



DpuScan

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DpuScan 6.x

PlugIn Pixtools 2D

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 Overview

With the Plugin Pixtools 2D you can evaluate two-dimensional barcodes. You can define some parameters, which will be explained below.

It uses the PixTools program libraries for recognition. We deliver and install these libraries together with the scan program by default. A later installation is possible at any time if they are missing.

Requirements for using the Plugin

The Plugin can be used in all licensed versions of DpuScan from version 5.01. No additional license is required for this Plugin.

How the Plugin works

The Plugin is called when scanning papers or batch-wise reading of documents. After the image data has been captured it carries out a barcode search. The results are saved in variables that can be used by DpuScan for control or output.

In the interactive mode, i.e. the pause after scanning in which the images are displayed, the Plugin can be used specifically on a single image.

Various configuration steps are required to use the Plugin:

[Configuration in Base Profile](#)

[Configuration of the Plugin](#)

[Configuration in the Task profile](#)

[Configuration as a command](#)

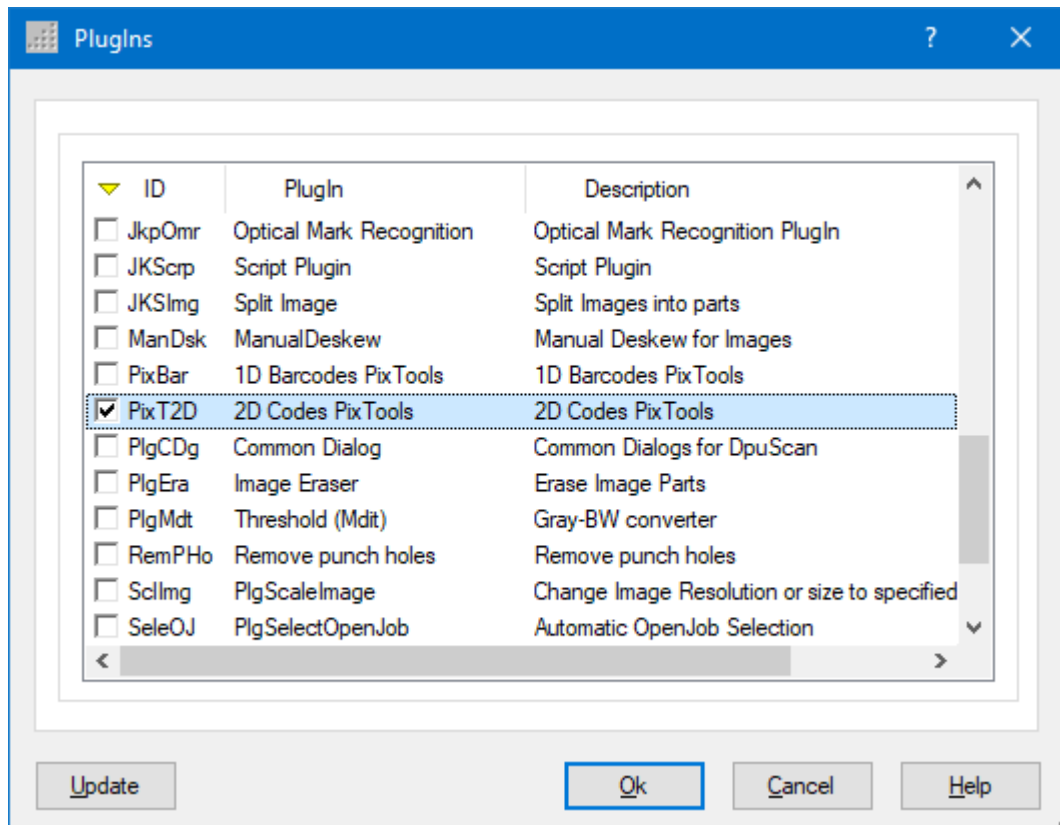
[Views and return values](#)

[Summary](#)

1.1 Configuration in Base Profile

The PlugIn has to be loaded and configured within the basic profile. To do this, open the **base profile configuration**, select the **Process** tab and click the **PlugIns** button.

The Add button takes you to the selection of the available PlugIns.

