

## Changelog ToolIP 2022:

### Plugins:

- plugin `arithmetic::Calc` add functions `rgb8()`, and `assert()`
- plugin `arithmetic::Calc` fix memory
- plugin `arithmetic::Calc`, the functions `row()` and `col()` did hang on certain empty images.
- plugin `arithmetic::Multiply` supports now MONO images
- plugin `handling::GraphOnLabel` fixing problems with graphs containing Resize from 2d to 3d
- plugin `morphology::Reconstruction` fixing crash when second image is smaller than first image
- plugin `manipulation::Resize` now sends an error when the input images are zero-sized
- plugin `manipulation::Resize`: when factors are exactly 1.0 then just copy the input data. This change makes this case faster, and the image content does not get (slightly) blurred anymore
- plugin `utility::StringManipulation` adds new parameter `start_with_separator` for starting the output string with or without separator. By default, it starts with separator.
- plugin `utility::ReplaceValue` fix when 2nd input lookup table is GREY\_32 or GREY\_F data: output was uninitialized memory, the correct replacements did not occur
- plugin `arithmetic::AssertEq` fixes crash when input is not an image
- plugin `arithmetic::AssertEq` adds verbose mode: a success message that the assertion holds. It is useful, when parsing output of test suite TLP's when a TLP contains more than one assertion
- plugin `segmentation::Otsu` fix when parameter `assume256:=FALSE` then parameter `factor` is ignored (that is, a factor of 1.0 is used)
- plugin `data::Noise` fixes invalid value INFINITY in GAUSSIAN-mode on Windows caused by any uncaught `log(0)`
- plugin `data::Noise` fixes invalid value INFINITY in EXPONENTIAL- and RAYLEIGH-mode
- plugin `matrix::RANSAC` fix crash when model graph returns a non-image or a null pointer
- plugin `utility::Statistics` fix crash on large data: >2GB on Windows, >4GB on Linux/BSD
- plugin `utility::Statistics` adds support for GREY16, GREY32, and MONO data
- plugin `arithmetic::MathConstant` adds constants for Tau

## New Plugins:

- new plugin `color::ColorMap` which can be used for colorizing images
- new plugin `sysUtils::FileExists`

## Display:

- add proper `RGB_F` image support
- in table view, for values  $< 10^{-6}$  use scientific notation
- new keyboard shortcuts `CTRL+PAGE_UP` for next slice, `CTRL+PAGE_DOWN` for previous slice, and `CTRL+COMMA` for best fitting zoom

## RAGBI:

- add support for TLP graphs with no inputs and no outputs
- `ESCAPE` key does *not* kill the *standalone* RAGBI anymore

## MAOIcmd:

- add support for `*.ascii` in command line input/output as valid suffix handled by `ReadASCII` resp. `SaveASCII`
- add support for writing RAW data `*.raw`
- add support for loading MARK files `*.mark`
- add support for loading/writing valuemap files `*.valuemap`
- add new parameter `--version`
- add support for ignoring an input port via `'_'` (SINGLE UNDERSCORE) which extends behaviour of MAOIcmd like when calling if without any inputs: any connected path connected to an unset input port is not triggered to run.
- add verboselevel API via parameter `--verbose-level [LEVEL]`
- add printing of passed parameters from command line to debug output (in certain debuglevels only)
- add simple analysis to show the top N slowest plugins
- add to super verbose mode: plugin starting timestamp and plugin stopping timestamp

## ToolIP:

- when a graph load error occurs, or when a graph could only partially loaded, then now a proper error message is printed to console and to logfile
- allow loading graph filenames with uppercase suffix `*.TLP`

- when inpin or outpin are selected (yellow), the connected edges are marked more clearly
- fix broken TLP button in parameter dialog

### **Installer :**

- add plugins from `calc.dll` and `handling.dll` into the default configuration
- fix Windows 10 issue that for TLP files the icons may not be set
- on Windows double-click on TLP file opens ToolIP empty without loading the TLP file
- add example image 'cameraman'

### **MAOI:**

- add ask-before-close option to preferences of MAOI

### **ToolImA:**

- starting ToolImA from command line did sometimes crash
- loading image per command line
- new projects have a default label, therefore, it can be started to label the images.
- fix crash after closing toolima
- set default drawing tool to rectangular shape
- add zoom toolbar widget

### **File Formats:**

- fix loading TLP files: leading/trailing whitespaces in string values got trimmed instead of being preserved
- fix loading TIFF files in CMYK color space could crash the application