CUTOUT 7

User Manual

FRANZIS

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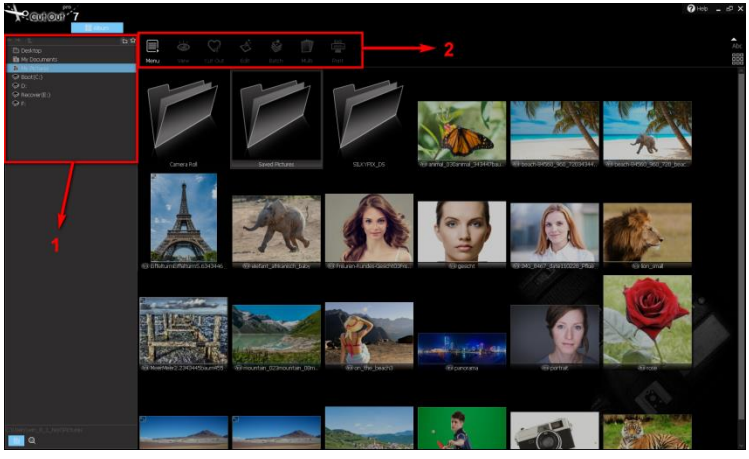
I Introduction

CutOut 7 enables you to separate the foreground from the background in your photo and edit each individually. Doing this involves a couple steps. These include selecting regions of the photograph to be separated (digital matting) and edited. For example, this could entail the transfer of an object into a different photograph or the application of Image altering or enhancing effects.



I.1 New in CutOut 7

CutOut 7 offers innovations in the field of digital matting, that significantly reduce the time-consuming process of cutting out images.

Accelerated matting speed

The speed of all functions in ***CutOut 7*** like the Inside/Outside Edge Matting, the Chromakey Matting or the Post-Matting, has been improved. With the enhanced algorithms, you can spare a lot of time and let your creativity flow freely.

Individual adaption of the icon size

The Album Mode shows all photos of a folder. If you press and hold the CTRL key and scroll the mouse wheel, you can adapt the icon size of the displayed photos as needed.

Better control of multiple layers

The new function *Change base layer* facilitates the work with multiple layers significantly. If you want to try out another background for a cropped object, you can now change the layer easily. Additionally, you also have the possibility to adjust the size of the background to your object.

I.2 Album Mode

After opening ***CutOut 7***, the Album Mode will appear. This is where you can manage your photos:

From region 1, choose the folder containing the photos you would like to mask or edit. The Search-tool, represented by magnifying glass and located at the bottom left of this region, enables you to search your entire computer for image files. In the Menu bar depicted in region 2, all the most important ***CutOut 7*** functions are only a click away. These include the cropping functions Chromakey Matting, Inside/Outside Matting and the new method of **"Cropping using Object Contours".**

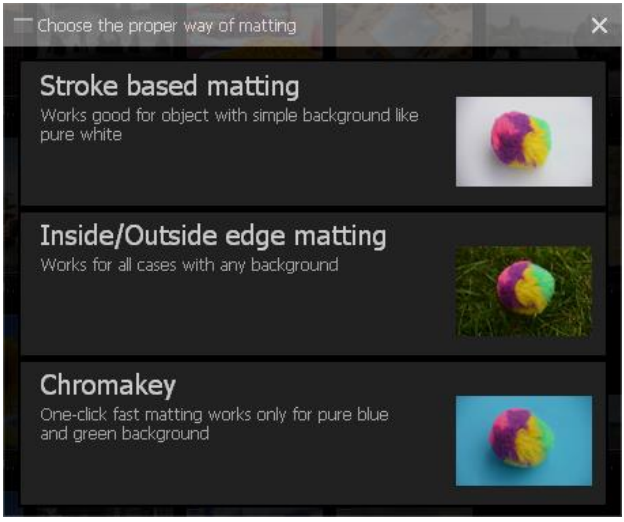
Different forms of application of these methods will be introduced in the following chapter.

The Album-View provides a simple and effective way to execute ***CutOut 7*** functions such as Overview, Sort, Rename, Copy, Paste, or to insert EXIF-Information. With one right click of the mouse on your photo, you can view all of the available functions in the Context Menu**.**

By clicking on the symbols in the upper right-hand corner of your screen, you can sort your photos according to specific criteria as well as adjust the icon size of your photos and folders:

II Quick Introduction into Object Cropping

To crop an object and remove it from an image, first select the image from **Album-Mode** you wish to work with, locate the Crop-Symbol in the Menu above and choose a Cropping Method.



Which Cropping Method is the best one?

There is no right or wrong answer to this question. Choosing the most appropriate cropping method is 100% dependent on the material you are working with:

If you would like to crop an object not positioned against an evenly colored or evenly defined backdrop, as most often the case, then we recommend you choose Inside/Outside Edge Matting. With the help of the polygon tool, the inside region (the object being

cropped) as well as the outside region (the background being cut out) can be selected, therefore enabling the object to be cropped.

If you would like to crop an object that does possess an evenly colored background (optimally blue or green) which is clearly discernable from the object, select the option Chromakey Matting.

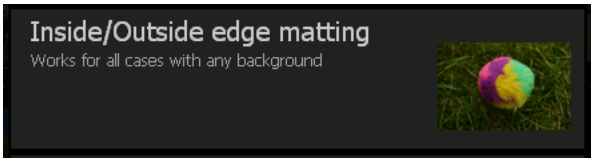
Well suited for use would be portraits with monotone backgrounds or landscape shots against a clear blue sky, for example, from which an object can be cropped.

