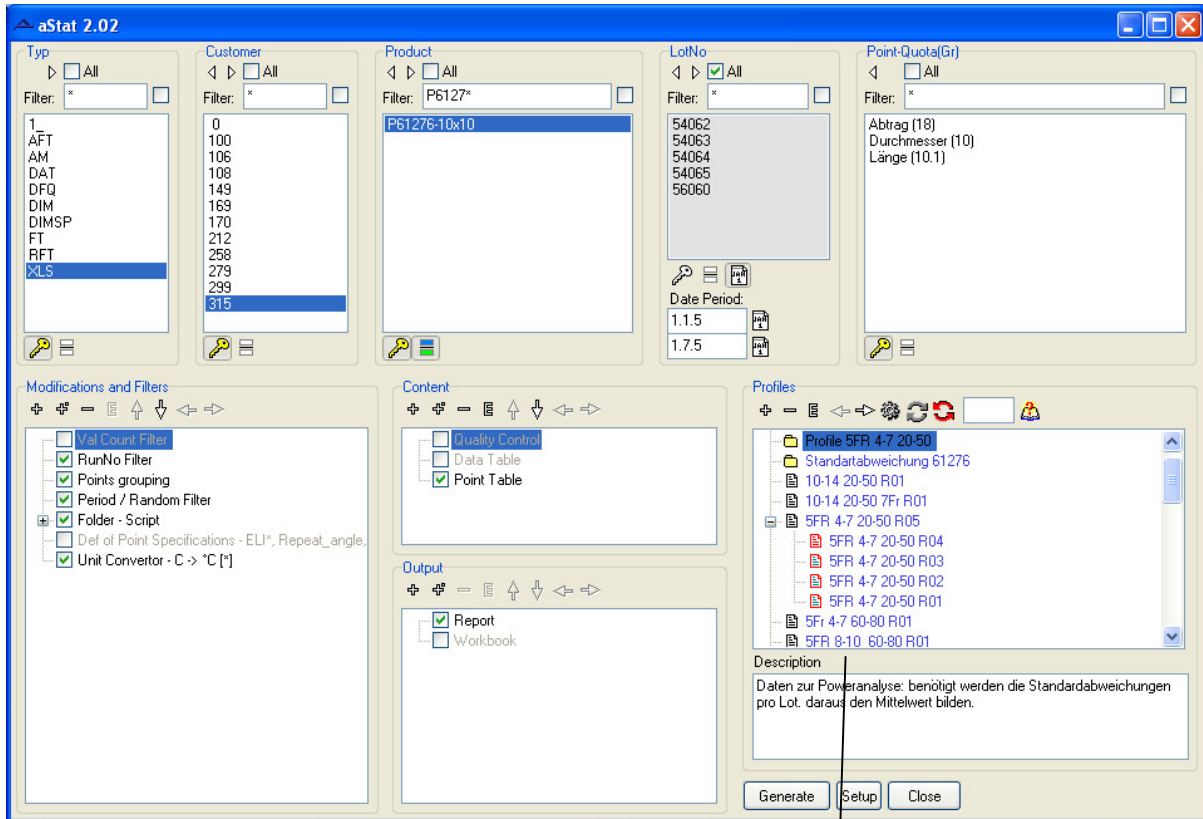
For defining a new profile perform the following steps:

- **Pre selection** of the data:

...

6.4 Profile Organize

...



Screen 43: aStat / Profile



<i>Folder on same level</i>	
<i>Profile on same level</i>	
<i>Folder lever lower</i>	.
<i>Profile level lower</i>	.
<i>New Revision for selected profile</i>	

6.5 Accessright and Version of Profiles

- Acces Rights will be inherited

- New Version of Existing Profile
- Reactivation of older Profiles

7 Tipps and Tricks

8 Appendix

8.1 Mess(Shuffler)-Database

8.2 Definitionen

aStat calculates und calssify the measured valus in following groups:

- *OK*.
- *(Outlier)* – inside of tolerances(**inklusiv**)
- *Unplausible Valaues (Implausible)* –:

implausible	Upper Limit
outlier	Upper Tolerance
OK	Quota
OK	Lower Tolerance
outlier	Lower Limit
implausible	

CPK Variations

- *PPK* – no grouping
 - *Point Table, Process Analysis* – alle Datensätze
 - *Quality Control* – nur die Datensätze, die in einer Berechnung von CPK vorkommen können.
- *CPK-Lot* – Grouped according to LotNo
 - *Quality Control/Point Table* – Sigma wird anhand von *ranges* ausgewertet.
 - *Process Analysis* – Sigma wird aus der Standardabweichung berechnet.
- *CPK-Period* – Gruppierung nach Period

- *Quality Control/Point Table* – Sigma wird anhand von *ranges* ausgewertet.
- *Process Analysis* – Sigma wird aus der Standardabweichung berechnet.

8.3 STATISTICA CPK Beschreibung

Potential capability (Cp). *This is the simplest and most straightforward indicator of process capability. It is defined as the ratio of the specification range to the process range; using ± 3 sigma limits we can express this index as:*

$$Cp = (USL - LSL) / (6 * \text{Sigma})$$

Put into words, this ratio expresses the proportion of the range of the normal curve that falls within the engineering specification limits (provided that the mean is on target, that is, that the process is centered).

Non-centering correction (K). *We can correct Cp for the effects of non-centering. Specifically, we can compute:*

$$K = \text{abs}(D - \text{Mean}) / (1/2 * (USL - LSL))$$

Where $D = (USL + LSL) / 2$. This correction factor expresses the non-centering (target specification minus mean) relative to the specification range.

Demonstrated excellence (Cpk). *Finally, we can adjust Cp for the effect of non-centering by computing:*

$$Cpk = (1 - k) * Cp$$

If the process is perfectly centered, then k is equal to zero, and Cpk is equal to Cp. However, as the process drifts from the target specification, k increases and Cpk becomes smaller than Cp.

Capability ratio (Cr). *This index is equivalent to Cp; specifically, it is computed as $1/Cp$ (the inverse of Cp).*

Estimate of sigma. *When the data set consists of multiple samples, such as data collected for the quality control chart, then one can compute two different indices of variability in the data. One is the regular standard deviation for all observations, ignoring the fact that the data consist of multiple samples; the other is to estimate the process's inherent variation from the within-sample variability. When the total process variability is used in the standard capability computations, the resulting indices are usually referred to as process performance indices (as they describe the actual performance of the process; common indices are Pp, Pr, and Ppk), while indices computed from the inherent variation (within-sample sigma) are referred to as capability indices (since they describe the inherent capability of the process; common indices are Cp, Cr, and Cpk).*

Potential Capability II: C_{pm} . A recent modification (Chan, Cheng, & Spiring, 1988) to C_p is directed at adjusting the estimate of Sigma for the effect of (random) non-centering. Specifically, we may compute the alternative Sigma (Sigma₂) as:

$$\text{Sigma}_2 = \{\Sigma(x_i - TS)^2 / (n-1)\}^{1/2}$$

where

- Sigma₂ is the alternative estimate of sigma
- x_i is the value of the i'th observation in the sample
- TS is the target or nominal specification
- n is the number of observations in the sample

We can then use this alternative estimate of *Sigma* to compute C_p as before; however, we will refer to the resultant index as C_{pm}