

Changelog ToolIP 2020:

Plugins:

- plugin `Arithmetic::Calculator` fix range outside of `[0,255]` and non-integers for operator `==` and function `equal()`, and rounding issue of `float()`
- plugin `Arithmetic::Calculator` operator `==` and operator `!=` for integer values outside of `[-16777216,-16777216]`
- plugin `Arithmetic::Calculator` now handles `runplugin()` properly when no return value from passed plugin/graph is available
- plugin `Segmentation::Otsu` threshold for `GREY_F` and 8bit mode when no greyvalue in `[0,255]` is present returned segmentation with threshold 0 instead of hard error
- plugin `Data::PositionToValue` did return random output grayvalues on invalid parameter mode
- plugin `Data::Constant` clip fill grayvalue from parameter value to the proper grayvalue range, such that no out-of-range value is generated
- plugin `Data::Split` fix memory leak when image resizing failes
- plugin `Data::Split` returned two uninitialized result images on invalid parameter along values
- plugins `Morphology::FillHole`, `Morphology::CutHill`, and `Morphology::Reconstruction` now fully support `GREY_F` images with pixelvalues `> 255`, negative values, and preserving the fractional part
- plugins `Handling::GraphOnZone`, `Handling::GraphOnLabel`, and partially `Handling::GraphFromFile`: major review of input and output data handling of the graph, catching invalid image types and sizes, and supporting 3d data as well
- plugin `Data::Split` large image data support `>4GB`
- plugin `Manipulation::ComposeImage` large image data support `>4GB`
- plugin `Color::Combine` large image data support `>4GB`
- plugin `Data::Constant` large image data support `>4GB`
- plugin `Utility::ConvertType` large image data support `>4GB`
- plugin `Data::PixelValue` large image data support `>4GB`
- plugin `Manipulation::Pad` large image data support `>4GB`

- plugins `Handling::GraphOnLabel`, `Handling::GraphOnZone` large image data support >4GB
- plugin `Utility::Script` fix crash on string %i4.type
- plugin `Features::AveragePolar` fix crash on radii <=0

New plugins:

- new plugin `SysUtils::ReadTextFile` transferred from **MAVikit**
- new plugin `Handling::GraphOnSlice`
- new plugin `Matrix::ShuffleRows`

Plugin changes:

- all plugins in handling now support in parameters tab an "..."-button to the right of the graph loading entry to open the graph directly into a new **ToolIP** workspace
- plugins `Handling::GraphOnLabel` and `Handling::GraphOnZone` support now passing additional parameters directly to the graph to be used
- plugin `Arithmetic::Calculator` adds `transpose()` function and `.T` operator for matrix transposing, and `matrixmul()` function and `@` operator for matrix multiplication
- plugin `Segmentation::Otsu` supports now binary mask images
- plugin `Data::Split` supports now image type `MONO`
- plugin `Manipulation::Pad` supports now image types `GREY_32` and `MONO`
- plugin `Manipulation::Append` adds new parameter `upcast` such that the plugin can append images of differing types, e.g. `GREY_8` and `GREY_F`

ToolIP:

- new plugin info bubble/extended tooltip: show info when hovering mouse cursor with keys `CTRL+SHIFT` pressed over a plugin symbol
- new plugin documentation info bubble/extended tooltip: show plugin documentation when hovering mouse cursor with keys `CTRL+SHIFT` pressed over a plugins blue parameter-button
- solve parameter dialog truncation of floating point values at sixth decimal digit
- extend support of parameter tab control parameter `visible_if_rpn` to all numeric value types properly

MAOICmd:

- support loading and saving image data in GeoDict file format

RAGBI:

- support for loading image data in GeoDict file format

ToolImA:

- new tool for image annotations. This tool has a plugin mode and a stand alone mode. Some **ToolImA** features are:
- image annotation with polygon, rectangle, line, ellipse and pixels
- exporting the project into the following formats: VOC, mark, LabelMe, and VGG-Image-Annotator format
- enable to loading predefined labels
- annotating 3D images-slice
- reassign labels

File Formats:

- support for TIFF files in CMYK color space added to plugin `File::ReadImage`, **MAOICmd**, and **RAGBI**

Known Issues:

- plugin `Gauss` with `sigma < 1.0` is not symmetric