HEXAGON

Q-DAS QAE

QAE – Button Bars

How to work with the button bars in QAE

FAQ
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Information about this document

Parts of this document may be automatically translated.

Document History

Version	Date	Author(s)	Modifications / Remarks
v-0.9	05.07.2023	GA	Initial release

CONTENTS

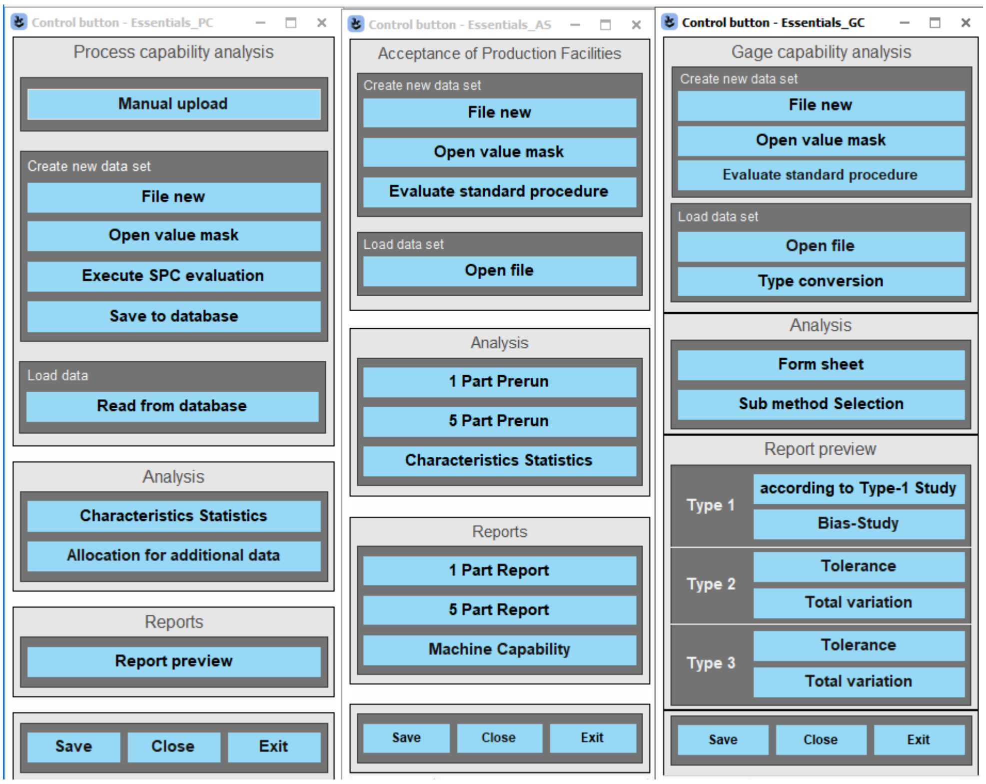
1 Button Bars in QAE

The button bars are an elementary component of the Q-DAS Product Line and can be found in almost all products. To make the usage of the software as easy as possible, new button bars were made in QAE for the modules Measurement system analysis, Sampling analysis and Process analysis. The new button bars replace the old ones from previous version of QAE.

The selection of functionalities available on the button bars is only a fraction of what is available in the QAE product. Each of the functionalities shown exists in the classic ribbon and is also used in the “Full Suite” of the Q-DAS Product Line, usually without the use of button bars. Therefore, after some familiarisation, the user should look at the possible graphics and options offered in the ribbon to see the full potential of the QAE product.

The button bars are divided into 4 sections:

- Creating new data sets (new file or manual upload)
- Loading existing data pools
- Viewing the evaluation
- Viewing defined reports

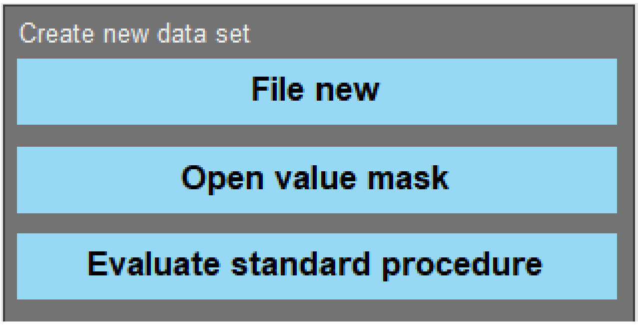


The sections and their functions will be discussed in the coming chapters.

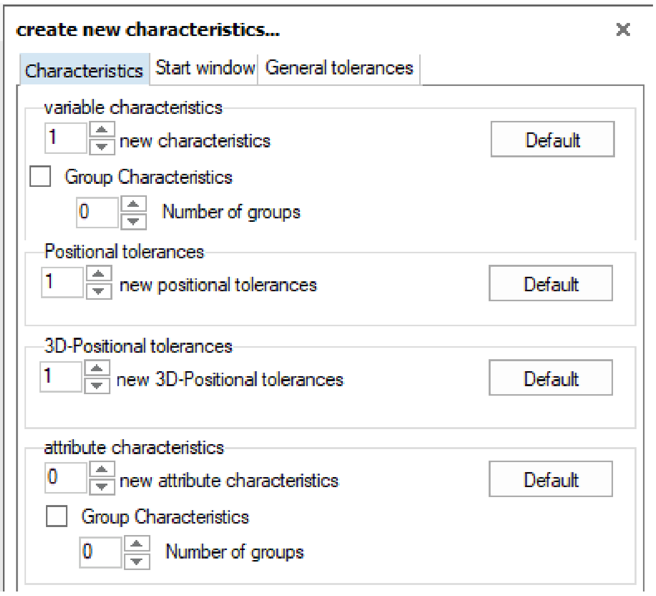
1.1 Button Bar in Sample Analysis (Machine Capability)

The button bar in the module “Sample Analysis” is predefined to work with dfq-files. Every dfq-file is an own “study” and does not get more or different values after the study is completed.

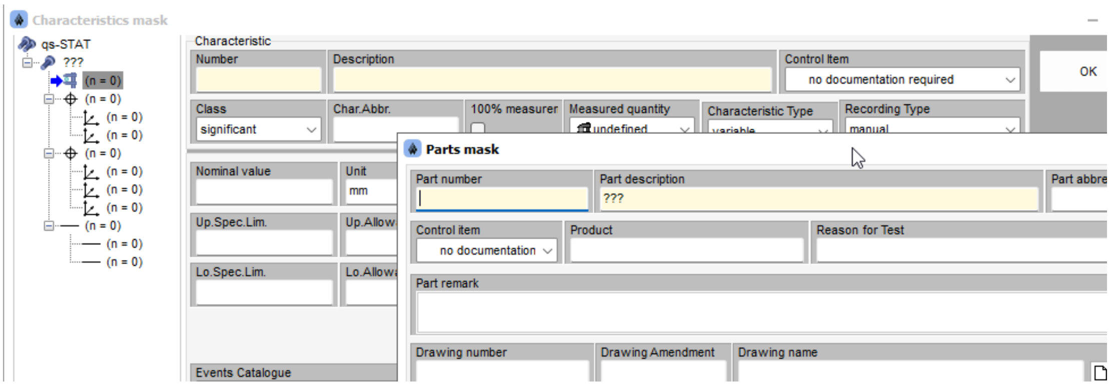
1.1.1 Create data



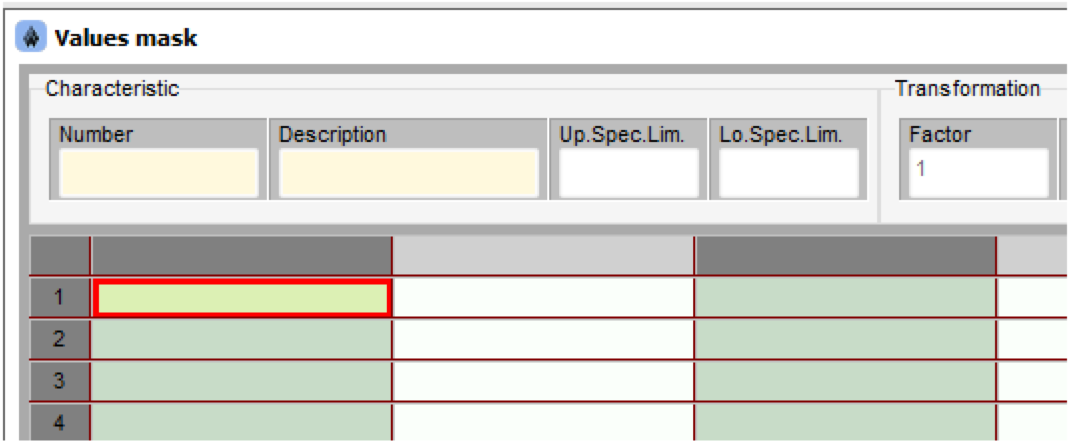
With “File new” a new dataset can be created. In the upcoming window, the number of characteristics can be chosen for the different types of characteristics.



