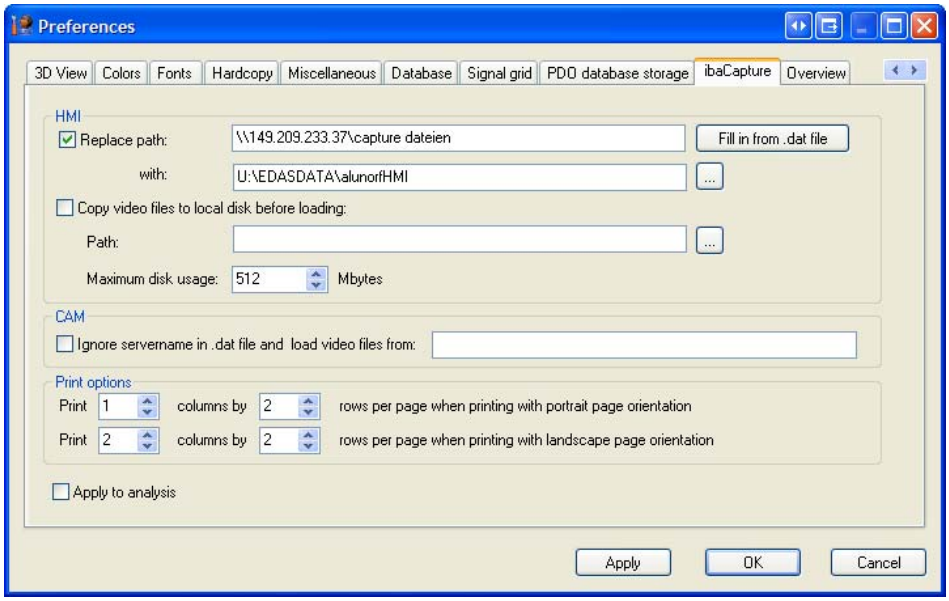
IbaAnalyzer 5.17.3 new functionality description

ibaCapture-HMI new features

It was already possible to print ibaCapture-CAM videos (i.e. the current frame was included in the printout), include them in reports and embed them in the .dat file when exporting. This is now also implemented for ibaCapture-HMI videos.