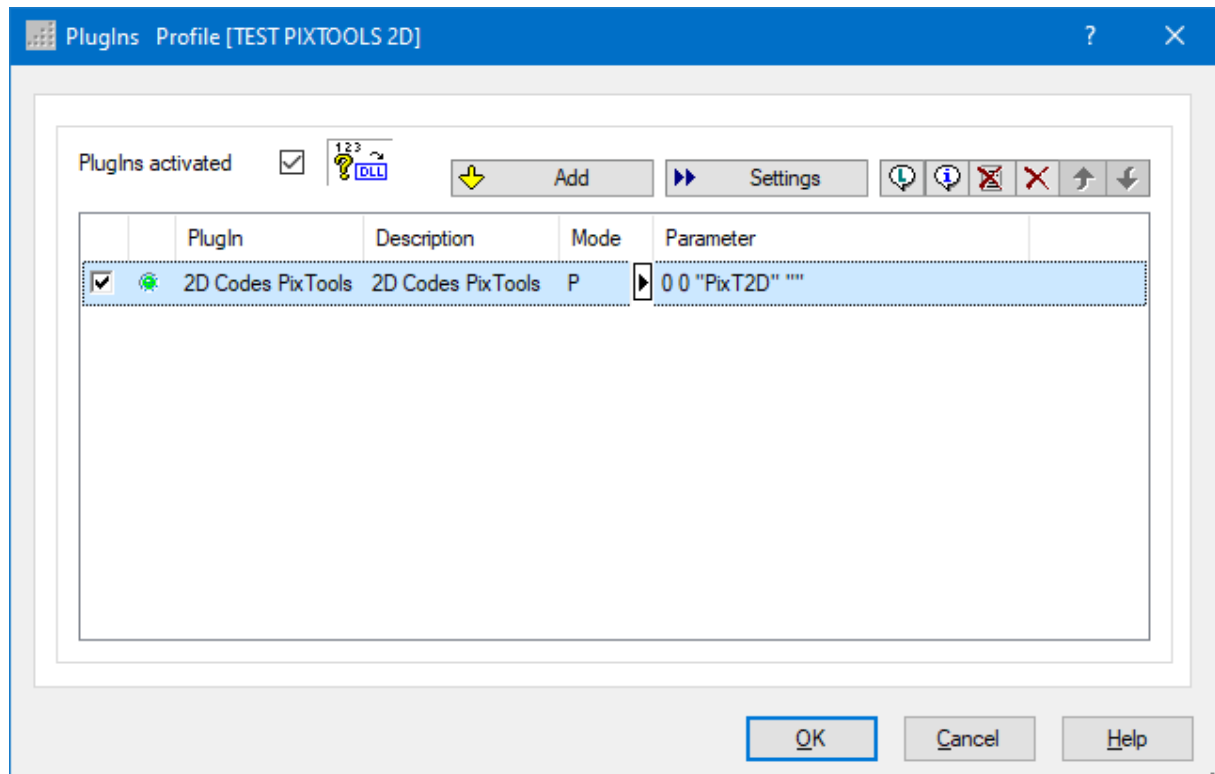


Select the Plugin

Select the "2D Codes PixTools" Plugin. The Plugin will be loaded for use within this base profile.

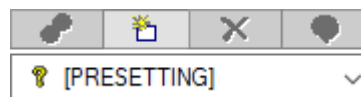
Please make sure that the check box "PlugIns activated" is checked, otherwise the plugins will not be used. The check box can only be activated if at least one Plugin has been loaded.

The green point in the list of loaded PlugIns indicates that the Plugin is ready for use. The entry in the "Mode" column shows the string P. This means that this Plugin works in process mode.



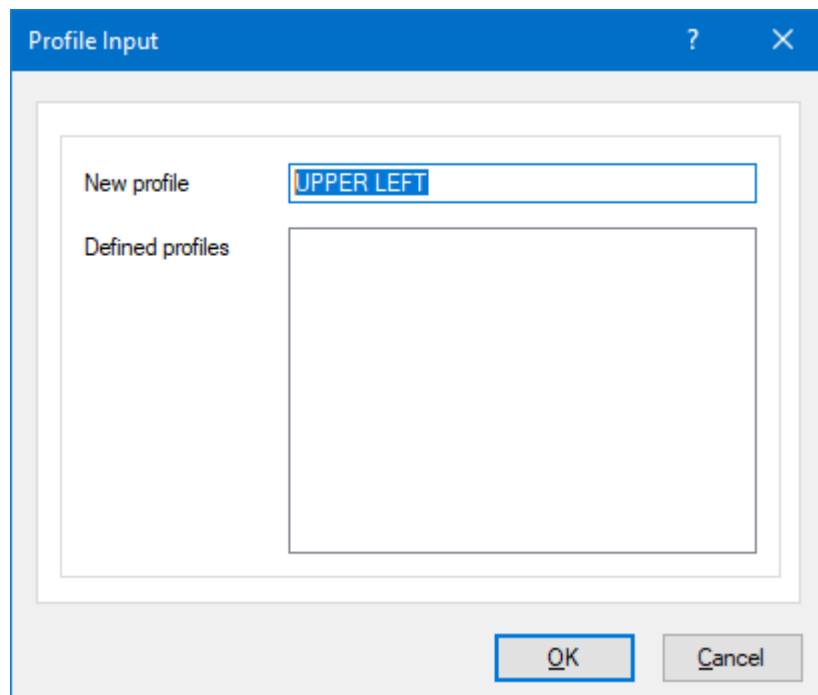
List of the Plugins loaded

Now create a configuration by double-clicking in the cell for the "Parameter" column. The dialog for calling the Plugin as a broker event or when changing selection opens. In the middle are a number of buttons there:



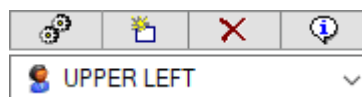
Creating a new Profile

The only button available is the New button; use it to create a new sub-profile. You will be asked to enter a name for the configuration to be created:



Naming a new Profile

After creating the new profile, the other buttons will become active.

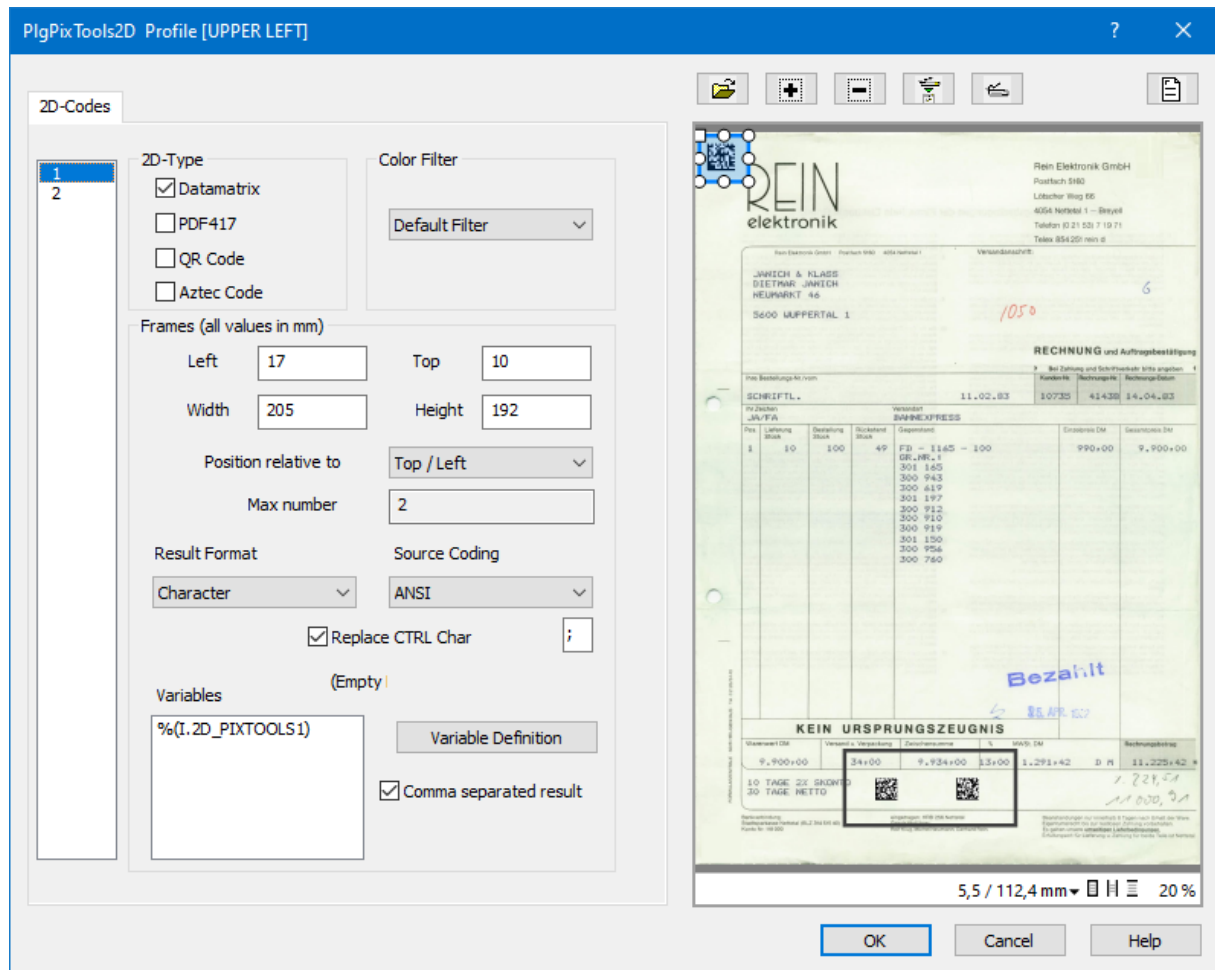


Managing profiles

Click the Change button with the cogs. A separate dialog is available for the actual [configuration of the Plugin](#). After you have made the settings there, you can leave all open dialogs with OK.

