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Janich & Klass



PlugIn for DpuScan Edge Enhancement

Supplement to the DpuScan 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 use the most up-to-date version of the manual.

The Internet version of this annex to the DpuScan Reference Manual is found on the Web at the following address:

<http://www.jkimaging.com/pdf/PlugIns/EdgeEnhancement.pdf>

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October 23, 2006

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Plugins for DpuScan provide expansion of its functionality and must be licensed separately.

This documentation describes one such additional module for already existing licenses of DpuScan. The use of this PlugIn is only possible in combination with DpuScan. Therefore, this documentation should also be used together with the documentation for DpuScan.

1 Overview

Although the image quality of scanners has constantly improved during the past years, it still often happens that the image is unsharp. In order to enhance the optical impression and also to optimize the image quality for further processing step, Edge Enhancement is utilized. In order to efficiently utilize this process, Edge Enhancement is processed on the color image.

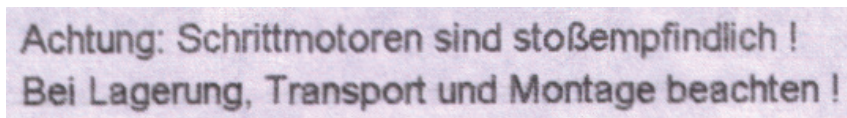


Illustration 1 – Without Edge Enhancement

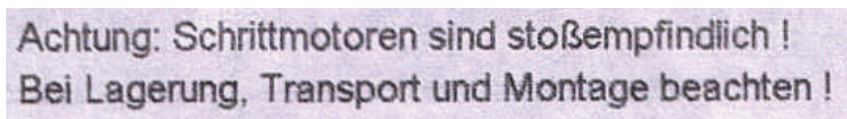


Illustration 2 – Weak Edge Enhancement

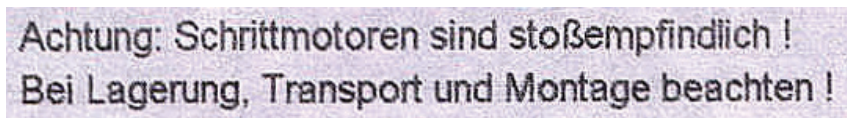


Illustration 3 – Sharp Edge Enhancement

Despite its lack of sharpness, the color image contains much information that can still be used by the sharpening algorithm to create an optimized Black & White image. The bitonal images that were created from the enhanced color image often have, for example, better properties for an OCR application such that the error rate is reduced. On Black & White images that were obtained from an unsharpened source image, you can often see that some letters are not closed. So, for example, the e is often read as c by an OCR application.

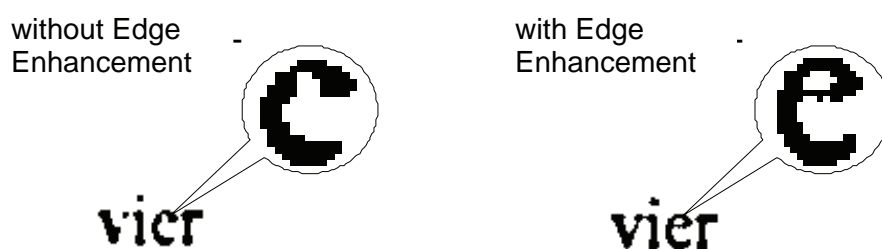


Illustration 4 – Differences when Creating B&W Images

The above illustration shows, on the left side, an e that was interpreted as c by the OCR, due to its lack of sharpness. When, however, sharpening is used, the bow will be closed and the base form of the initial e can be recognized. The OCR will interpret this letter as e. The Plugin allows Edge Enhancement with different sets of parameters. No additional image is created, but the delivered image is replaced by the filtered image, in the scan application.

2 The PlugIn in the Task Definition

For use in process mode, you first must get the images, for example by the Task step "Load from scanner" or "Load from directory", and then add the Task step "Call PlugIn for every image". This step is available only if the PlugIn is loaded in the relevant Class .

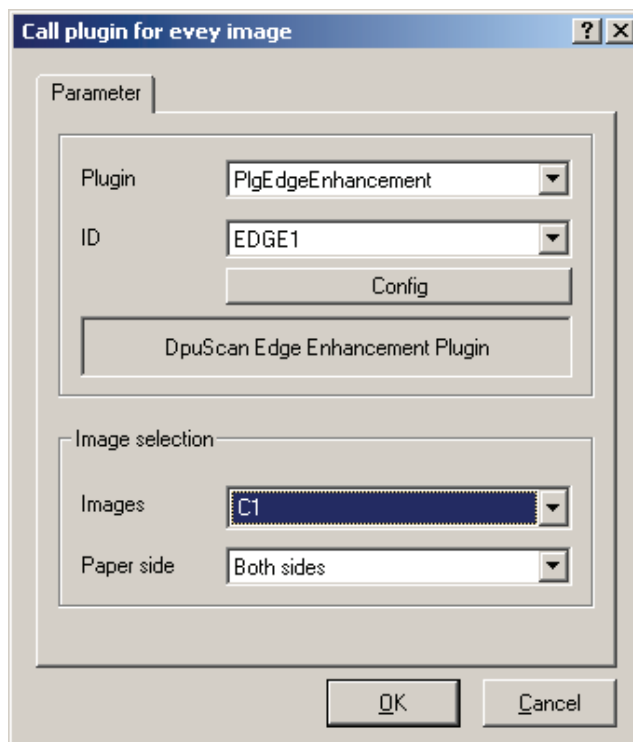


Illustration 5 – PlugIn Call in the Task

This Task step is available only if the PlugIn has been loaded for the actual Class the PlugIn.

You configure the Task step by selecting from the dropdown lists the PlugIn **PlgEdgeEnhancement**, the configuration which you made before, and the color format / image and the sides to be processed (Front side, Back side, Both sides).

A color image is required as evaluation base.

3 The Plugin in the Class Definition

The Plugin must be loaded and configured within the Class. Open the **Class configuration**, select the **Process** page, and click the **Plugins** button.

Now, click the **Add** button to select the available Plugins.