Part mask and Characteristic mask are opened:

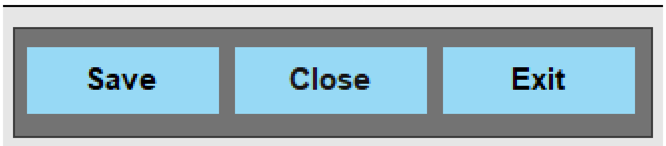


After filling out the header information in Part and Characteristics masks, the value mask can be opened with the button “Open value mask”, to type in the values:

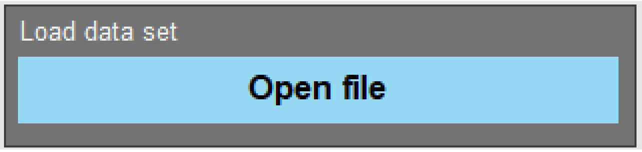


After the values have been collected, the calculation can be done with “Evaluate standard procedure” button.

To save the dataset as a dfq-file, the button “Save” on the bottom is used.

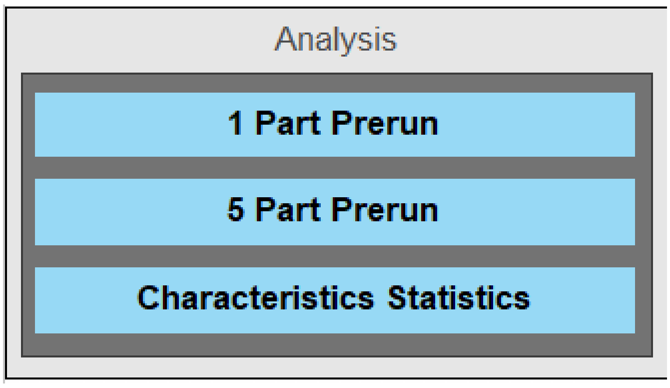


1.1.2 Load data



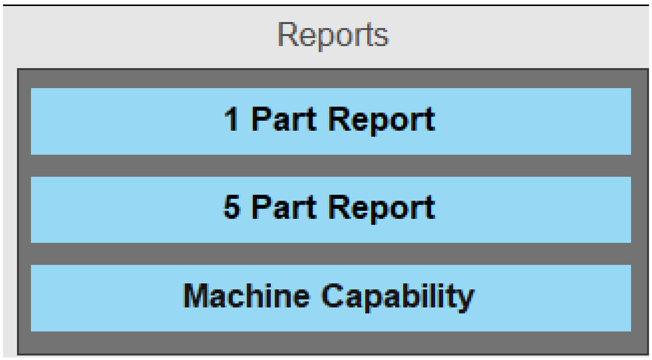
The “Open file” button opens the directory for loading the previously saved files. By default, this is the “OwnData” folder.

1.1.3 Analyse data

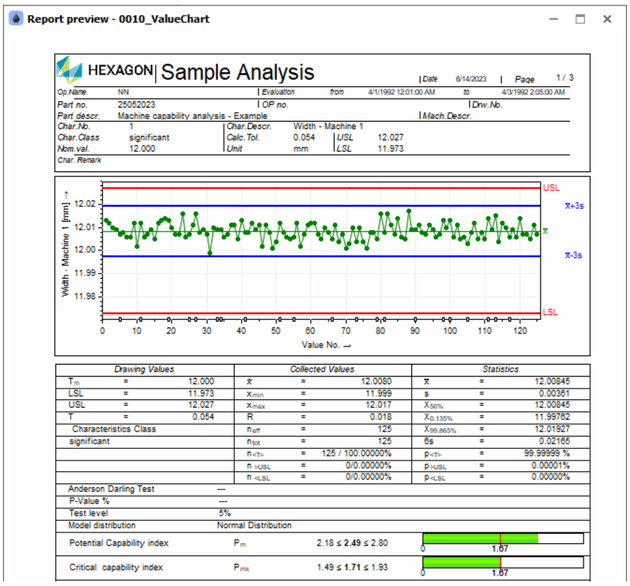


In the module “Sample Analysis” 3 main analyses are available. Next to the classical Machine-capability also the “1 Part Prerun” and the “5 Part Prerun” exists, where just the first measurement (1-Part) or the first subgroup (5-Part) is analysed. The dfq-files does not know what kind of study this is. The user can define which of this 3 Analysis should be done.

1.1.4 Show Report preview



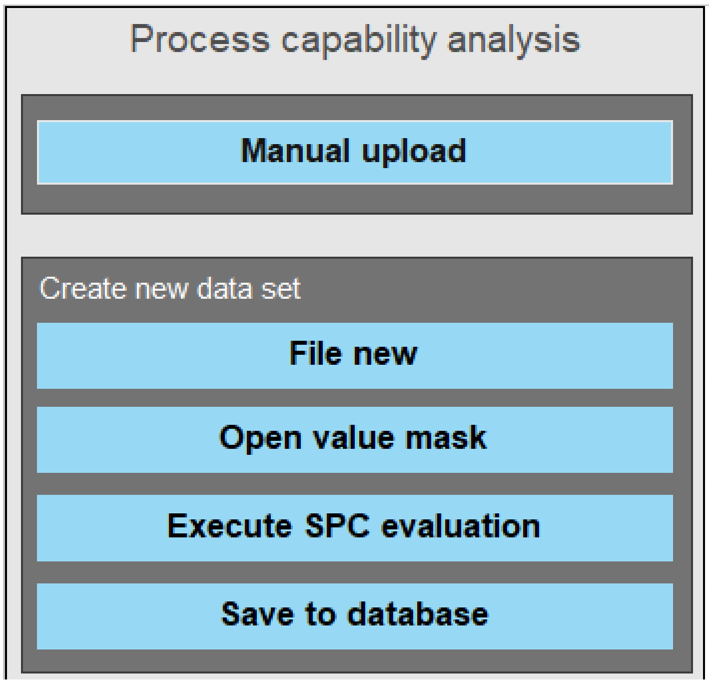
There are predefined reports for the 3 main analysis. To view them in the “Report preview”, click on the appropriate button. The "Report view" also enables the reports to be printed.



1.2 Button Bar in Process Capability Analysis

The button bar in the module "Process Capability Analysis" is predefined to work with values from database. A permanent dataflow from new SPC-data to existing test plans.

1.2.1 Create data

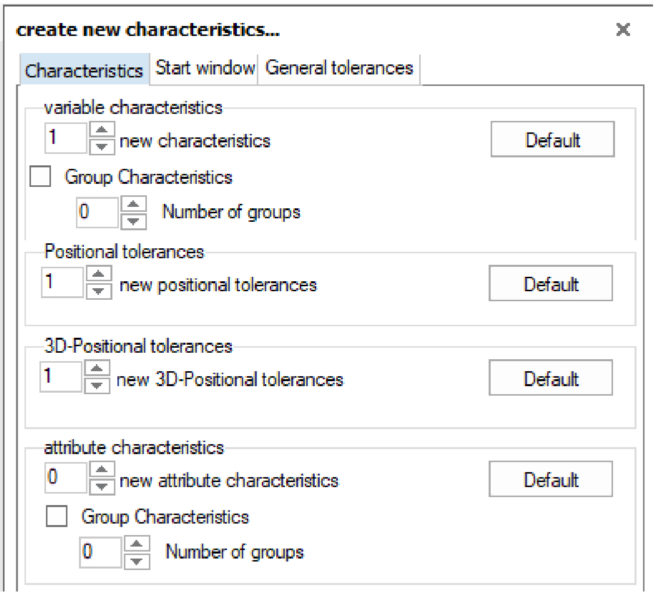


As the focus in the module "Process Capability Analysis" is the working with the database, the first option is the manual upload, to upload dfq-files created by the measuring gage.