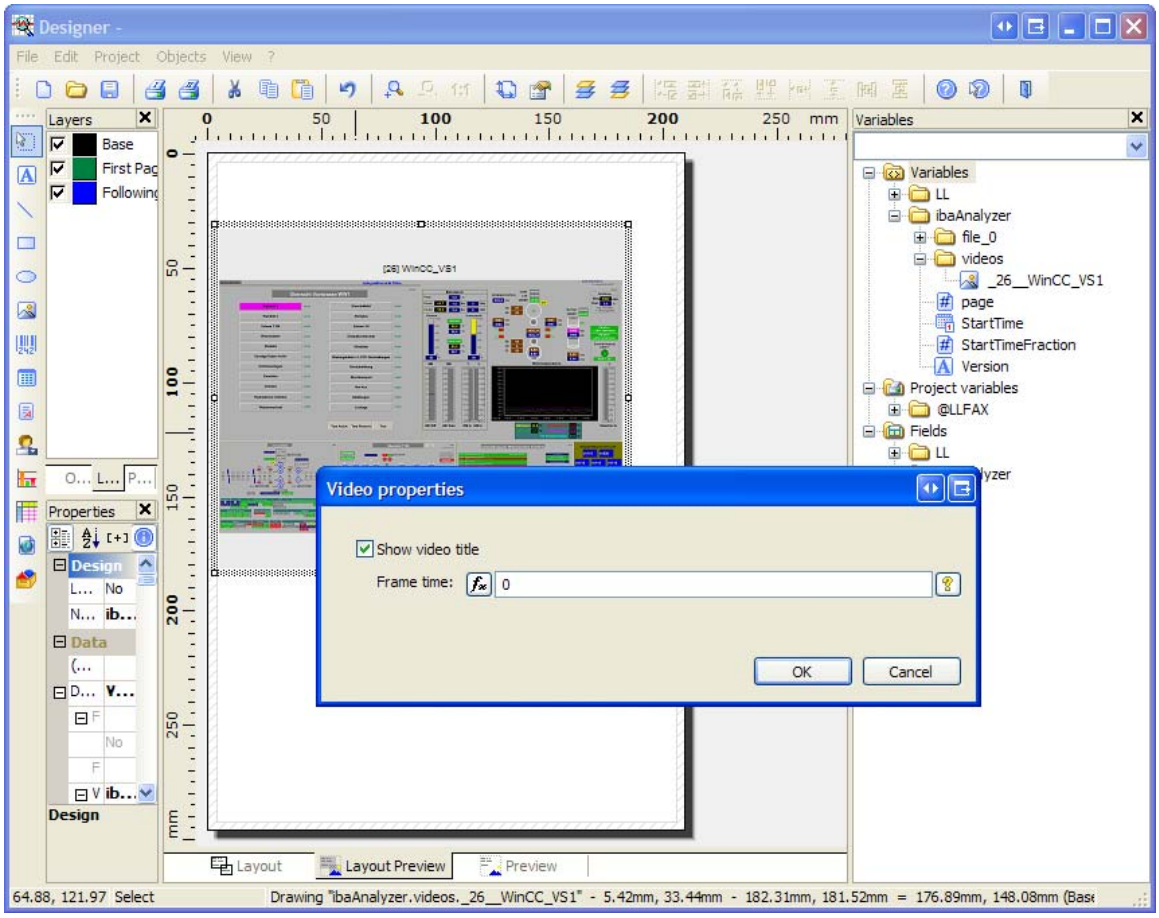
Print

If you have ibaCapture-HMI videos visualized in ibaAnalyzer at the time of printing, they will be included in the printout similar to ibaCapture-CAM videos.
Notice that in the ibaCapture tab in the Preferences or Analysis Setup the print options are now a separate group instead of being part of the ibaCapture-CAM group. This is because the options now not only apply to ibaCapture-CAM solely but to ibaCapture-HMI as well.



Report

Similar as ibaCapture-CAM videos, any visualized ibaCapture-HMI videos can be placed in a report. The objects can be dragged from the videos subnode under the ibaAnalyzer subnode in the variables tree. Selecting Properties->Data->Contents (or double clicking on the object) allows you to set the frame time and whether or not you want to see the ibaCapture-HMI video title (i.e. the module name of the HMI module). The frame time can be an ibaAnalyzer expression, zero (the default value) corresponds to the beginning of the loaded .dat file.



Embedding videos in exported .dat file

If in the export dialog you select the option “Export videos as part of data file”, both ibaCapture-HMI as ibaCapture-CAM videos will be embedded in the exported .dat file.
To export only HMI or only CAM, use “Free signal selection” and select the appropriate video modules.
Note that when visualizing an ibaCapture-HMI video embedded in a .dat file, the ibaCapture-HMI preference options “Replace path…” and “Copy video files to local disk before loading” will be ignored.

Functions applied to non-equidistant data

When data is imported through a trend-query, imported from a CSV file or generated with the aid of the XY-function, the resulting signals are non-equidistantly sampled. This means that the time interval or distance between two samples is variable. While such signals could be visualized in ibaAnalyzer without much difficulty, using them in an ibaAnalyzer function (even a trivial function as multiplying by a constant) caused ibaAnalyzer to resample the data before the function was applied.
This had undesirable side effects, for instance when taking the average the resampling caused samples that are close together to be weighted less in the average than samples that are more dispersed.
Currently a number of functions are adapted so that they do not resample their arguments provided that only one argument is non-equidistant and the other arguments are constants.
In version 5.17.3 of ibaAnalyzer the following functions are adapted:

```
Unary –
-
*
/
+
<
<=
<>
=
>
>=
abs
acos
AND
asin
atan
avg
ceil
convertbase
cos
exp
floor
log
log10
max
max2
min
min2
mod
not
OR
percentile
pow
resample
round
shl
```

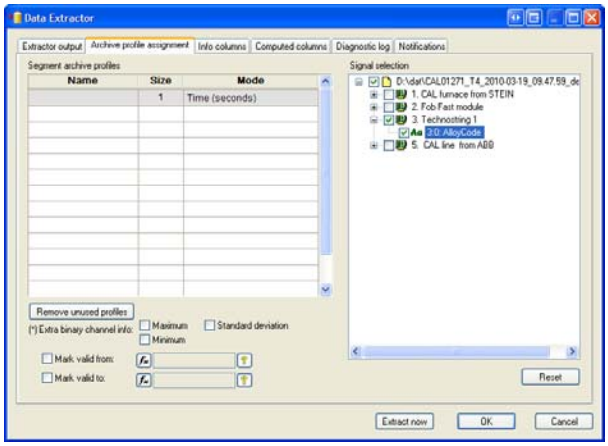
```
shr
sign
sin
sqrt
stddev
tan
XOR
xy
```

More functions may be adapted in future versions of ibaAnalyzer.
With the exception of “avg”, “min”, “max”, “stddev”, “percentile” and “resample”, the result of the function when applied to non-equidistant data is also a non-equidistantly sampled signal.
Also the statistics in the ibaAnalyzer statistics grid are now calculated without resampling.