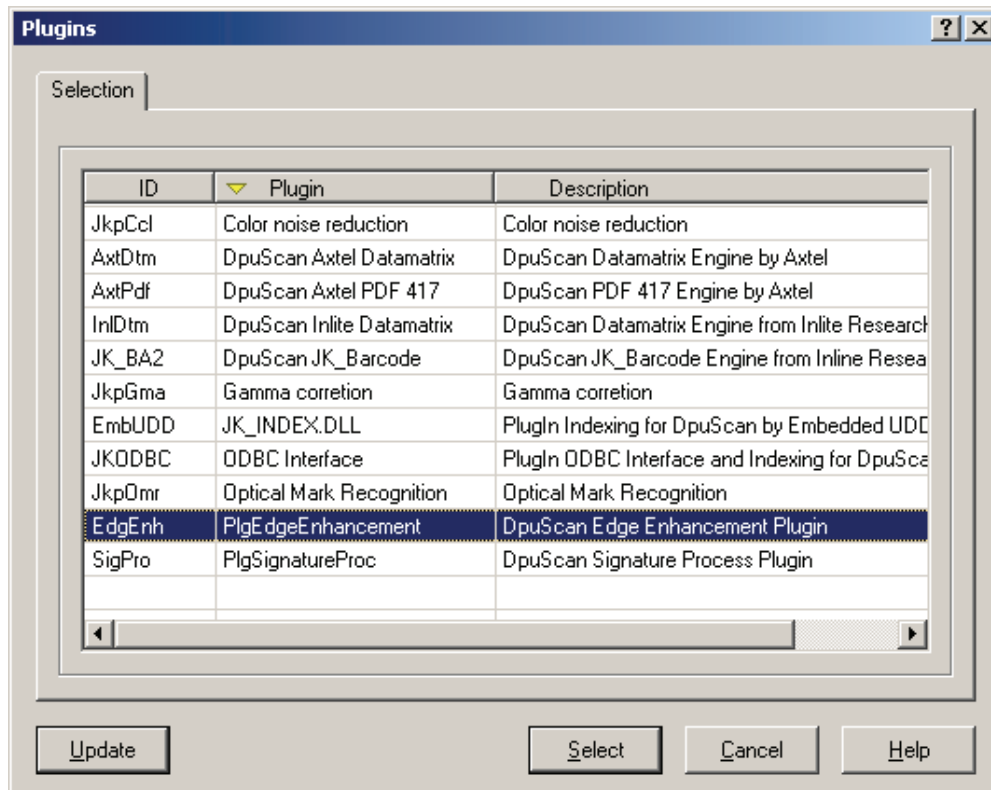


Illustration 6 – Selecting the Plugin

Now select the **EdgEnh** Plugin by highlighting the corresponding line and clicking the **Select** button.

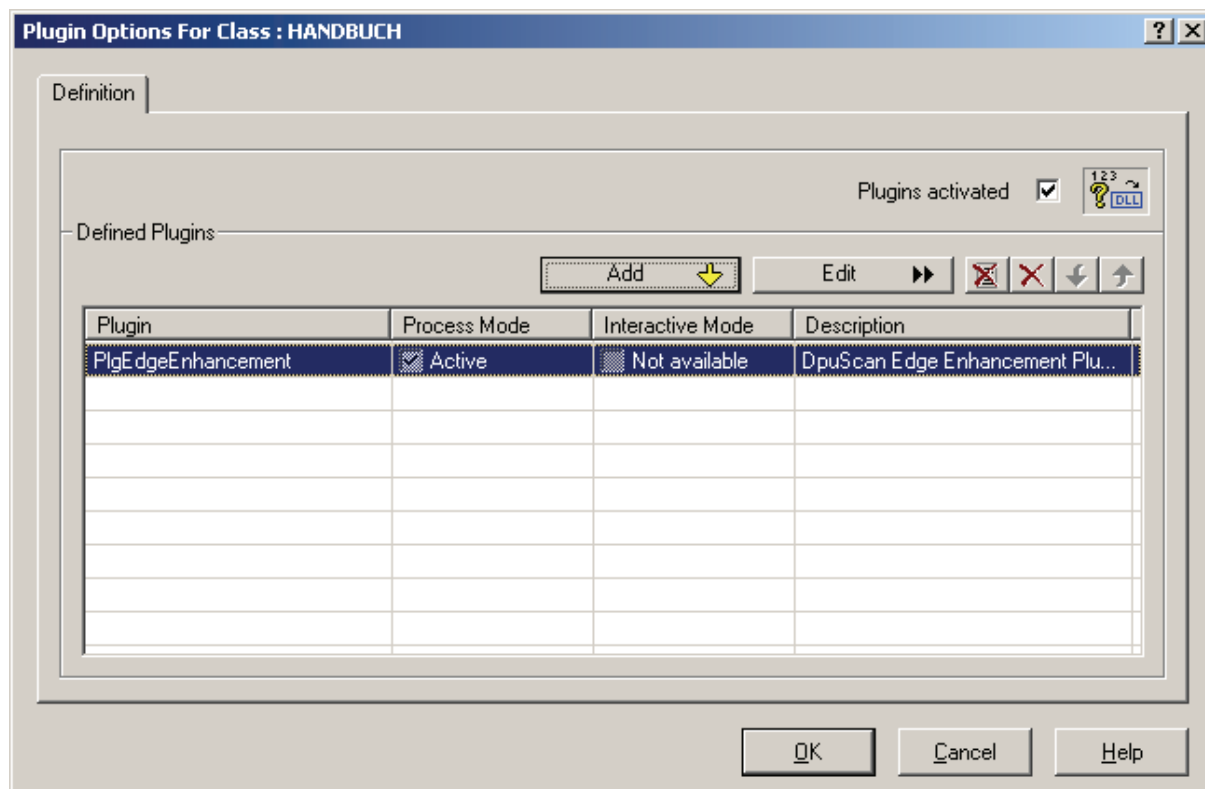


Illustration 7 – Plugin Configuration for the Class

The Plugin is now loaded for use in the Class.

Please note that the "Plugins activated" checkbox must be ticked otherwise the Plugins will not be used.