1.2 Configuration of the Plugin

Now set the parameters for the search. The configuration dialog for the Plugin is split and shows a preview on the right. On the left are the controls for setting the search parameters.



Configuration of the Plugin

(This is the picture is composed, not all controls are always visible at the same time)

Preview Window

In order to test the set parameters files are displayed in this window. The image section can be moved by holding and dragging the left mouse button. The view can be enlarged or reduced with the mouse wheel. The right mouse button has no function here.

The window accepts files that are dragged onto it with the mouse. Image files are displayed, other files are ignored.

Please note that only pure image files can be displayed; files with mixed content, e.g. searchable PDF, cannot be displayed.






When searching on the whole image, you can specify how the results should be separated on return. If one or more frames (search areas) are specified, one or more variables can be assigned to each frame.

Above the preview window there are some buttons:



File open

Loads a file from the hard drive and displays the image in the window. All common image formats can be loaded, such as Jpeg, Tiff, Bmp images.

	Add frame	Creates a frame on the image. Position and size of the frame can be changed later.
	remove frame	Removes the frame selected currently.
	Scan	Gets an image from the scanner
	Scanner settings	Opens the setup dialog for the scanner
	Test	Starts a search for 2D-Barcodes. If a frame is selected only the results for this will be shown. If a frame is selected only the results for this one will be shown.

Search parameter


The settings for the search can then be made on the left:

List of the frames

Displays all frames defined in this configuration. Clicking on the corresponding entry in this list field activates the frame and displays its search parameters.

2D TYPE

Choose the 2D-Barcode types to search for:

Datamatrix	
PDF417	
QR-Code	
AZTEC	

Color Filter

If a color or grayscale image is loaded or scanned, it must be converted into a black and white image for the search process. Specify here whether the normal standard filter should be used or a special filter for images with barcodes.

Left / Top

An entry in this input field changes the left / upper position of the currently active frame.

The change takes effect immediately and is displayed in the preview window.

Width / Height

An entry in this input field changes the width or height of the currently active frame.

The change takes effect immediately and is displayed in the

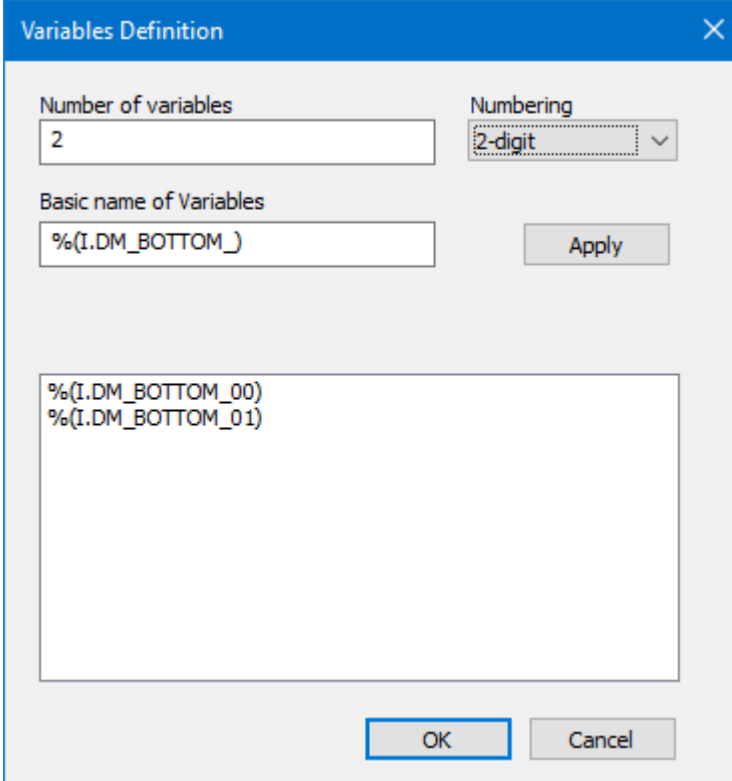
	preview window.
Position relative to	The position of the frame can relate to one of the four corners of the image. This corner can be defined here.
Max. Number	This field shows how many variables (%-Codes) are assigned to this search area. This assignment can be made in a separate dialog .
Result Format	<p>It can happen that the found text contains control characters that cannot be displayed. This is the case, for example, with address codes from the Deutsche Post. To simplify the evaluation of the text, it can be returned as a sequence of ASCII values. The values are two-digit hexadecimal and are simply placed one after the other, i.e. without spaces or decoration.</p> <p>For example, "494e564f494345" corresponds to the word "INVOICE".</p>
Source Coding	Here you can specify in which coding the texts are expected in the search result, ANSI, UTF-8, ... In the English-speaking area, ANSI should be sufficient, in other regions "automatic" should be selected.
Replce CTRL Char.	If this option is activated, control characters are replaced by the specified character. If the field is empty, the control characters are simply removed.
Variables	All variables (%-Codes) belonging to the current frame will be listed here.
Variablen Definition	Opens the dialog for assigning the search results to the program variables (% codes).
Comma separated result	<p>If no frames are specified, this option has no effect; all search results are always returned, separated by commas.</p> <p>If frames were given and several codes are found in one frame, the following applies:</p> <ul style="list-style-type: none">• If this option is activated, the codes are returned separated by commas.• If this option is switched off, only the first code found is returned.
At the bottom there are the usual buttons:	
OK	Closes the dialog box and saves all search parameters.
Cancel	Drops all changes and leaves the dialog box.
Help	Opens the help file for PlugIn Pixtools 2D.