Text channel new features

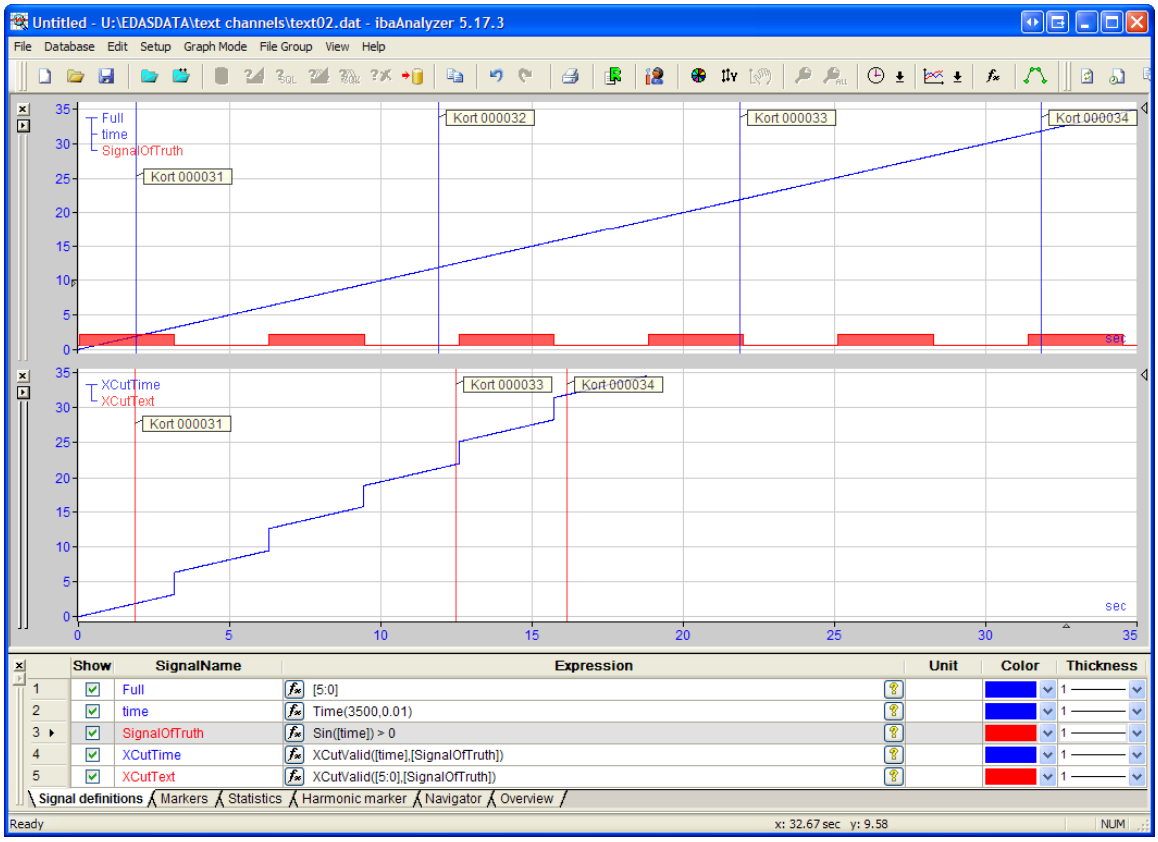
Extracting text channels to a .dat file

It is now possible to extract text channels when the selected medium is a binary .dat file.
If you have selected another medium (text file or database) any selected text channels will be ignored.
Since the profile parameters “Maximum”, “Minimum” and “Standard deviation” have no meaning for text channels, these parameters will be ignored when extracting the text channels, i.e. no aggregate channels will be present in the resulting .dat file for the text channels. The chosen mode must match the text channels base (i.e. time or length based) but whether you have selected a number of segments or an interval will be ignored, the extracted text channels will have the same timestamps as the original text channels.
The parameters “Mark valid from” and “Mark valid to” of the profile are not ignored and any text channel samples that do not fall into the range determined by these parameters will not be extracted.



X-functions applied to text channels.

The functions XMarkValid, XMarkRange, XCutValid and XCutRange can now also be applied to text channels.



