040b73747265616d747970656481a203840163c48403737373810a0a810b0b815f5f84012584067f411b312d37

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Pseudo-color Conversion

This tool is used for converting grayscale images to color images by assigning partial color blends to defined shades of gray.

At the top of the panel is a pop-up list containing pseudo-color lists that have already been defined. Each definition consists of one or more blends that are listed in the box below the pop-up list.

The <*Partial Blend*> and <*Pseudo-color List*> pull-down lists are used for managing blends and lists.

<*Pseudo-color List*> offers the following commands:
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<*New*> creates a new pseudo-color list containing one blend.
<*Rename*> opens a panel in which you can enter a new name for

the current list.
<*Remove*> deletes the selected list.
<*Load List*> opens a file selection panel from which you can choose a pseudo-color list.
<*Save List*> allows you to save the selected list in a file.

It is not necessary to save pseudo-color lists explicitly. When you leave OneVision, they will be saved automatically and loaded again when OneVision is restarted.

In the <*Partial Blend*> list, <*New*> adds a new blend to the blend list and selects it for editing. <*Remove*> deletes the selected blend from the list.

Two keyboard alternatives are available for blends.
- *Alt-d* duplicates the selected blend.
- *Alt-x* deletes the selected blend.

A blend entry consists of three parts:

1. Name: A default name is assigned when creating a blend entry, and this name can be changed by editing the entry field.
2. Color blend: A small image that illustrates the blend.
3. ªActiveº option: A button that specifies whether the blend will be used in the pseudo-color conversion.

Partial Blend Editor
This portion of the panel contains the controls for defining blends:
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Figure: The portion of the Pseudo-color Conversion panel containing the Partial Blend Editor

The base of the Partial Blend Editor is a grayscale chart showing all grayscales ranging from 0% to 100% brightness. You can define a section of this chart and assign it a blend by supplying four information:

Grayscale Start: Grayscale value from which the blend will start.

Grayscale End: Grayscale value at which the blend will end.

Blend Start-Color: Color with which the blend will start; that is, the one that corresponds to <*Grayscale Start*>.

Blend End-Color: Color with which the blend will end; that is, the color that corresponds to <*Grayscale End*>.

You can set the start and end value for grayscale in three different ways:
1. Enter a numerical value in the entry field.
2. Select a grayscale value with the color well icon.
3. Move the reference points in the grayscale chart. From each point, a line is drawn to indicate whether it belongs to the start or the end values. The edge points on the left and right can be used to extend the section on the left or right, respectively. The center point can be used to move the complete section.

The start and end colors of the blend can be specified using the corresponding color well icons. The transition from the first color to

the second one is automatically calculated and displayed. The figure above, for example, illustrates the replacement of the grayscale values from 33% to 64% with a color blend from white to blue.

Below the Partial Blend Editor appear two additional grayscale charts. The upper one is used only as a reference. The lower one shows all active partial blends in the selected pseudo-color list; that is, the ones with the <*Active*> option checked.

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If partial blends overlap, the blend whose entry is first in the list takes precedence. You can change the positions of entries in the list by holding down the *Ctrl* key while dragging the blends into the desired order.

In the two pop-up lists at the bottom of the panel, you can specify the representation of the grayscale values and the color model.

For grayscale values, the following settings are available:
- Percent: Range 0% to 100%
- 8 Bit: Range 0-255
- 16 Bit: Range 0-65535

The setting you make here also determines the color depth of the converted color image:
- Percent: same color depth as original grayscale image
- 8 Bit: 8-bit color image
- 16 Bit: 16-bit color image

The color model pop-up list lets you choose whether the converted color image will be in RGB or CMYK format.

Preview
This command calculates and displays the color image from the selected grayscale image. Only a copy of the original image is used. The original data remain unchanged.

Convert
Converts the original data of the selected grayscale image to a color image.

Example: A typical example of grayscale images are X-ray pictures. If you know, for example, that bones are displayed with a brightness of 20% to 30% and tumors show a brightness of 60% to 75%, it would be easy to color bones red and tumors green.
First you need to create a pseudo-color list. Click <*New*> from the <*Pseudo-color List*> pull-down list. You should rename the list to, for example, ªX-ray Pictureº using the <*Rename*> command from the same pull-down list. The created pseudo-color list contains one partial blend named ªBlend 1º. To use this blend for displaying the bones change the name by double-clicking on it and entering the new name, e.g. ªBonesº.
Now you have to set the interval of grayscale values that represent the bones. Make sure that the grayscale values are displayed in percent. Enter 20% in the entry field for <*Grayscale Start*> and 30% in the <*Grayscale End*> field. Now that the correct interval is set,

you can specify the blend colors. Open the color selection panel by clicking on the edge of the color well icons of <*Blend Start Color*> and/or <*Blend End Color*> and select the appropriate red tints.
For the tumors, create another new partial blend using the <*New*> command from the <*Partial Blend*> pull-down list. The new blend is identical to the first one and is called ªBlend 1º. (The name ªBlend 1º from the first blend doesn't exist anymore.)
Rename the blend, e.g. to ªTumorº, and set the interval for the grayscale values and the colors for the blend for displaying the tumors.
After you've finished, execute the <*Preview*> command to test your settings and make corrections if necessary. Finally, press <*Convert*> to create the final color image.

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