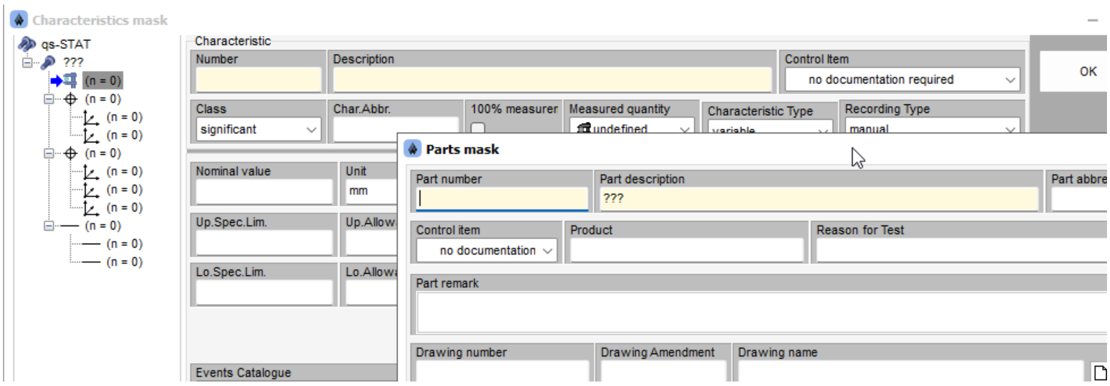
Detailed information about manual upload can be found in the latest help:

Upload (manual) (hexagonmi.com)

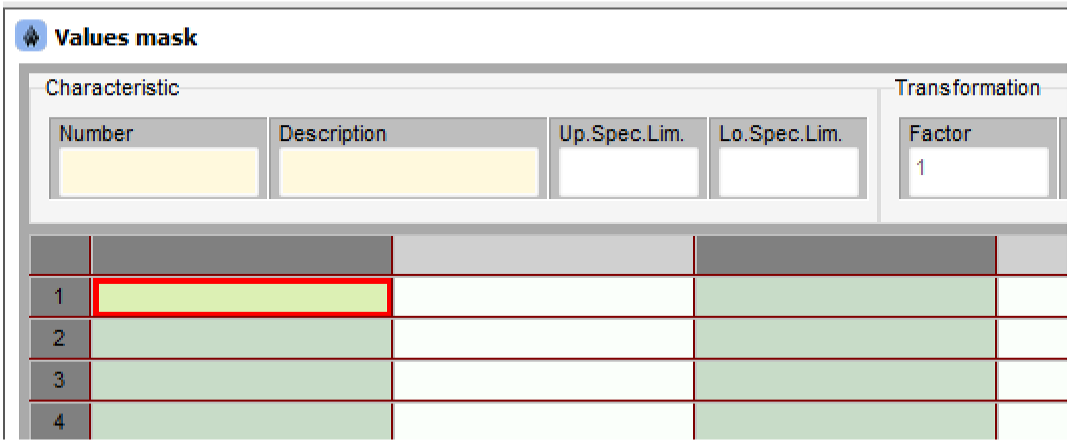
With “File new” a new dataset can be created. In the upcoming window, the number of characteristics can be chosen for the different types of characteristics.



Part mask and Characteristic mask are opened:



After filling out the header information in Part and Characteristics masks, the value mask can be opened with the button “Open value mask”, to type in the values:



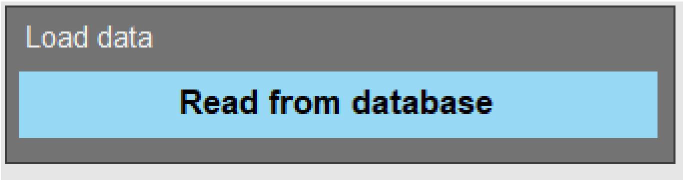
After the values have been collected, the calculation can be done with “Execute SPC evaluation” button.

In addtition to the button “File new”, the button “Save to database” is available. This button is ONLY to be used, when the dataset has been newly created (“File new”), and the intention is to save it as new test plan in the database. This button is available only in the button bar for module “Process capability analysis”.

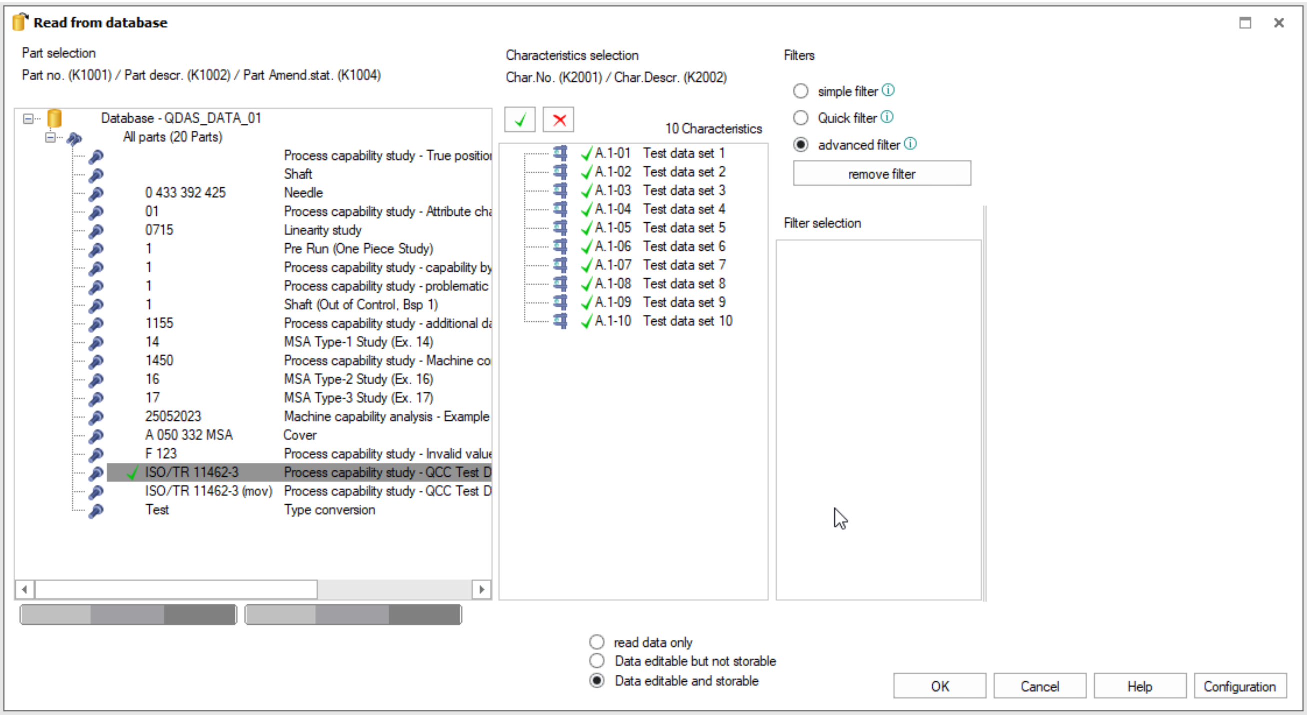
To save to a dfq-file, or just to save back a test plan what has been read before (independent from the source) the button “Save” on the bottom of the button bar should be used.

1.2.2 Load data

The intended use is to load data directly from the data database. Instead of the button “File open”, the button “Read from database” should be used.



The dialog window will pop up with the list of saved test plans.

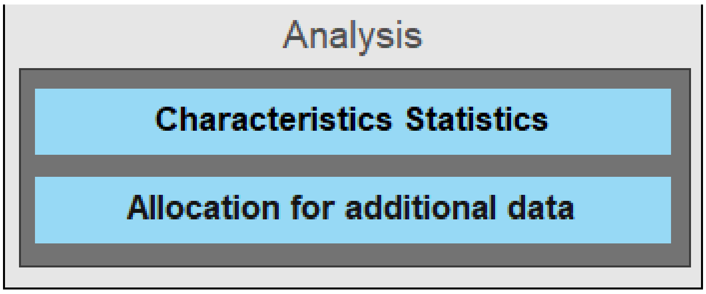


There is a lot of possibilities and advantages with using “Read from database” dialog. Only few are mentioned in this document. Detailed information about “read from database” can be found in the latest help:

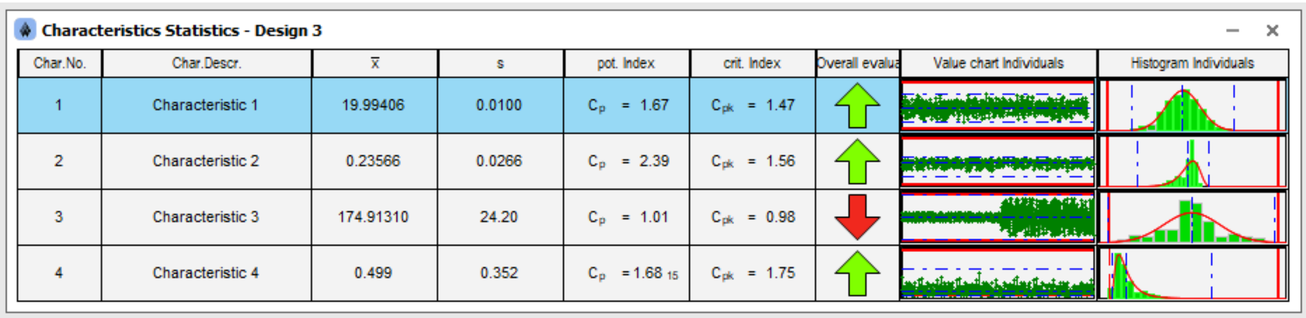
Read from database (hexagonmi.com)

Note: It should be noted that the software documentation is prepared for the Q-DAS Product Line and does not address the limitations of the QAE.