1.2.1 Variables Definition

In order to evaluate the found text or to output it later, it must be saved in a variable, % -Code.

In the simplest case there is a code on a page. A name can then be assigned to this. The suggested variable % (I.2D_PIXTOOL) or a "descriptive name" such as % (I.DevSheet) or % (I.DocType) can be used for this. Please only use variables with the image scope, i.e. % (I.xxxx)

If there are several codes in a search area, you can number them consecutively:

The image shows a 'Variables Definition' dialog box. It has a blue title bar with a close button. Inside, there are three main sections: 'Number of variables' with a text box containing '2'; 'Numbering' with a dropdown menu showing '2-digit'; and 'Basic name of Variables' with a text box containing '%(I.DM_BOTTOM_)'. To the right of the basic name is an 'Apply' button. Below these is a large text area showing the generated variables: '%(I.DM_BOTTOM_00)' and '%(I.DM_BOTTOM_01)'. At the bottom are 'OK' and 'Cancel' buttons.

Variables Definition

First define a base name to which the number should be appended. Then state how many digits you need and how many codes there should be at most. Then click Apply, the list of variables will be generated automatically.

If the search is successful, the PixTools-Library then fills these variables. In addition for every 2D-Barcode found, the library also gives where it found it and what type it is. For that there are variables with the endings _POS and _TYPE.

Number of variables

Maximum number of 2D-Barcodes expected in this search area.

Numbering

Enter here how many leading zeros should be used to fill the number part of the name.

Basic name der Variables

Name of the variable in the format % (**x** . **yyy**) where:

x indicates the scope of the variable.

Preferred default is "I" for (I) mage.

Possible are also (F) ile, (D) irectory, (J) ob, (T) ask, (C) lass (= basic profile) and (A) pplication,

yyy can be a sequence of lowercase and uppercase letters, numbers, and underscores.

Enter an underscore as the last character if the numbers should be separated when numbering, e.g.% (I.Label_)

Note that the scan program does not differentiate between upper and lower case.

Apply

Generates the required number of variable names.

List field

List of the variable names created.

At the bottom there are the usual buttons:

OK

Closes the dialog box and saves all search parameters.

Cancel

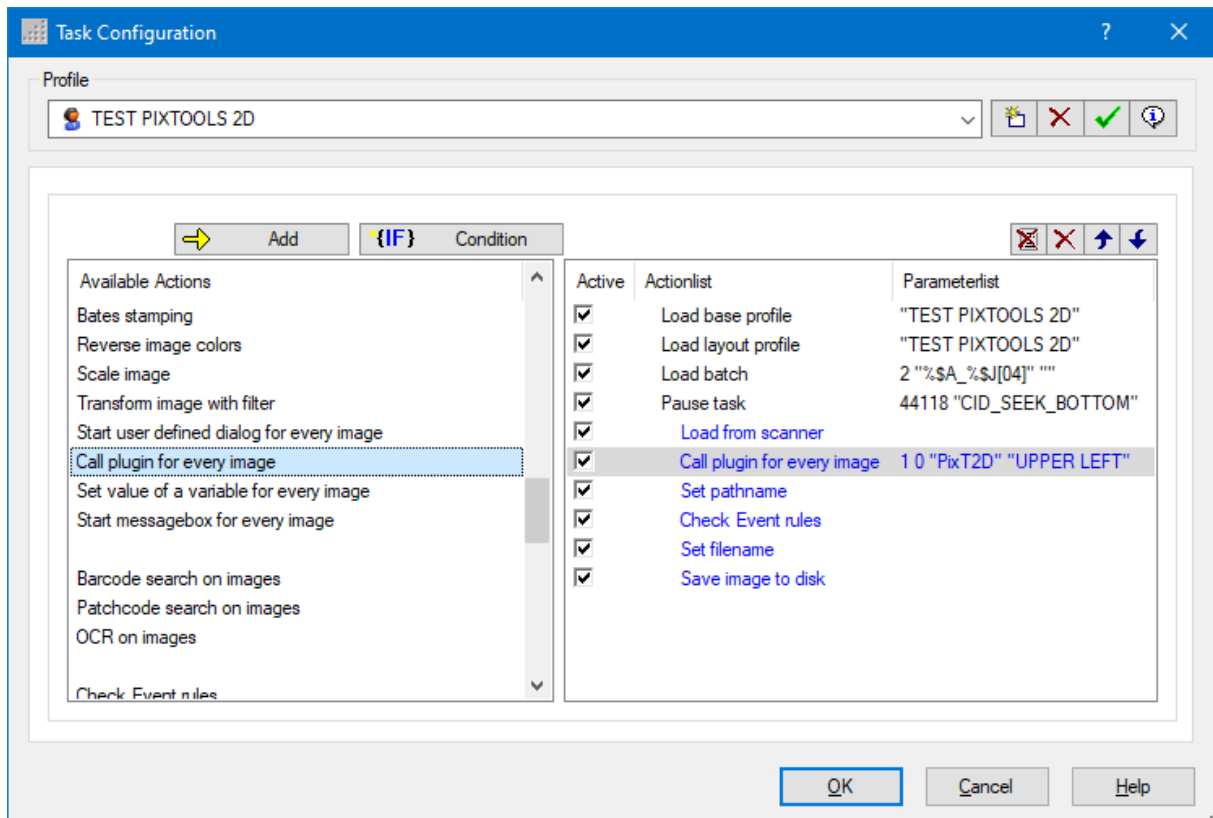
Drops all changes and leaves the dialog box.

