

040b73747265616d747970656481a203840163c48403737373810a0a810b0b815f5f84012584067f411b312d37OneVision-Image: Filters ± User-defined Filters

14882_TMSFilter.tiff ↗ **User-defined Filters**

This chapter briefly describes how to use the panel for defining your own filters. Please refer to the bibliographies (;../OneVision/Appendix/BibliographyEnglish.rtf;;↗) for more literature about this complex topic.

After you've selected *<User-defined Filter>* from the *<Filter Type>* pop-up list, the following controls appear:

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Figure: The portion of the Filters panel for defining own filters

The pop-up list at the top of the panel contains all current user-defined filters.

Define Filter

The command *<Define Filter>* opens a panel in which you can both create and modify your own filters.

At the top of the panel is a pull-down list containing different commands for handling filters:

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Figure: The pull-down list containing filter commands

New Filter

Creates a new filter. The size of the filter's matrix is based on the settings in the Filters panel. The filter can be named in the text field below.

Remove Filter

Deletes the current user-defined filter.

Load Filter

Opens a file selection panel from which a filter can be loaded.

Save Filter

Opens a file selection panel in which you can enter a name for saving the current filter.

Note: User-defined filters don't need to be saved manually. When closing OneVision they will be saved automatically and loaded again when you restart.

Matrix

The effects of filters are defined by matrixes that specify how a pixel should be altered. There are two ways for defining the filter matrix:

- Edit Mode: each matrix element is edited individually
- Frame Mode: marked areas are filled with the ^aValue°

$$F(x,y,a,m)$$

The value $F(x,y,a,m)$ is the evaluation of a formula you can enter in the given text field. You can use basic math operations (+, -, *, /), constants, and the variables from the brackets for the formula.

The variables have the following meanings:

a current value of the filtered pixel

m matrix size

x x-position within the matrix, ranging from $-(m/2)$ to $+(m/2)$

y y-position within the matrix, ranging from $-(m/2)$ to $+(m/2)$

When you have selected *<Frame Mode>* you will be able to drag frames within the matrix area. The matrix elements within the frame will be assigned values according to the current formula.

Example: $F(x,y,a,m)=0$

All matrix elements within the frame are set to zero.

$F(x,y,a,m)=m$

All matrix elements within the frame are set to the value of the matrix size.

Normalization Factor

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The result of a filter calculation should be normalized - divided by a value that is normally the sum of all filter matrix elements. You can enter an appropriate value in the given entry field. If the sum of the matrix elements is zero, you should set the normalization factor to 1.

Sum

This switch helps you find an appropriate value for normalization. The value displayed on the right tracks the sum of the matrix elements. If you change the value of an element, the sum will change accordingly. Clicking the *<Sum>* button transfers the sum to the normalization field. If you hold down the *Shift* key while clicking this button, it will be fixed and all changed matrix elements will not only affect the sum value but will also be directly transferred to the normalization field.

Threshold Filter

Check the *<Threshold>* option to use your new filter as a threshold filter. This kind of filter doesn't set the pixel concerned to the result of the filter calculation, but to specified foreground or background colors depending on a threshold value. The fields *<Minimum>* and *<Maximum>* let you determine a minimal and a maximal value for the threshold. If you enter $a^?^o$, the program will calculate appropriate values. The text field *<Threshold Title>* enable you to name the threshold value.

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Figure: The portion of the panel for defining threshold filters

The following controls appear in the *Filters* panel only for threshold filters:

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Figure: The controls for threshold filters

With the slider bar, you can change the threshold value within the range specified by the *<Minimum>* and *<Maximum>* fields. The title you've given the threshold value, as well as the current value (according to the slider position), are displayed in the heading. The two color well icons below let you specify the foreground and the background color to be used. If the result of the filtering of a pixel is smaller than the specified threshold value, this pixel is assigned the color of the left color well. If the result of the filtering is larger than the specified value, this pixel is assigned the color of the right color well .

Next: ;TMSFilter.rtf;FilterSelbst;↗ Filters