1.2.3 Analyse data

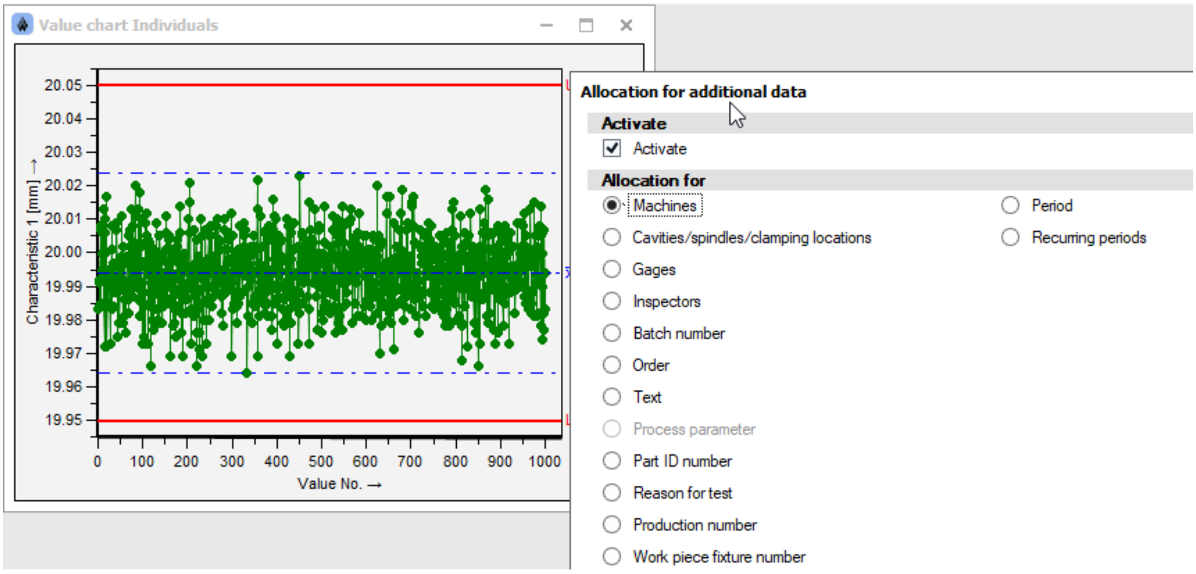


The button “Characteristics Statistics” will close all other graphics and shows an overview of the characteristics:

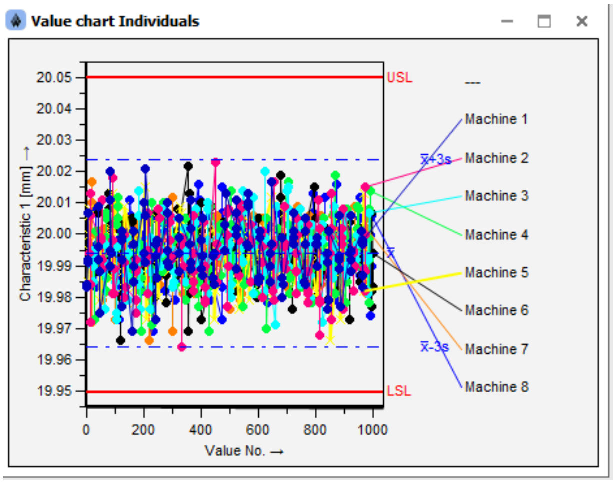


Char.No.	Char.Descr.	$\bar{x}$	s	pot. Index	crit. Index	Overall evalua	Value chart Individuals	Histogram Individuals
1	Characteristic 1	19.99406	0.0100	C_p = 1.67	C_{pk} = 1.47			
2	Characteristic 2	0.23566	0.0266	C_p = 2.39	C_{pk} = 1.56			
3	Characteristic 3	174.91310	24.20	C_p = 1.01	C_{pk} = 0.98			
4	Characteristic 4	0.499	0.352	C_p = 1.68 15	C_{pk} = 1.75			

With the button “Allocation of additional data” all other graphics are closed, the Graphic “Value chart” is opened, and the dialog to allocate different additional data.



After activation, the additional data will be displayed in the graphic according to the selected allocation:

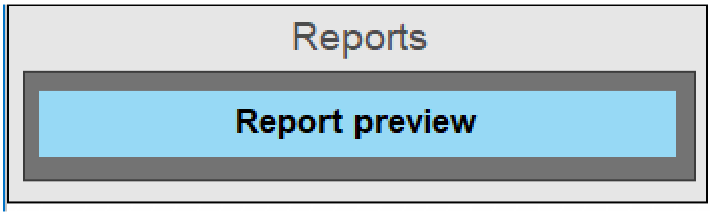


Detailed information about “Allocate additional data” can be found within the document “Value chart” in the latest help:

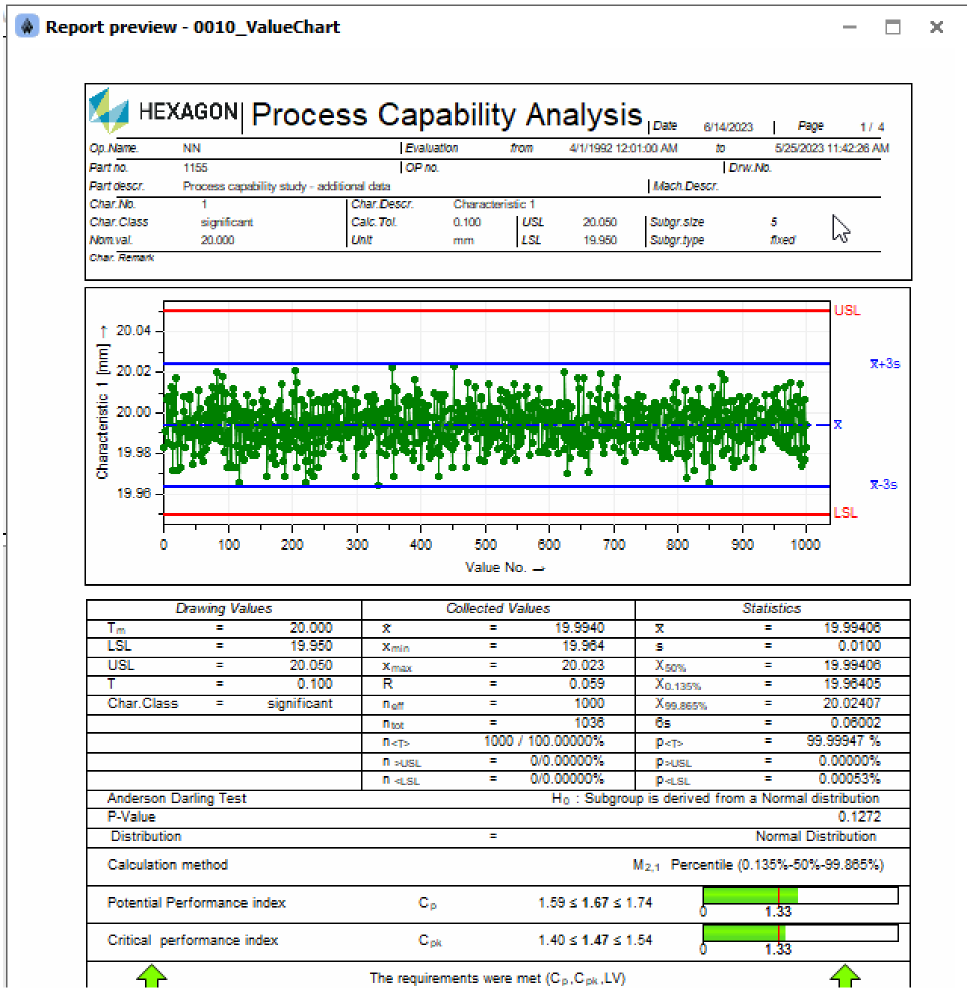
Value chart (hexagonmi.com)

Note: It should be noted that the software documentation is prepared for the Q-DAS Product Line and does not address the limitations of the QAE.

