



DpuScan

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DpuScan 6.x

Online Help Color Recognition PlugIn
Reference Manual

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Actuality

It may happen that a more recent version of this manual for DpuScan is available for download from the Internet. Therefore, it is recommended that you should compare the version by means of the date printed on this page with the version on the Internet. You should please use the most up-to-date version of the manual. The actual version of this First Steps Manual is found on the Web at the following address:

https://www.dpuscan.com/pdf/en_manual/DpuScan-Reference-Manual.pdf

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1 Color Recognition Plugin - Overview

Color detection is the ability of the Plugin to distinguish color documents from documents with only black and white contents. Depending on the color rate, the documents will be classified to bitonal or color. The process of the classification can be adjusted by a learning process and other parameters. The main intention of this process is to distinguish between photo images and images with normal scriptures. Color detection offers a filtering mechanism. This filtering can suppress a limited number of color hues. A continuously colored background with almost black printing on it can be classified as 'black & white' while a multicolored photograph is still detected as 'color image'.

The second functionality of the Plugin is the recognition of marker colors. Again a learning process can be performed with documents holding a marker color. The Plugin recognizes this color and stores it for later use. In a subsequent scanprocess, documents with the same color are recognized and indexed. Thus images with this property can perform document separation or something else. Up to three marker colors can be recognized by the Plugin.

The following links refer to the settings of this Plugin, available in the dialog of the Plugin.

[Color Recognition](#)
[Marker Recognition](#)

1.1 Tabsheet color recognition

Use this tabsheet for the settings of the color recognition, applicable to for the classification of the document in color or bitonal image.

Front	Switches on the color recognition for the front side. All settings on the left side of the dialog have effect.
Back	Switches on the color recognition for the back side. All settings on the right side of the dialog have effect, if the option use front side settings is switched off. Otherwise the settings on the left side are used.
Use front side settings	Enabling this checkbox the front side settings are used. This checkbox is only enabled, if front side settings are switched on, otherwise disabled.
Area	Pressing the button next to the editfield, a dialog opens, to set the parameters for the search area of the color recognition. The settings can be made in percent, tenth of millimeter or thousandth of an inch. Closing the additional dialog with OK stores the settings in the editfield. The contents of the editfield can only be changed in the additional dialog.
Weight	Sets a limit of saturation to distinguish those colors to be ignored from those colors to be considered during color detection. A higher value requires a higher saturation for a color of being classified as 'color'.
Additional colors	After filtering the remaining colors with enough saturation are counted. If the number of different colors is larger than the pre-set threshold, then the image will be classified 'color'.
Tolerance	If after filtering the remaining total color part of the filtered image is larger than 'color threshold', the image will be classified 'color'. Images will be more likely detected and classified 'color' by 'color

	threshold' if there are few different colors with almost even saturations.
Filter options	<p>A filter can be used to affect the decision of images to be color or bitonal. Filters are created in a learning mode. To do it, switch the filter options to learn and create a new filter by pressing add filter.</p> <p>A filter is used to train the color recognition to special documents. In a learning phase typical documents are scanned, which should be bitonal. The color parts of this documents are filtered out. If a filter is used, images with more colors than defined in the filter are color images. Images with the same colors as in the filter are bitonal.</p> <p>The option use no filter does not use a filter for the color detection.</p> <p>The option use filter uses the currently selected filter, created in a previous learning process.</p>
Add filter	Creates a new empty filter. Selecting learn in the filter options the filter parameters are created depending on the colors in the scanned documents. Please use typical documents, that should be classified as bitonal, though it has special recurrent colors. Using this filter, the recognized colors are ignored. Documents with this colors are classified to bitonal.
Delete filter	Deletes the currently selected filter from harddisk.
Scan phase	<p>In the scan phase the scanned images are classified to color or bitonal due to the parameters made in this dialog. The result is stored in a variable %(I.ColRecInfo) It can have the following values:</p> <p>0: unknown color format</p> <p>1: bitonal image</p> <p>2: color image</p>
OK	Closes the dialog and saves all settings.
Cancel	Closes the dialog without saving.
Help	Opens this help screen.
See also overview	

1.2 Tabsheet marker recognition

Use this tabsheet for the settings of the marker recognition. Markers are colors of a marker pencil. The Plugin can handle up to three colors of markers. It learns the colors of the markers in a learning phase. In the scan phase, documents with this marker colors are indexed. A variable returns the result of the marker search. For example this information can be used for document separation.

Use front side settings	Enabling this checkbox the front side settings are used. This checkbox is only enabled, if front side settings are switched on at least for one marker, otherwise it's disabled.
Area	Pressing the button next to the editfield, a dialog opens, to set the parameters for the search area of the marker recognition. The settings can be made in percent, tenth of millimeter or thousandth of an inch.

Closing the additional dialog with OK stores the settings in the editfield. The contents of the editfield can only be changed in the additional dialog.

Marker 1-3

Switched on the marker search for the appropriate front or back side. The checkbox is only enabled, if a previous learning process is performed. A color cannot be changed manually. A learning process is mandatory.

Learn

To learn a color, this button should be pressed. A dialog opens to load a document with the mark color. Pay attention, that no further color is in the document but the mark color. The PlugIn recognized the most significant color. This color is displayed for control.

Scan phase

In the scan phase a document can contain all learned colors. The PlugIn returns the result of the search in three variables: **% (I.Marker1Info)[0,1]**, **% (I.Marker2Info)[0,2]** and **% (I.Marker3Info)[0,3]** indicates the colors 1, 2 or 3. A 0 means, the color is not in the document. Because of compatibility to the scanner driver the recognized colors are returned by 1, 2 or 3, though **% (I.Marker2Info)** is only used for color 2 and a return value of 1 in this variable would be a distinct value, too. But this PlugIn returns always a 2 for color 2, a 1 is only for color 1.

There are two more variables with a similar information. **% (I.MarkersInfo)** returns the information of the previous three variables in one value. For example a 103 means **% (I.Marker1Info)** is 1, **% (I.Marker3Info)** is 3 and **% (I.Marker2Info)** is not found. A further variable returns a ranking of the three colors:

% (I.MarkerLevel) indicates the highest saturation color. A value of 310 means the color 3 has a higher saturation than color 1. Color 2 is not found. Pay attention that the most significant value is always left in this variable. Colors, that are not found are always right. A 300 indicates, that only color 3 is found.

Reset

Deletes all learned marker colors.

OK

Closes the dialog and saves all settings.

Cancel

Closes the dialog without saving.

Help

Opens this help screen.

See also [overview](#)

1.3 Learning Mode

In the learning mode the PlugIn gets typical scan documents to train colors. The main reason is to classify documents with typical colors as bitonal. In this mode documents which should be bitonal, are scanned consciously. Typical documents as invoices or forms with similar colors should be distinguished from other documents. The PlugIn fills a color table in this learning mode with recognized colors. Please use only documents including exclusive the colors which should be filtered in a later scan process.

See also [overview](#)