Help

Opens the help file for PlugIn Pixtools 2D.

1.3 Configuration at Task Profile

In the task profile, i.e. in the list of work instructions, the PlugIn can be inserted with the step "Call PlugIn for each picture". Make sure that this step takes place *after* the image has been captured, here "Load from scanner". If you need the search result to control the process, it must be inserted *before* "Check event rules".



Call of the PlugIn at the Task

Since this PlugIn works with images, you have to specify which images are to be used:

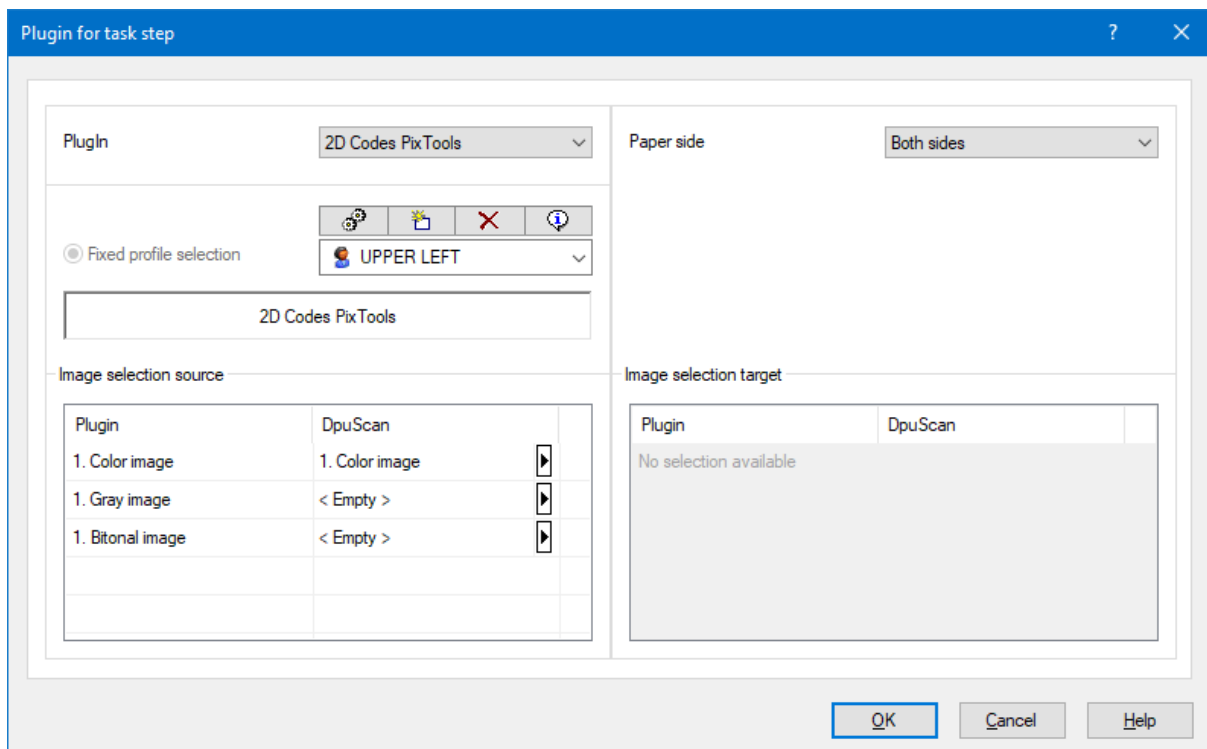


Image Selection for Task Step

In the dialog at the bottom left the images are assigned. The Plugin can only process one color, gray or black and white image per call. Enter on the DpuScan side which image is to be transferred. Enter the image types that the scanner delivers, in the example this is only the color image.