1.2.4 Show Report preview



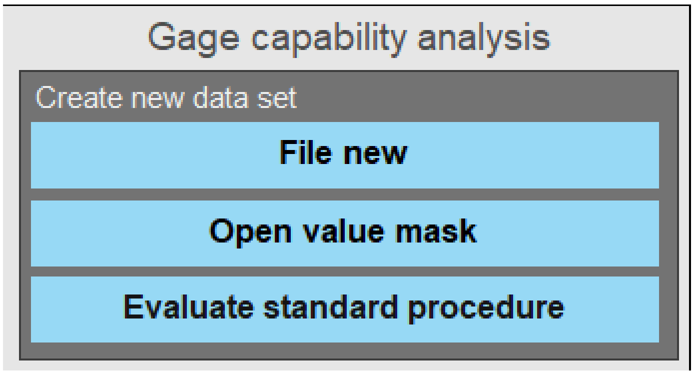
A default report is configured for “Process Capability Analysis” which can be accessed via the “Report preview” button.



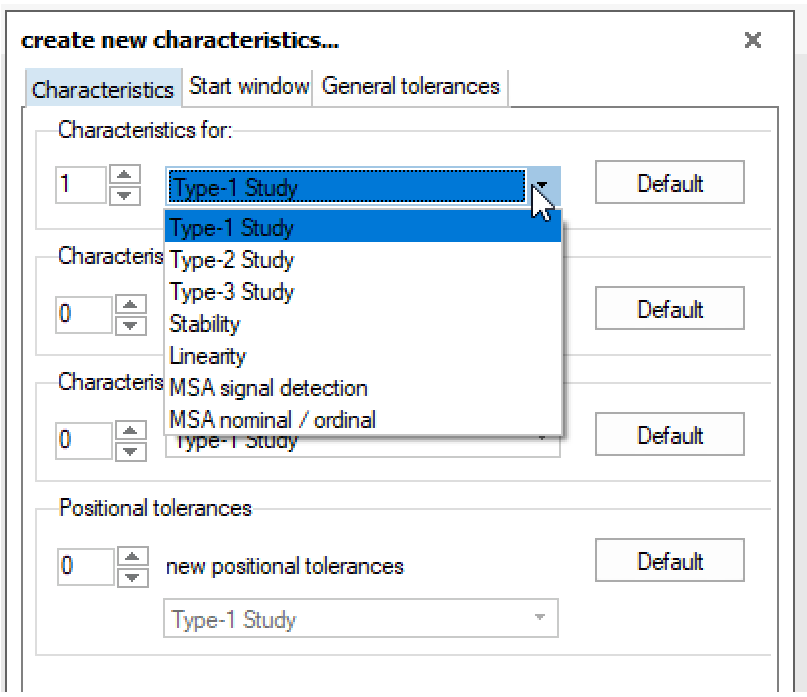
1.3 Button Bar in Measurement System Analysis

The button bar in the module “Measurement system analysis” is predefined to work with dfq-files. Every dfq-file is an own “study” and does not get more or different values after the study is completed.

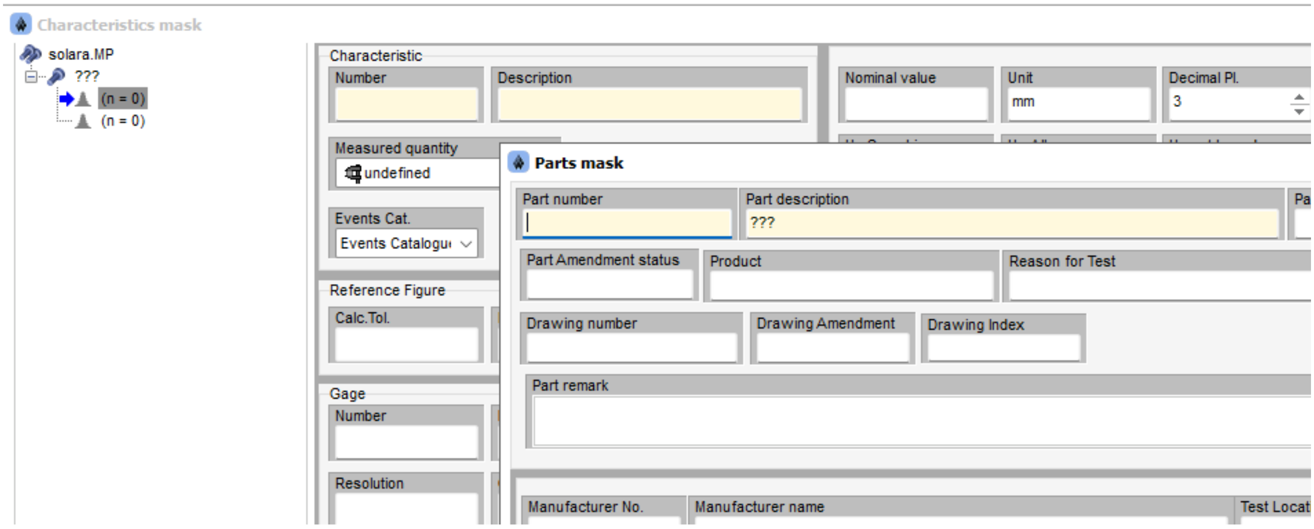
1.3.1 Create data



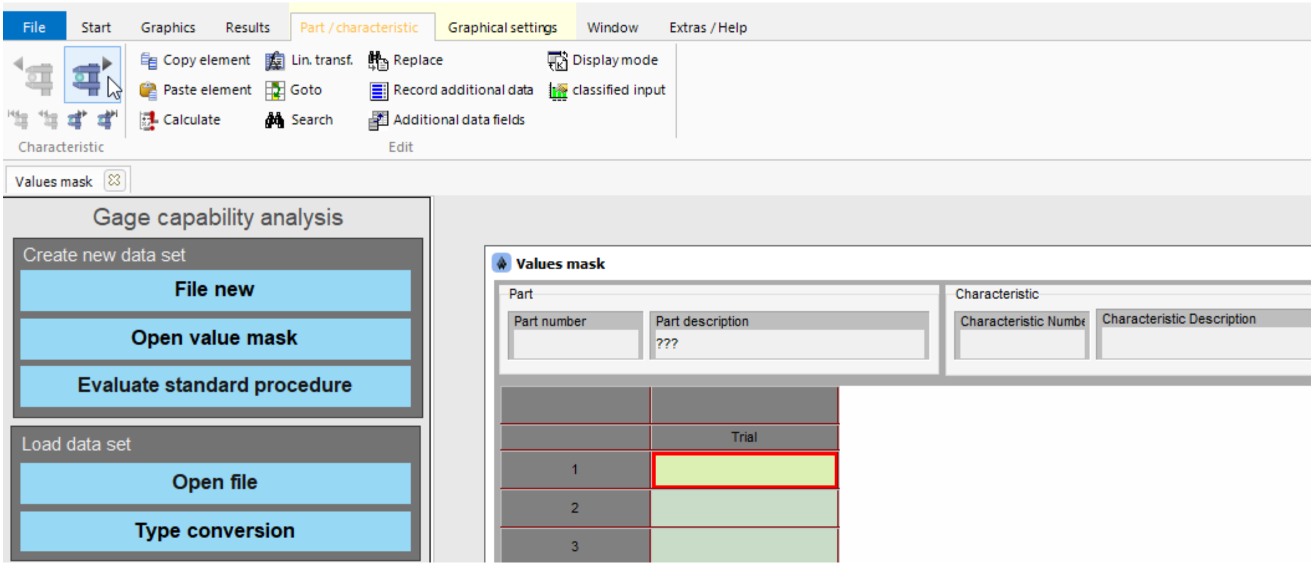
With “File new” a new dataset can be created. In the upcoming window, the number of the characteristics can be chosen for the different types of studies.



Part mask and Characteristic mask are opened:

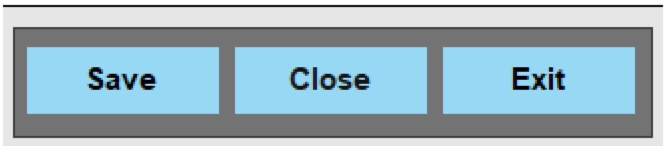


After filling out the header information in Part and Characteristics masks, the value mask can be opened with the button "Open value mask", to type in the values. In "Measurement System Analysis", the value mask is shown characteristic by characteristic. The moving from one characteristic to the other can be done with the buttons in the ribbon bar.