In the above illustration, the check box above the **Process Mode** column is ticked. This means that this Plugin is used in Process Mode, during the scanning process.

Please refer Chapter [6 Utilization during Post-Processing](#) on page [16](#) for using it in Interactive Mode.

3.1 Configuration of the PlugIn

Double-click on the list line to open the PlugIn configuration – refer to [Illustration 11 – PlugIn Configuration](#) on page 9. At the top are the control elements for administering different PlugIn configurations.



Selects an existing configuration and assigns it to this Class.



Defines a new configuration. The settings from the actual configuration are copied.

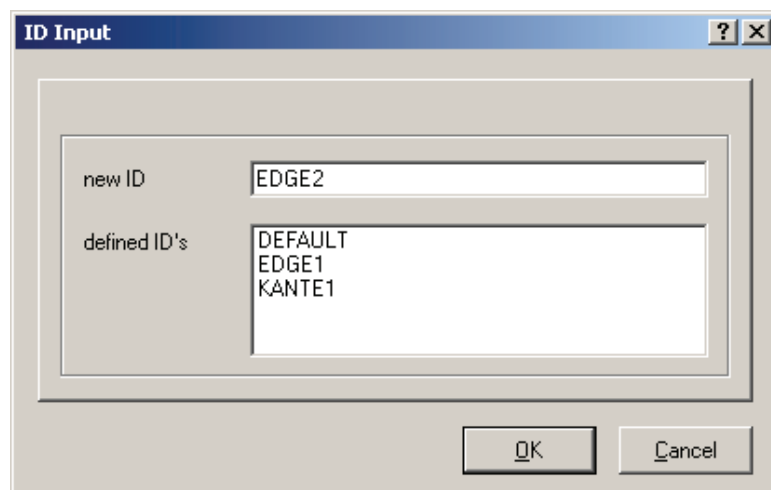


Illustration 8 – Defining a New ID



Deletes the actual configuration. A warning message will be given:

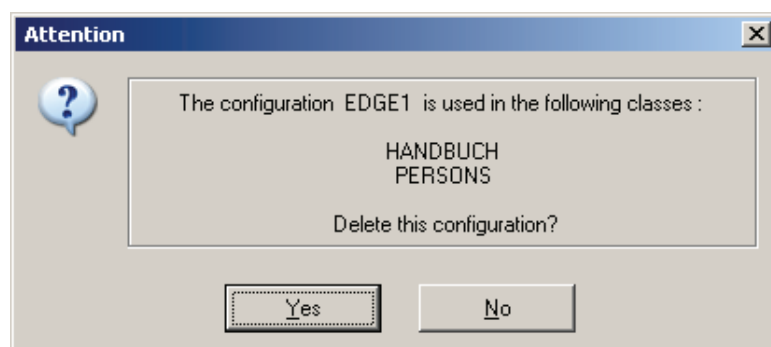


Illustration 9 – Warning before Deletion



Applies the modifications to the configuration. You will be asked whether the changes should be saved:



Opens a dialog that displays in which Classes the actual configuration is also used.

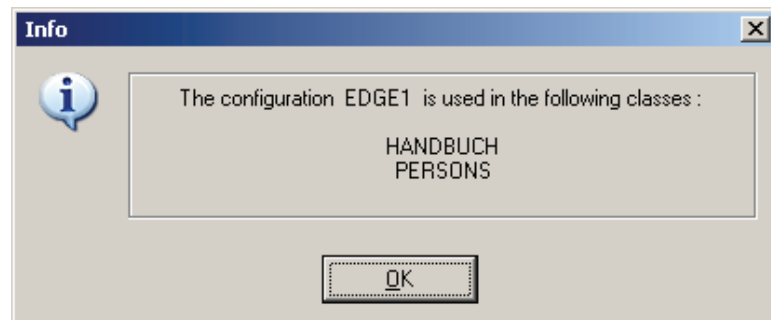


Illustration 10 – Information about Usage of the ID

The remaining area contains three property pages **General**, **Percent Code** and **Information**.

3.1.1 Property Page: General

The **General** page shows detailed information about the Plugin, in this case about its version and its producer.