The number of the image *does not* indicate the position in the batch, but the position within a group of images. In most cases the first picture must be used.

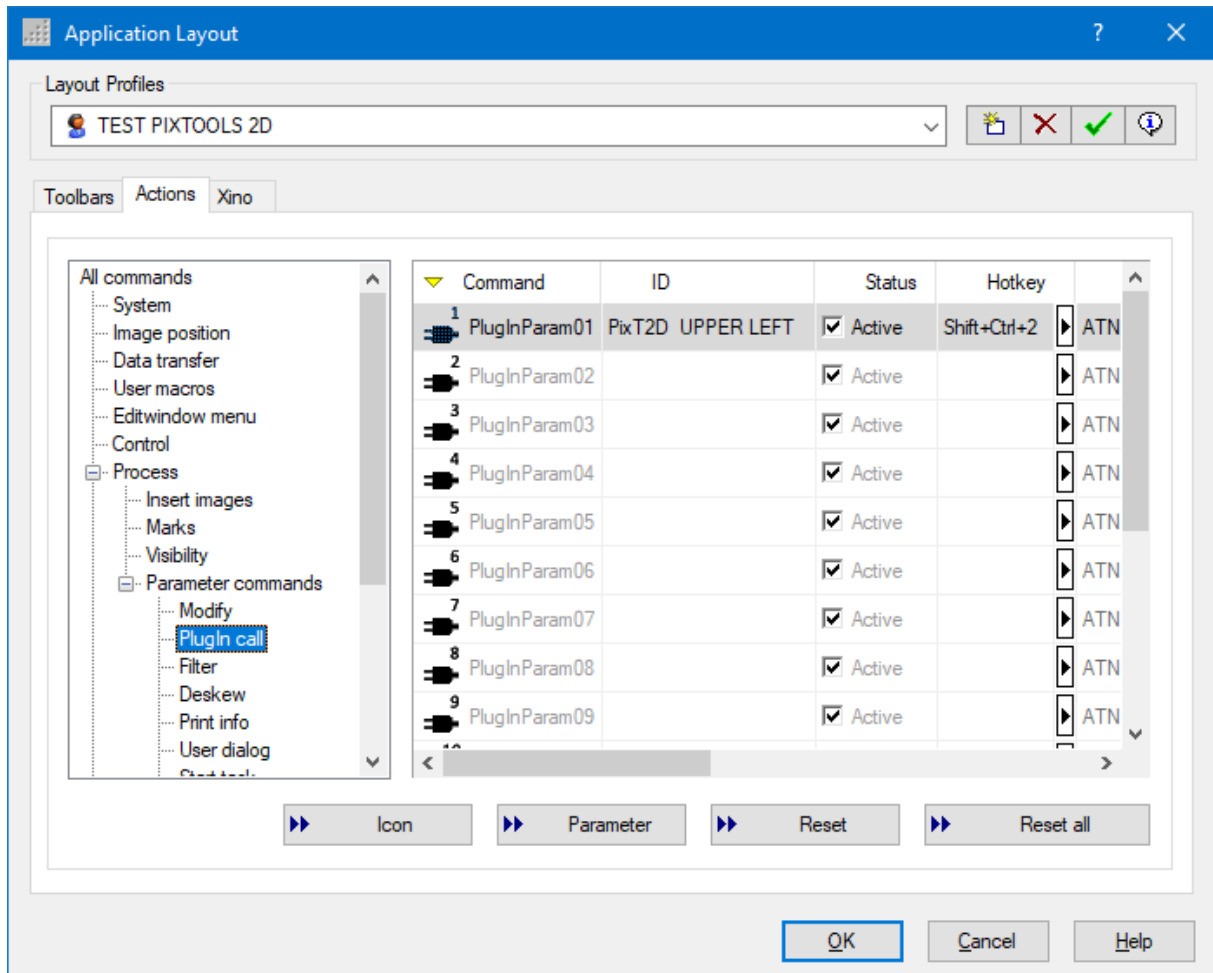
Most recognition programs work with black and white images. If the scanner delivers color images and black and white images, you should choose the black and white image as a "bitonal image" for recognition.