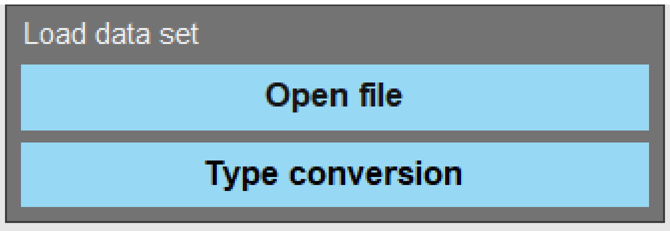


After the values have been collected, the calculation can be done with "Evaluate standard procedure".

To save the dataset as a dfq-file, the button "Save" is used:



1.3.2 Load data



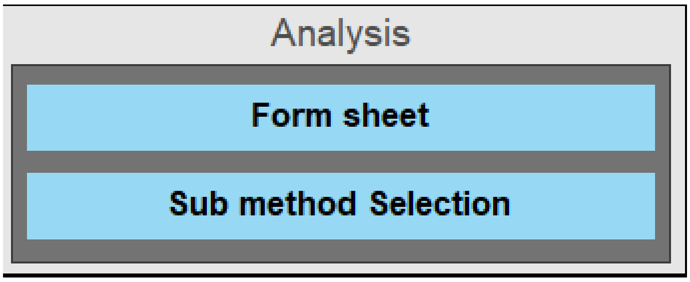
Already created studies can be opened via button “Open file”.

Next to “Open file” the “Type conversion” is existing. If the dataset has been exported from a measuring gage without any more information there might be desire to convert it into a type 2 or type 3 study.

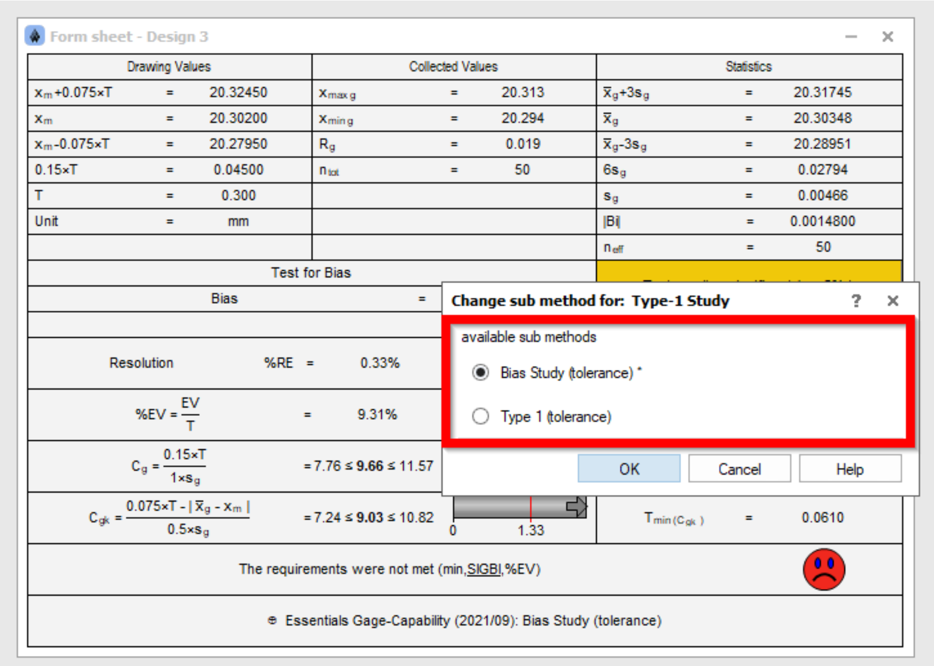
Detailed information about “type conversion” can be found in the latest help:

type conversion (hexagonmi.com)

1.3.3 Analyse data



The button “Form Sheet” will open the “Form sheet – Design 3”. For most types of MSA, different sub-methods with different requirements are available. With the button “Sub method Selection” the different methods can be chosen.

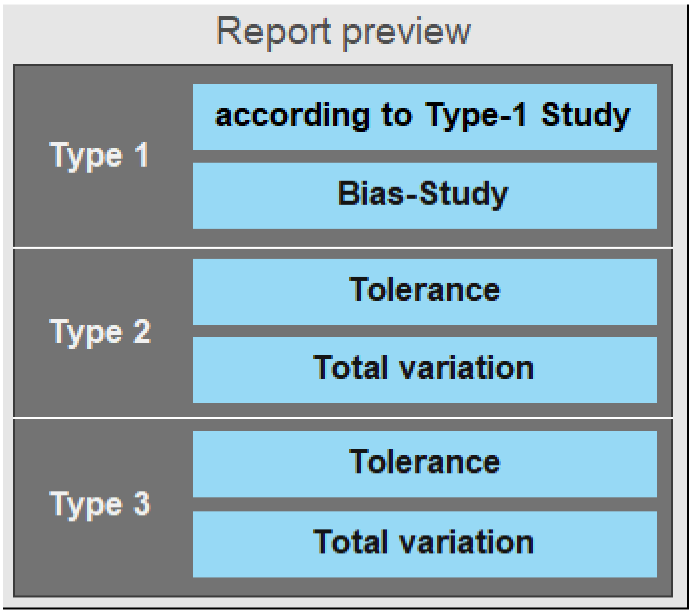


Detailed information about “Form Sheets” can be found in the latest help:

Form sheets (hexagonmi.com)

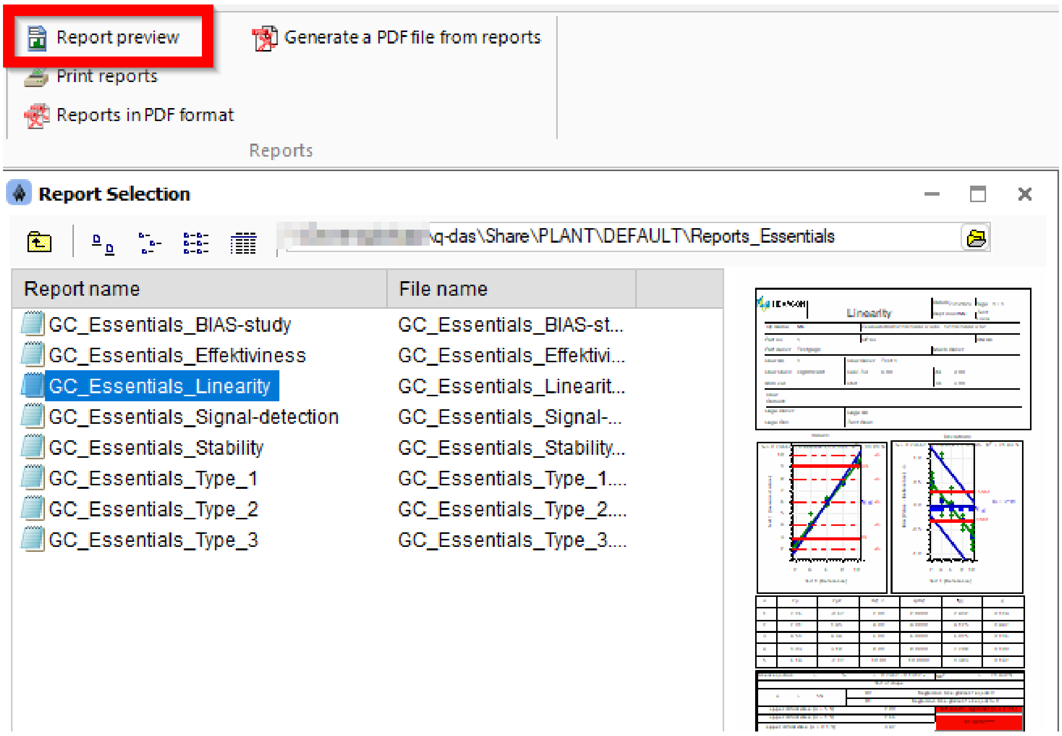
Note: It should be noted that the software documentation is prepared for the Q-DAS Product Line and does not address the limitations of the QAE.

1.3.4 Show Report preview



For the 3 main types, the report previews are predefined. With the button, the correct sub-method for the analysis is chosen, and the report preview is opened.

For the other studies, the “Report preview” in the ribbon bar must be used.