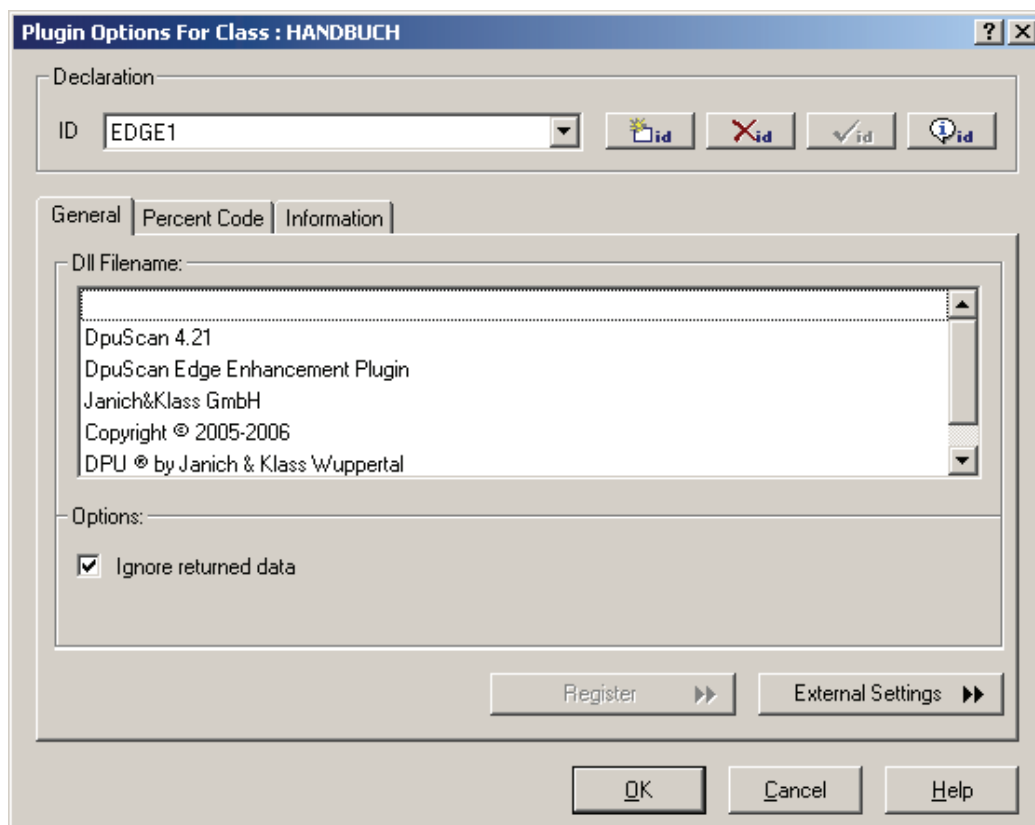


Illustration 11 – Plugin Configuration: General

Ignore returned data	The variables are not returned to DpuScan if this checkbox is activated.
Register	Opens the dialog for entering the registration key, see below.
External setting	Opens the dialog for the PlugIn configuration, see Chapter 4 Configuration for Edge Enhancement on page 13 .

Before its first usage, the PlugIn must be registered once. Please click the Register button and enter the key in the following dialog, in order to unlock the PlugIn for Edge Enhancement.

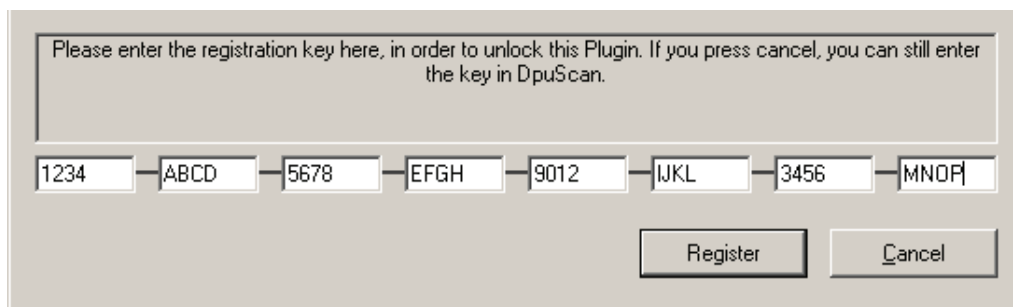
A registration dialog box with a light gray background. At the top, a text box contains the instruction: "Please enter the registration key here, in order to unlock this Plugin. If you press cancel, you can still enter the key in DpuScan." Below this, there are eight small input fields arranged horizontally, each containing a character: "1234", "ABCD", "5678", "EFGH", "9012", "IJKL", "3456", and "MNOP". At the bottom right of the dialog are two buttons: "Register" and "Cancel".

Illustration 12 – Registration Dialog

With DpuScan Gold and DpuScan QSI, this registration is not necessary since the Edge Enhancement PlugIn belongs to the scope of supply and will be automatically released by the dongle.

As Edge Enhancement is used on color images, the PlugIn is not available for the bitonal-only versions of DpuScan.

3.1.2 Property Page: Percent Code

Usually, the **Percent Code** page lists the variables which the PlugIn uses or which are defined within the configuration.

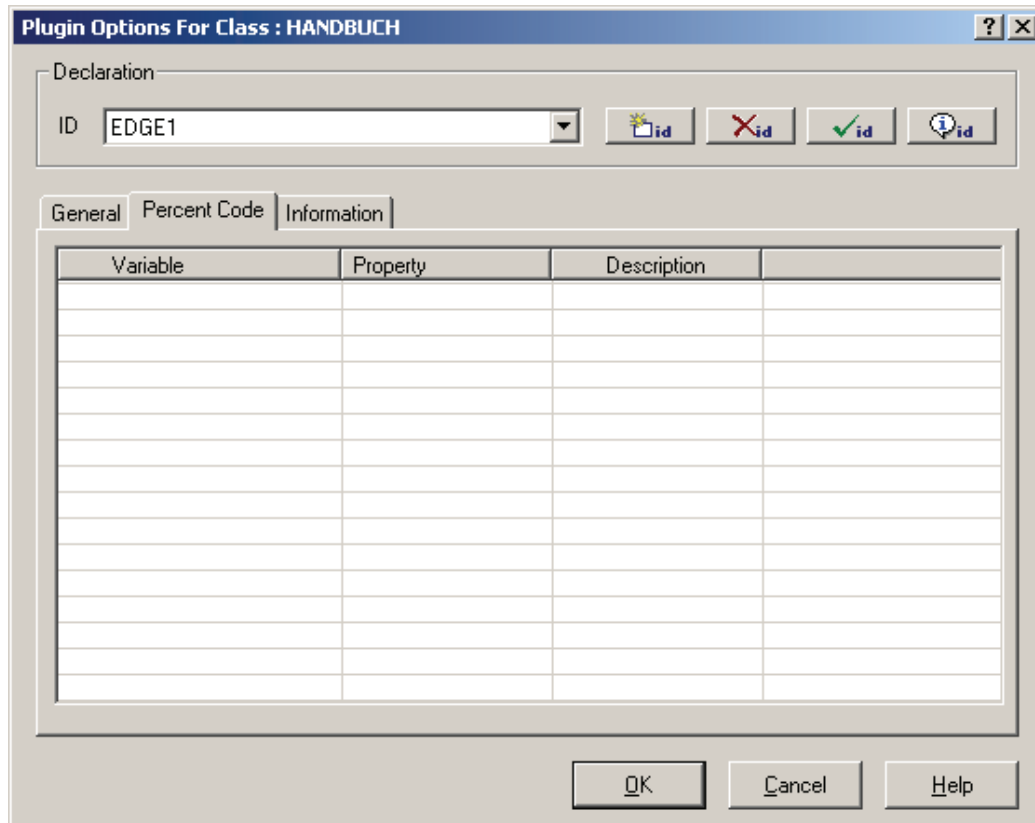


Illustration 13 – List of Variables

As the Edge Enhancement PlugIn uses no such variables, this list is always empty.