Miscellaneous new features

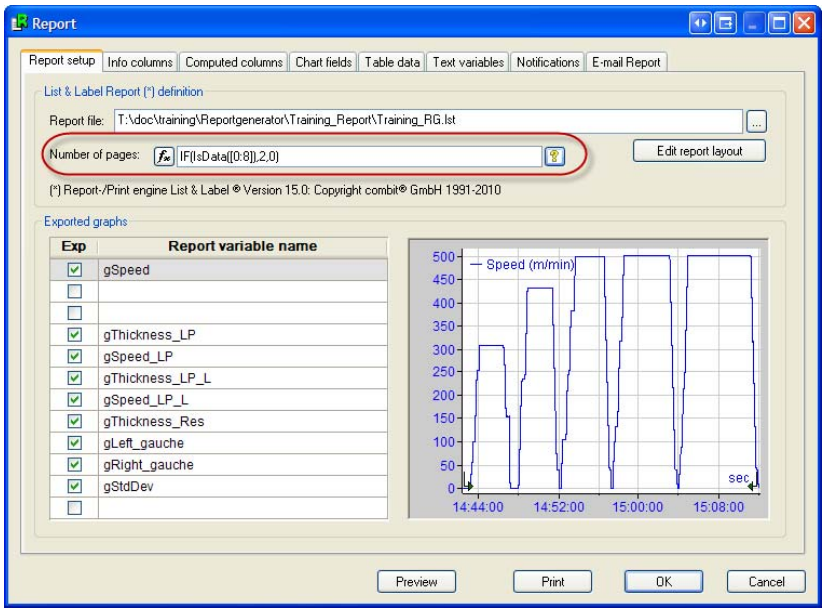
Variable pages in report

In the ibaAnalyzer report dialog you can specify the minimum number of pages to be generated. This actual number of printed pages does not exceed this number unless there is a table on the last page with more data in it than fits on one page; in this case sufficient pages are added until the table is entirely printed.
In the current version of ibaAnalyzer, this minimum number of pages can be an ibaAnalyzer expression. This allows the number of pages to be variable depending on signals in the loaded .dat file.
For example suppose one has .dat files spanning over several hours, one could in the report designer set up the graphs so that the first page shows the first hour, the second page shows the second hour, the third page the third and so on. To make sure that no pages with empty graphs would be included in the report one could use as expression:

```
Ceil(XSize([0:0])/3600)
```

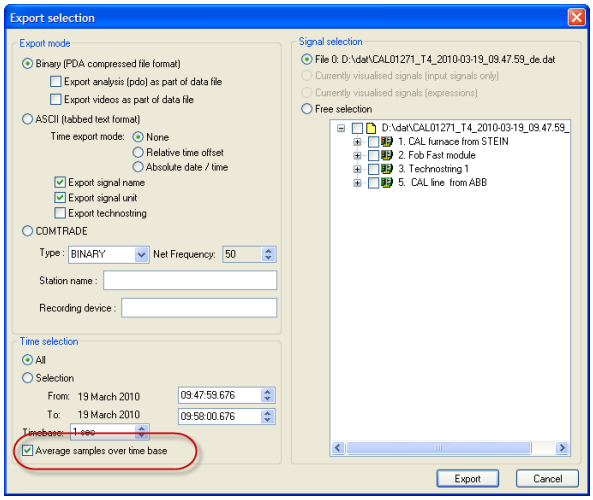
If the expression does not evaluate or evaluates to a negative number or to a number larger than 100, no report is generated and an error message is shown. If the expression does not evaluate to an integer, it is rounded to the largest integer smaller than the value.
If the expression evaluates to zero (possibly after rounding) no report is generated and no error message is shown. This can be used in an automated environment to have reports generated only when a condition is met. For example, suppose one wants to generate a three page report only when the expression “Condition” is TRUE, one could use as expression:

```
If([Condition],3,0)
```



Exporting without averaging

By default, when you export a .dat file, every signal with a timebase smaller than the timebase chosen to export the file, was resampled. The resampling was done by calculating for each new sample of the exported signal the average of the samples of the original signal that fall within the time interval between the new sample and the previous new sample of the exported signal.
When this behavior is undesirable, you now have the ability to turn of the averaging in the export dialog.



When the averaging is turned off, the sample of the original signal to the left of the sample of the new signal is taken if the linear interpolation (Setup->Miscellaneous ->Use Linear interpolation) is turned off, otherwise a linear interpolation between the sample to the left and to the right is taken.