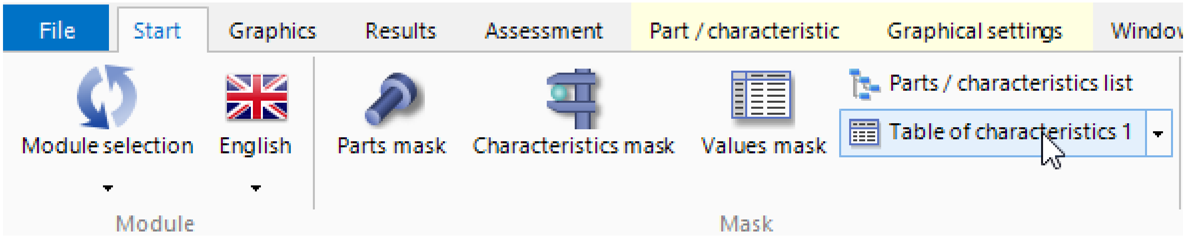


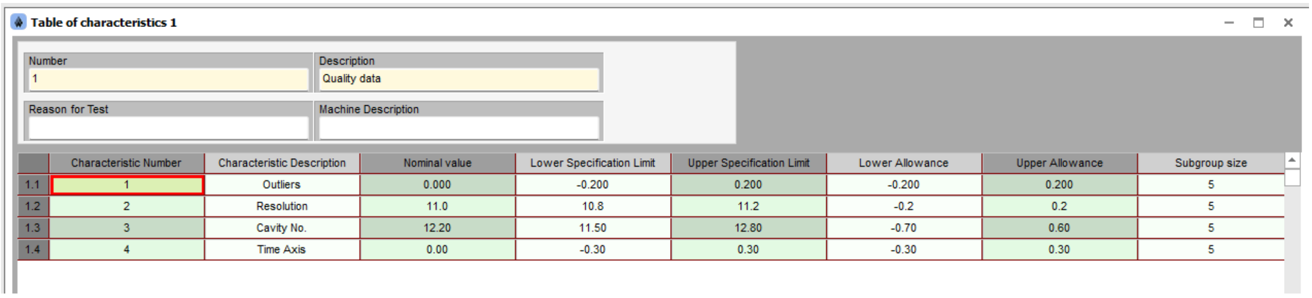
1.4 Advanced possibilities without the Button Bar

As mentioned in the chapter “Foreword”, there are more possibilities in QAE than available in the button bar. The following sub chapters present a rough overview.

1.4.1 Create data

The “Table of characteristics” is available as another “mask”. In this table, the characteristics can be displayed and edited all together.

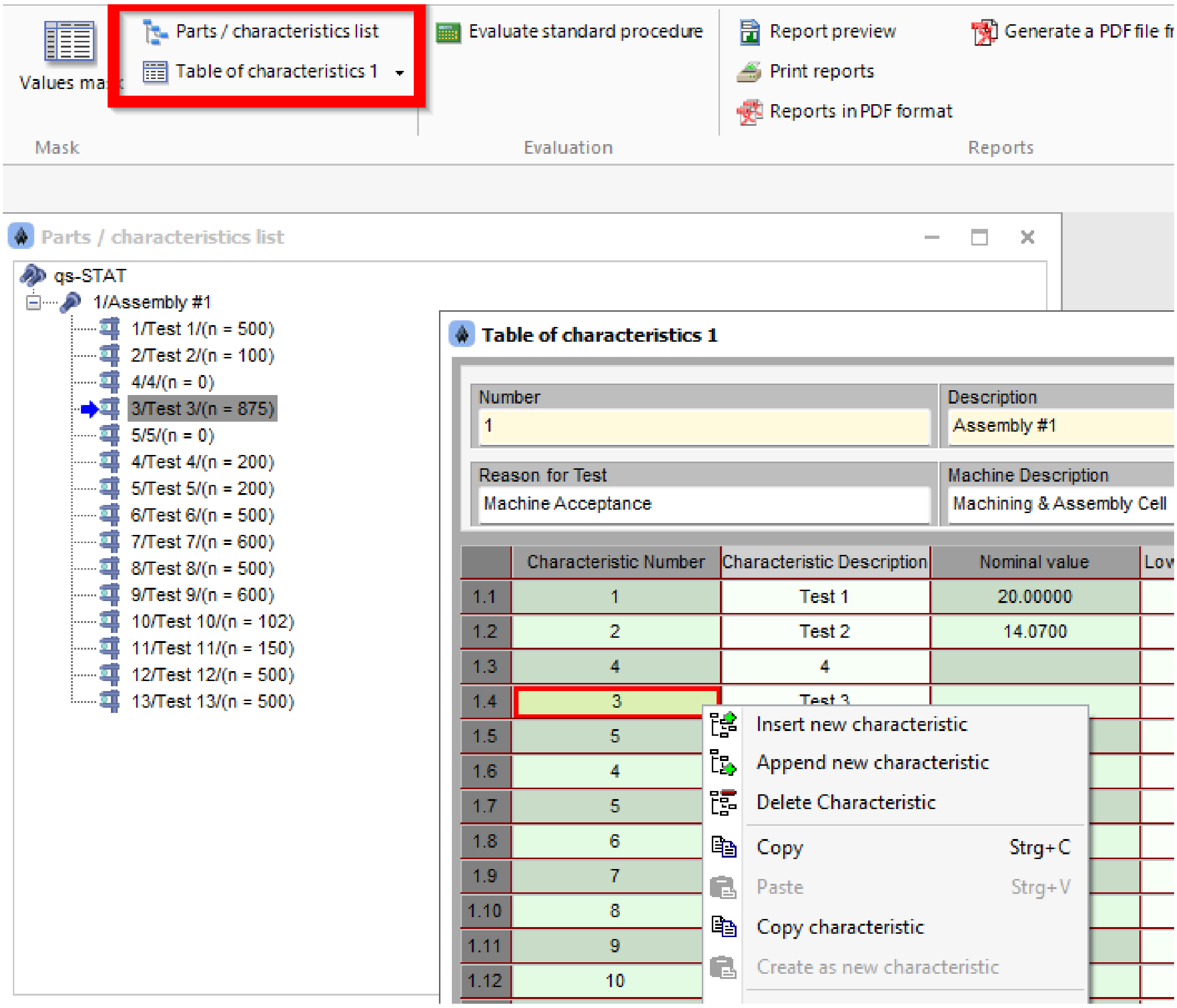




	Characteristic Number	Characteristic Description	Nominal value	Lower Specification Limit	Upper Specification Limit	Lower Allowance	Upper Allowance	Subgroup size
1.1	1	Outliers	0.000	-0.200	0.200	-0.200	0.200	5
1.2	2	Resolution	11.0	10.8	11.2	-0.2	0.2	5
1.3	3	Cavity No.	12.20	11.50	12.80	-0.70	0.60	5
1.4	4	Time Axis	0.00	-0.30	0.30	-0.30	0.30	5

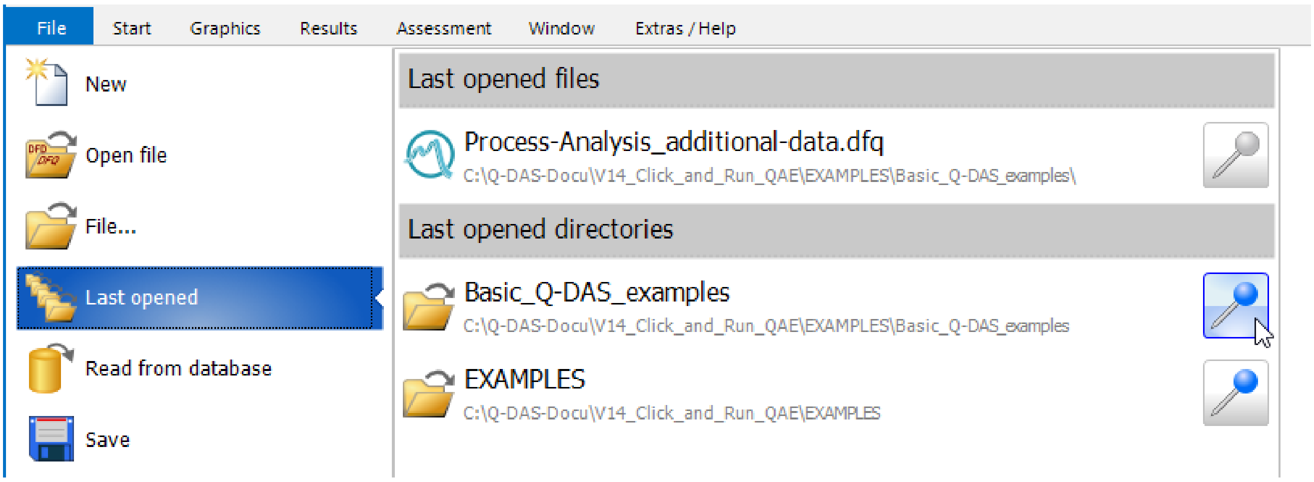
In the “Parts / characteristics list” or in the “Table of characteristics” new characteristics can be created to an existing dataset.