3.1.3 Property Page: Information

This page offers, in a tree view, information about the name of the PlugIn, its producer and its version. The ID branch lists the windows, images and variables which PlugIns use. The Edge Enhancement PlugIn however uses no windows or variables. The delivered image is processed and returned to the calling scan application.

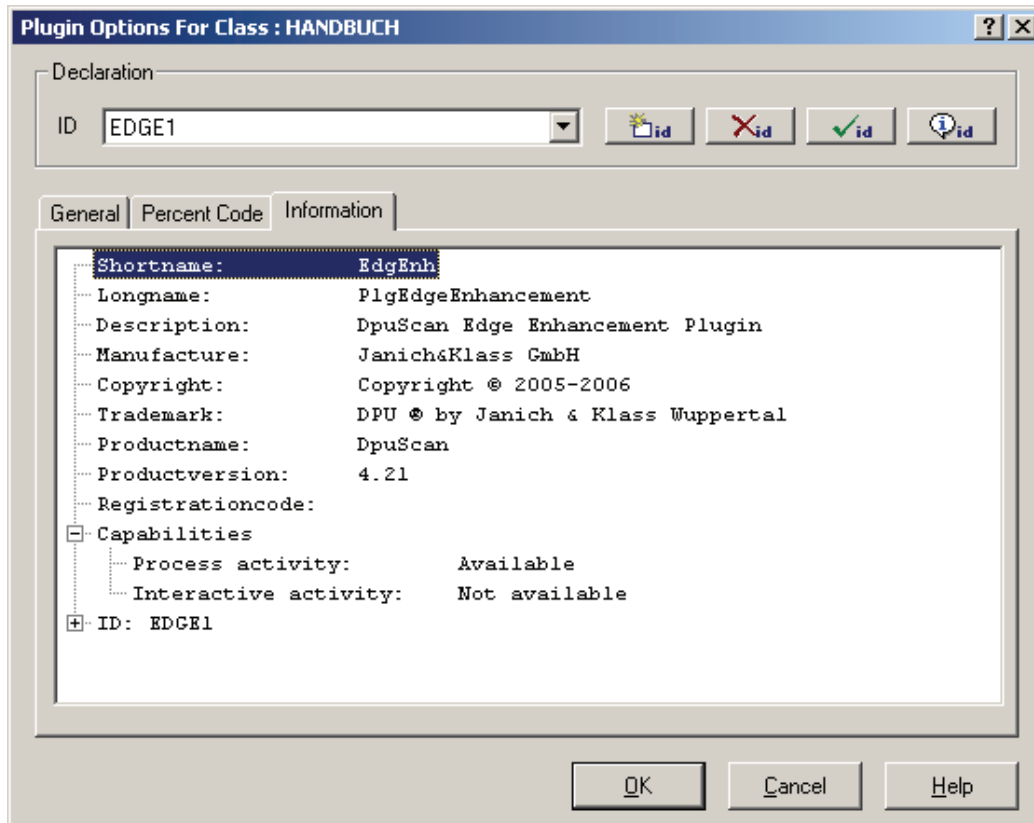


Illustration 14 – Register Information

4 Configuration for Edge Enhancement

When you are on the **General** page and click the **External settings** button, the dialog opens for configuration of Edge Enhancement.

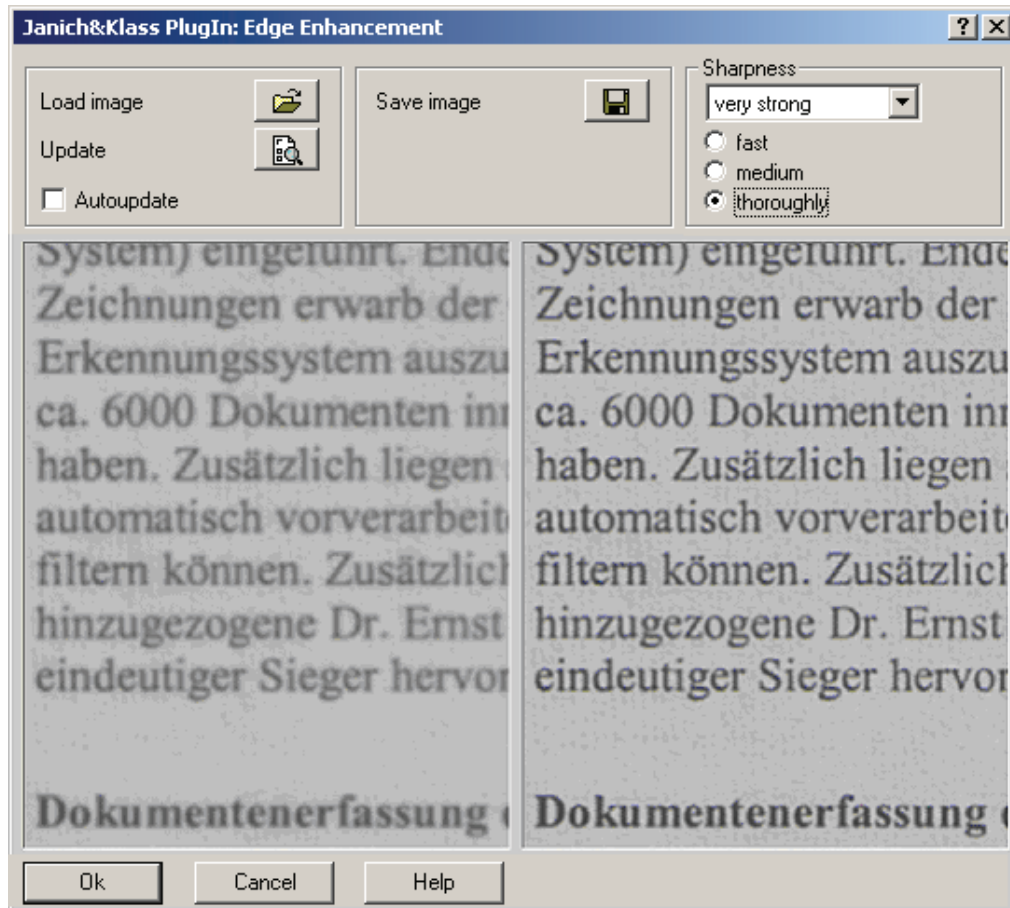


Illustration 15 – Setting Dialog for Edge Enhancement

It shows, in its top area, the operating elements for loading the source image and for saving the filtered image. Also the setting elements for the Edge Enhancement can be found here.