At the top right of the dialog you can restrict the search to the front if you do not want to search on the rear side

1.4 Configuration as a Command

The PlugIn can also be applied specifically to a selected image. To do this, open the application display and go to "Toolbars". Make sure that at least one other toolbar is available in addition to the menu bar.

Then scroll through "Actions" and assign a new **button**. To do this in, the tree view on the left select the branch "Edit" -> "Parameter commands" -> "PlugIn call":



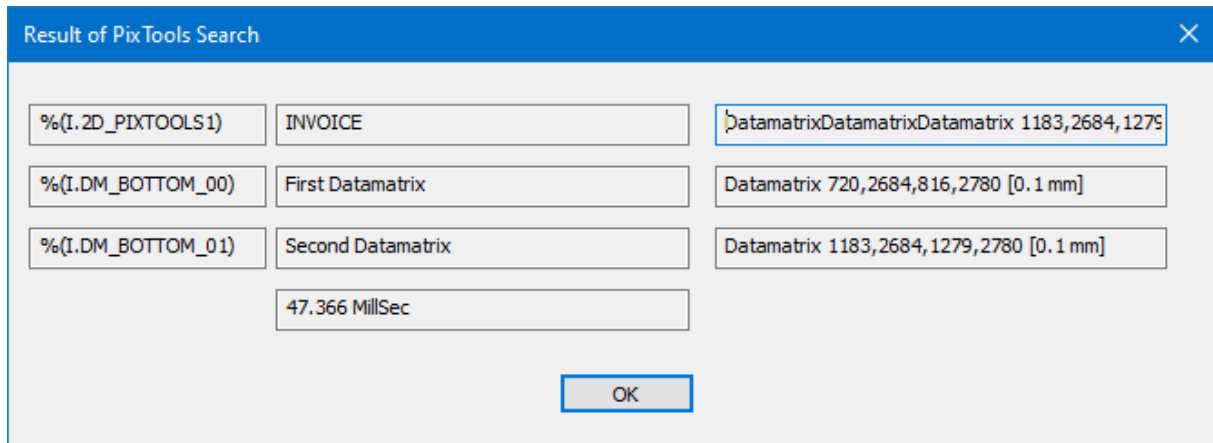
PlugInCall as Parameter Command

A click on parameters or a double click on the "Command" column opens the [familiar dialog](#) for selecting the PlugIn, the sub-profile and the images to be transferred. After specifying these values, you can assign a symbol image, a keyboard shortcut and various labels. Then you can place the button on the toolbar. If this button is then pressed, or the shortcut entered, the PlugIn is called and the [search results](#) are updated.

If the search is to be carried out as a **macro**, i.e. as part of a sequence of instructions, select "User macros" in the tree and insert the PlugIn call as a command. In the same macro you can, for example, set a marker that states that the batch should be rebuilt before finalization.

1.5 Return Values and Windows

The PlugIn does not display own windows. Only the search results will be shown at configuration time:



Displaying the Results

These [variables](#) will be returned

- %(I . 2D_PIXTOOLS *n*)** All 2D-Codes found in frame *n*. The preceding part of the name "2D_PIXTOOLS" can be changed. *n*=1,.2,3,...
Only if no frames were specified, *n*=0 will be used.
- %(I . 2D_PIXTOOLS *n* _BARPOS)** Position of all 2D-Barcodes searched for in frame *n*.
A position contains four values: Left, top, right and bottom, separated by blanks. The values are given in 0.1 mm always.
- %(I . 2D_PIXTOOLS *n* _TYPE)** Types of all 2D-Barcodes found in frame *n*.

1.6 Summary

Name of the Plugins	PlgPixTools2D
Description	Erkennt 2D-Barcodes with the PixTools-Engine
Revision	4/26/2022
DpuScan	Version 6.01 and higher
PlugIn Dateien	PlgPixTools2D.dll, PlgPixTools2D_09.lng
Additional Engine	PixTools 2D Barcodes
Chargeable	No
Can be used as task step	Yes
Can be used as macro command	Yes
Can show a window	No
Reacts on broker events	No
Reacts on selection changes	No

Input variables

none

Ausgangsvariablen

%(I . 2D_PIXTOOLS *n*) All 2D-Codes found in frame *n*. The preceding part of the name "2D_PIXTOOLS" can be changed. *n*=1,.2,3,...

Only if no frames were specified, *n*=0 will be used.

%(I . 2D_PIXTOOLS *n* _BARPOS) Position of all 2D-Barcodes searched for in frame *n*.

A position contains four values: Left, top, right and bottom, separated by blanks. The values are given in 0.1 mm always.

%(I . 2D_PIXTOOLS *n* _TYPE) Types of all 2D-Barcodes found in frame *n*.

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