With "Insert new characteristic" a new characteristic is created BEFORE the characteristic on which the right mouse click was made. With "Append new characteristic" a new characteristic is inserted AFTER.



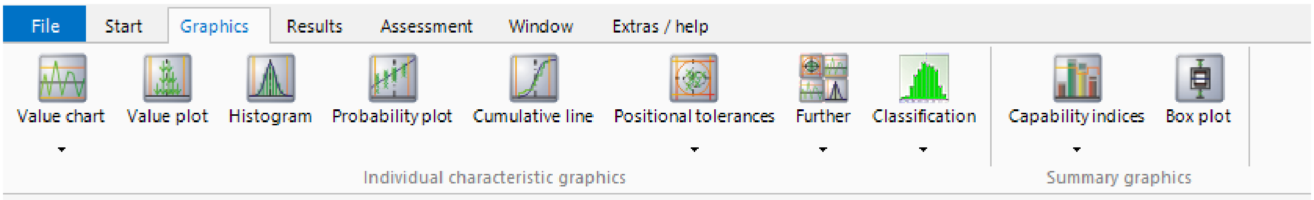
1.4.2 Load data

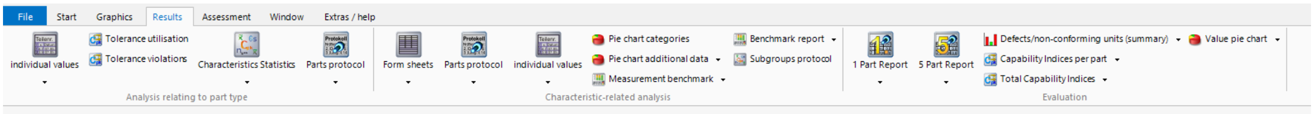
In the “File” menu the options for opening the dfq-files are available. The “Last opened” lists the most recently opened and used files and directories. Some of the listed elements are pinned. It is also possible to pin own files or directories or remove elements that are already pinned.

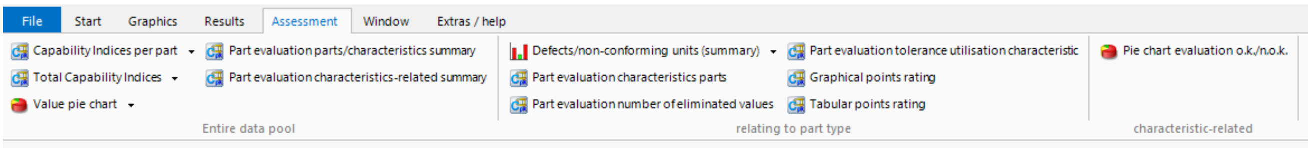


1.4.3 Graphics

In the following 3 registers or the ribbon bars many graphics for individual characteristics or overview are available.

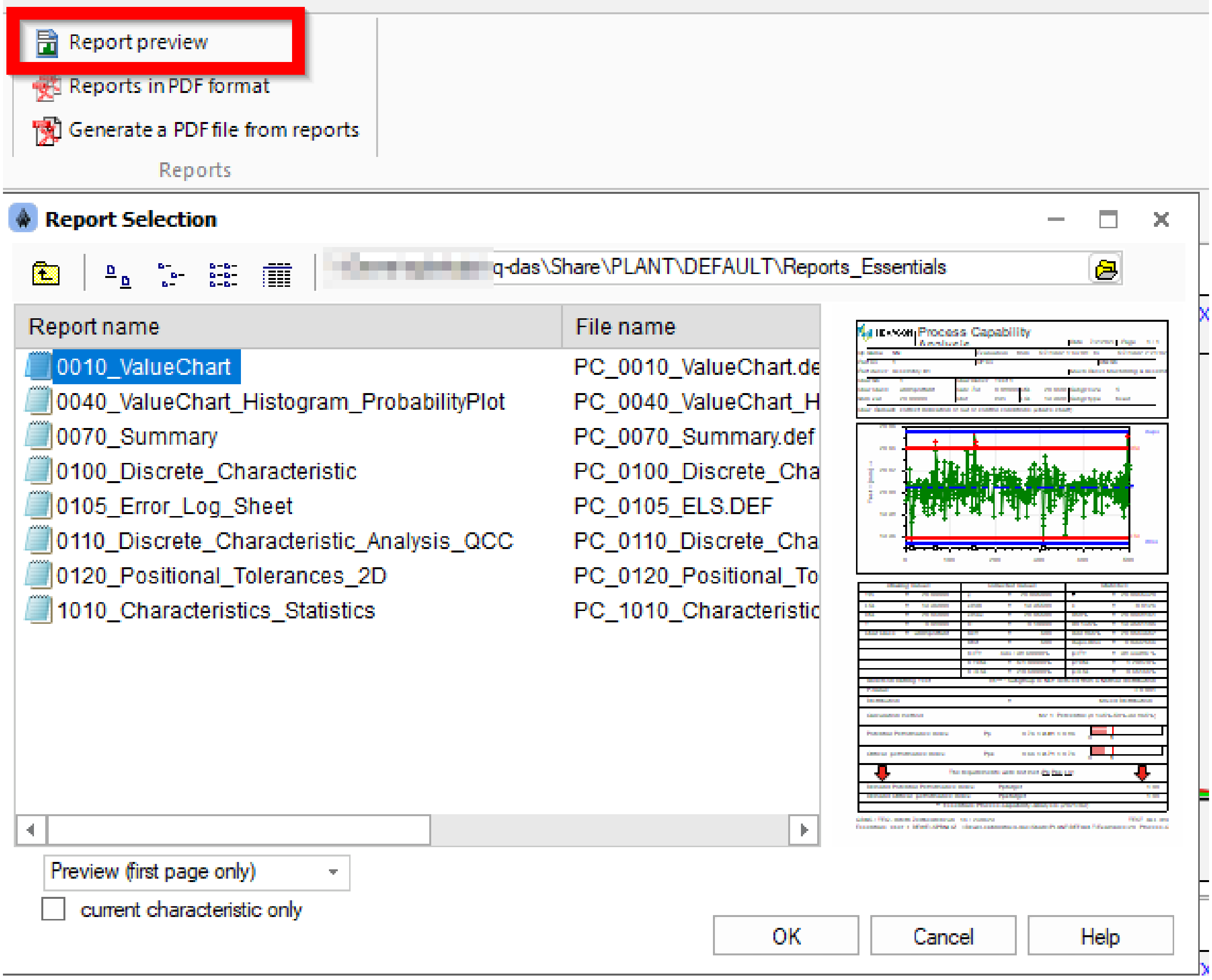






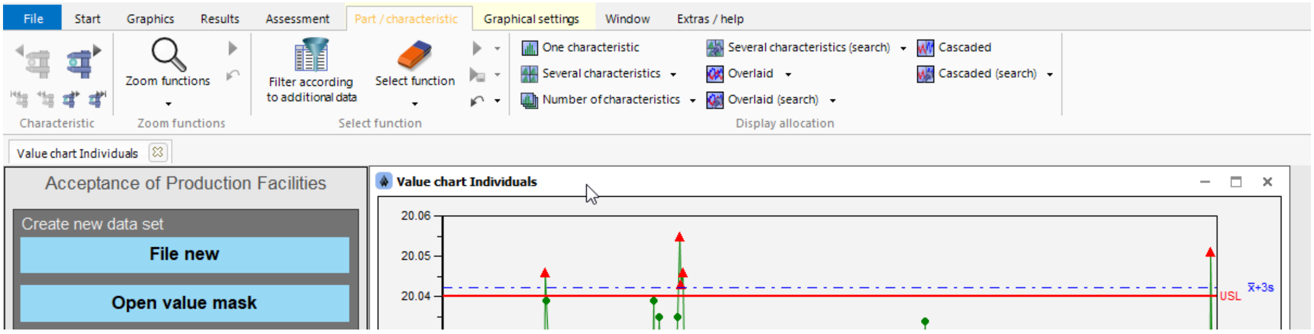
1.4.4 Show Report preview

Only defined reports are available from the toolbars. The “Report preview” can be used to load all available reports. The first page of the report is displayed in the selection dialogue box when a report is selected.



1.4.5 Register “Parts / Characteristics”

Depending on the opened and active graphic (the value chart in the screenshot) this registers shows some possibilities to zoom, to select, and to overlay individual graphics.



Detailed information about “Parts / Characteristics” can be found in the latest help:

Part / characteristic - menu (hexagonmi.com)

Note: It should be noted that the software documentation is prepared for the Q-DAS Product Line and does not address the limitations of the QAE.