Opens the dialog for loading an image.



Executes another filtering with the actual parameters and displays the results in the right-hand preview pane. Not available if Autoupdate is selected

Autoupdate

When the filter settings are modified, the loaded image will immediately be calculated with the new settings and displayed in the right-hand preview pane.



Opens a dialog for saving the filtered image.

Sharpness**Dropdown list**

The dropdown list offers already pre-set filters; you may select from four different steps for enhancement.

Option fields

The option fields allow you to influence the working method of the filter for optimizing its processing speed and the image quality.

The panes underneath the control elements display the images: The left-hand one shows the image as loaded from the hard disk while the right-hand one displays the filtered image. For best comparison, the displayed image section is always the same in both windows.

You can enlarge the representation when you click into one of the preview windows with your left mouse button. Click with the right mouse button reduces the image. You can move the image by holding your right mouse button down.

5 How to Utilize Edge Enhancement in the Task

Here we describe an example configuration, step by step.

First, you must scan several example documents that you want to process, and save them to disk.

Open the configuration for the Class where you want to use the Edge Enhancement PlugIn. Select the **Process** page and click the **Plugins** button.

Activate the **Plugins activated** check box. Click the **Add** button and select the **PlgEdgeEnhancement** PlugIn.

Click the **Edit** button, or double-click the newly added line to reach the configuration dialog for the Plugins. You must register the PlugIn unless it is included in the version of DpuScan that you are using.

Use the  button to create a new Edge Enhancement configuration and enter its name.

Then click the **External Settings** button to start the definition of the settings.

First you must load one of the images saved before. To do so, click the  button.

Make your settings and check the results in the preview window. Modify the settings until you obtain the optimal processed image. You may eventually load further images for checking your setup.

Now you switch over to the Task configuration. Add the step **Call PlugIn for every image** after the step **Load from scanner**. Configure the call by opening it with a double click. Select the **PlgEdgeEnhancement** PlugIn and the configuration that you just defined. Then determine the image where Edge Enhancement shall be executed. Confirm the settings you made with a click on the **OK** button.

The PlugIn is now configured for usage in this Task.

6 Utilization during Post-Processing

As soon as an OpenJob is in Pause mode, its images can individually be processed.. The factory setting offers no buttons for the usage of PlugIns; they must be assigned in the **Application Layout | Actions**.

In the following example, a button will be added for the PlugIn configuration "EdgeSharpening1".

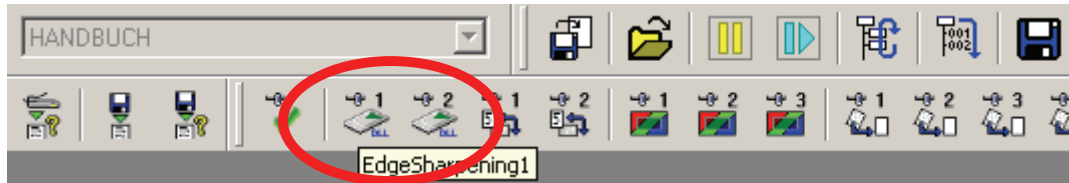
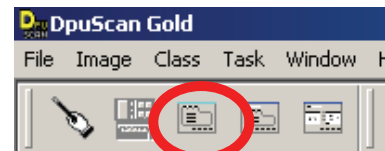


Illustration 16 – PlugIn Call in the "Process images" Toolbar

Now the actual active image can be corrected with this configuration.

The factory setting of DpuScan does not yet offer any such buttons in its "Process images" toolbar. Up to nine different PlugIn configurations can be executed in the toolbar, either completely different PlugIns, or different sets of parameters for the same PlugIn, or any mixture of these options.

In the main menu, click the button for the Application Layout to reach the dialog for its setup:



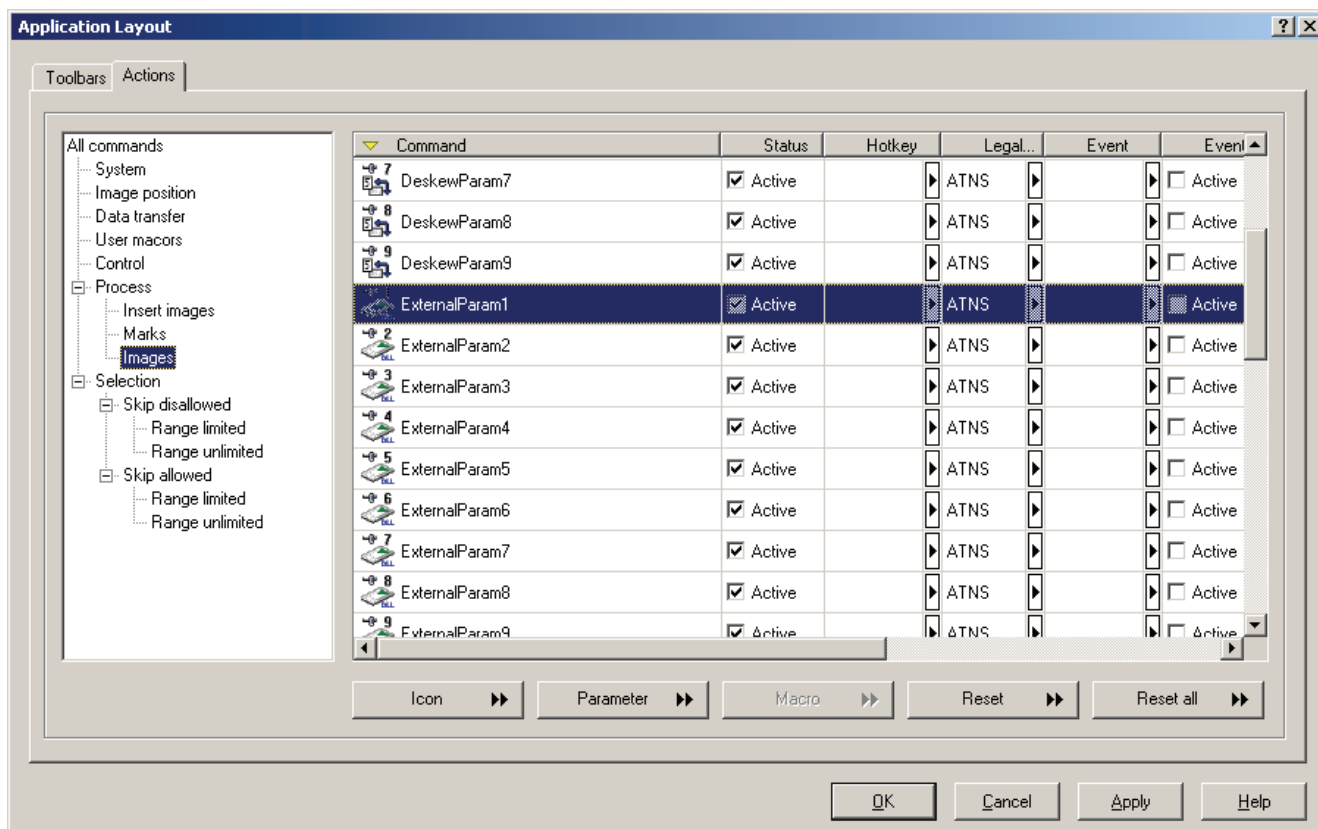


Illustration 17 – Insert PlugIn Button in the "Process image " Toolbar

The first button will be assigned with the configuration "EdgeSharpening1" – please read details about defining such configurations in [Chapter 4 Configuration for Edge Enhancement](#) starting from page [13](#). For now, we assume that this configuration already exist; therefore can be selected. Next click **Parameter**:

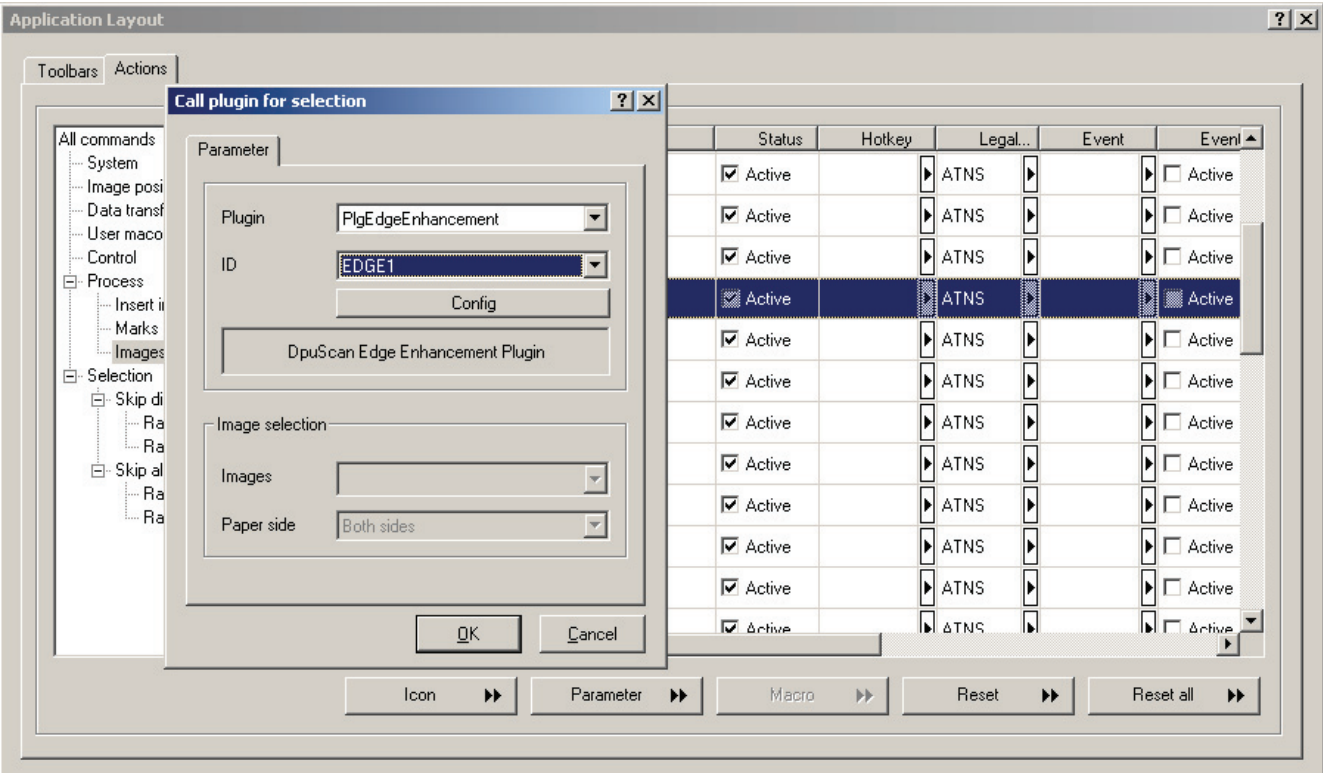


Illustration 18 – PlugIn Button in the "Process images " Toolbar, Assign Parameters

You may also select an **Icon** instead of the usual button for the PlugIn:

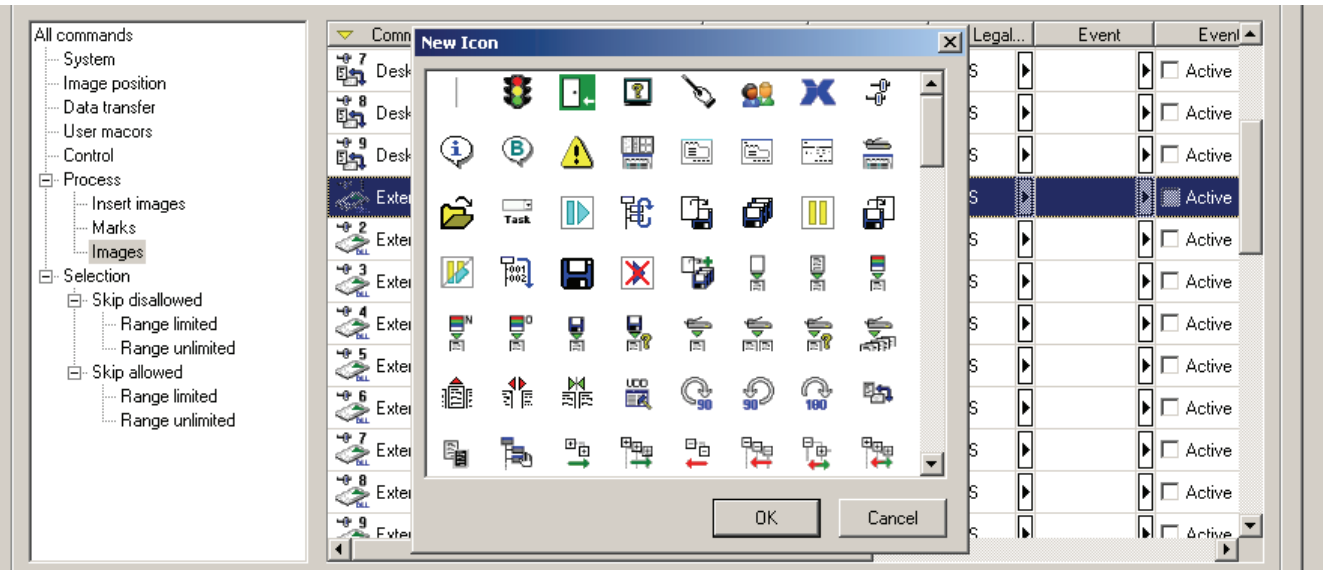


Illustration 19 – PlugIn Button in the "Process images " Toolbar, Assign Icon

Such an icon can probably better be memorized than a button. In any case, the button for executing the PlugIn can be assigned an explanatory text that will display, as per setup, immediately with the button - or in its place (Button Text), that will appear in the Status line (Status Text), or when you touch the button with your mouse (ToolTip).

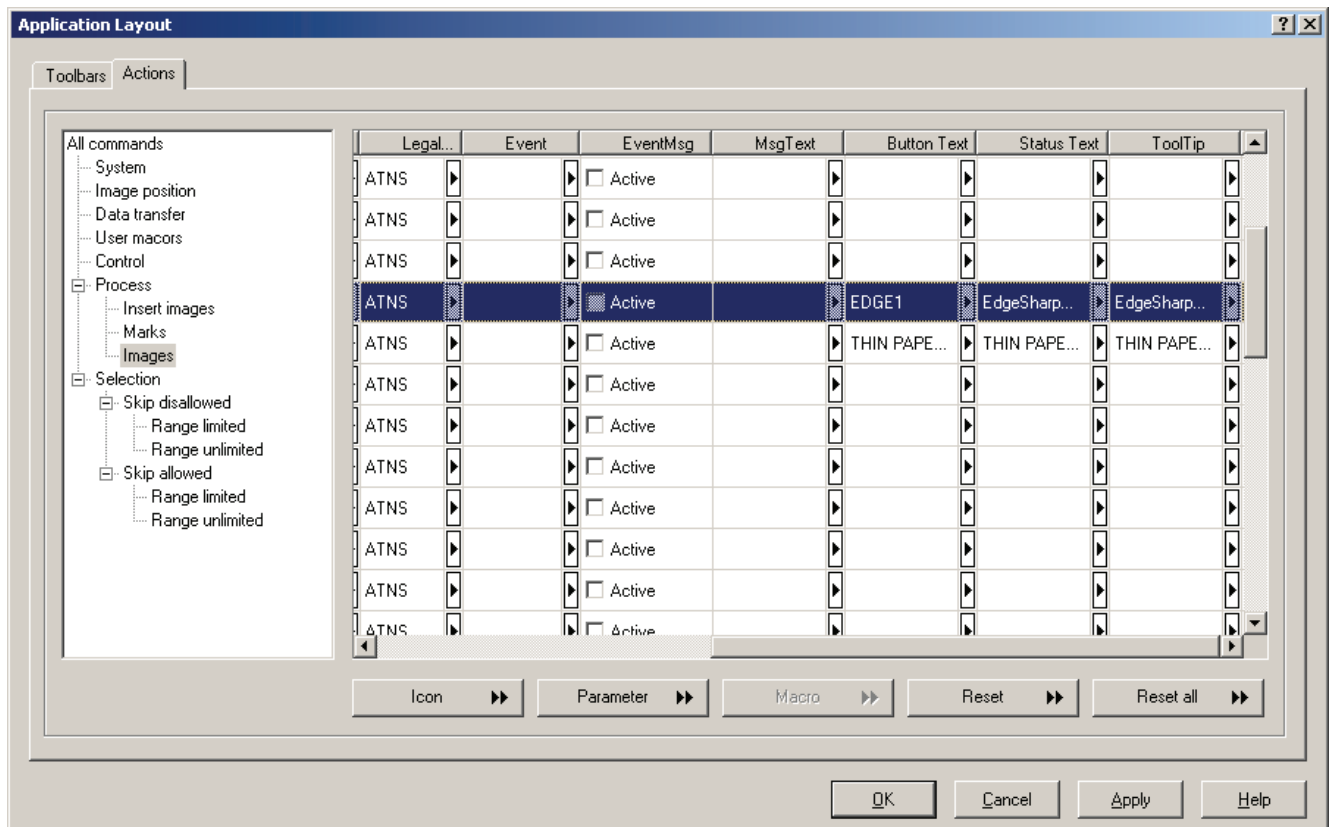


Illustration 20 – PlugIn Button in the "Process Image" Toolbar, Inscription

The texts should be as short and concise as possible as otherwise they might not display on the DpuScan screen in full length.

The final step is to move the button into the toolbar: In the "Actions," click the symbol with your left mouse key and drag it to the desired position inside the toolbar, please refer to [Illustration 17 – Insert PlugIn Button in the "Process image " Toolbar](#) on page 17.

From then on, the PlugIn will available there for direct execution,



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