The Cropping using object contours method presents itself as an appropriate solution in cases in which none of the two previously mentioned methods seem to yield the best result, or when areas within the cropped object need to be quickly and precisely removed. When this method is chosen, the image is divided into an array of small puzzle pieces, or segments, all of which can be designated as either parts of the inside or outside region with just one mouse-click. Segmented cropping takes into account brightness, colors and contours to the same degree and yields a clear-cut result. Using these calculated segments when cropping can also be seen as the best editing method for those looking to crop objects from images taken in front of evenly colored backgrounds, not necessarily in a photo studio that is, such as items to be sold on eBay shot while lying on the kitchen table. In most cases, the lighting is not always the best to allow for an effective editing job by use of Chromakey-Matting alone. Implementing Object Contour Cropping in such a situation will undoubtedly take your project the furthest. The effectiveness of this method can be seen quite well when cropping an object situated against a white, grey or black backdrop. When working with rather large images containing many segments, the calculation may take a little longer.

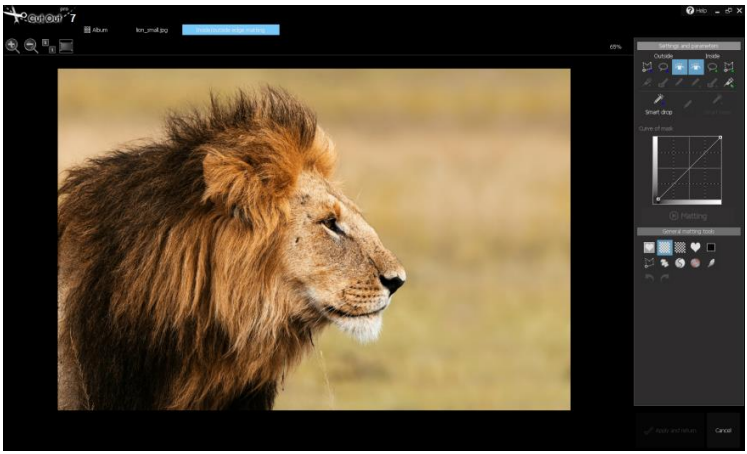
II.1 Inside/Outside Edge Matting

Method recommended for use when working with multicolored backgrounds—or when background tones appear similar in nature to those of the object in the foreground.

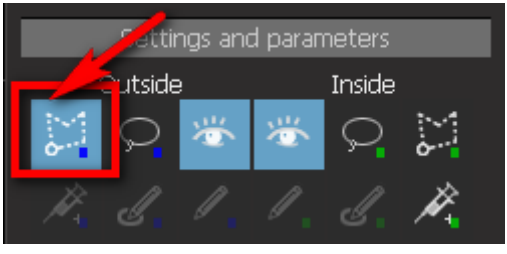
Inside/Outside Edge Matting is the right choice when it comes to cropping Objects from images which do not possess a strictly monotone background or are similar in color to the background itself. Select the Image you wish to crop from Album Mode and choose the middle option from the following window.

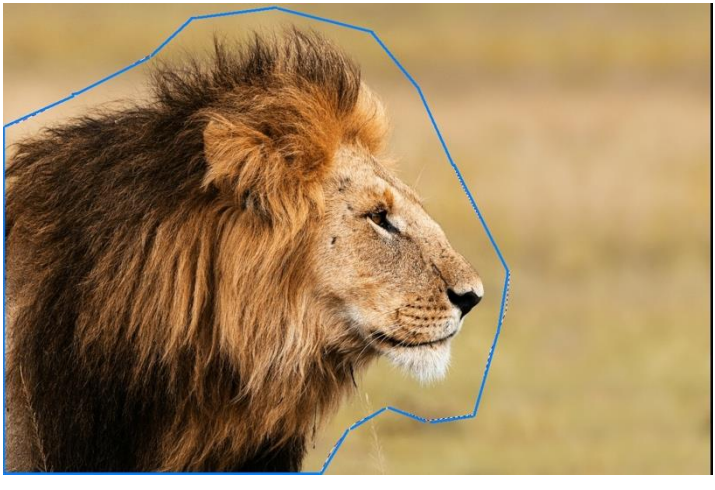


The designated image should now appear in the Inside/Outside Edge Matting Menu as shown:



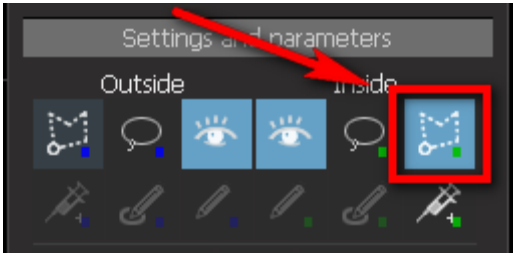
Since the background coloration in this case is not only varied, but also quite similar to that of the lion's fur, Chromakey Matting would most likely not deliver the best possible result. For this reason, it makes the most sense to go about separating the object in the foreground from the background by hand. To get started, locate the Menu bar on the right side and select the **polygon tool** for the outside selection from the upper left-hand corner. Now, draw an outer-edge outline around the lion's entire head.



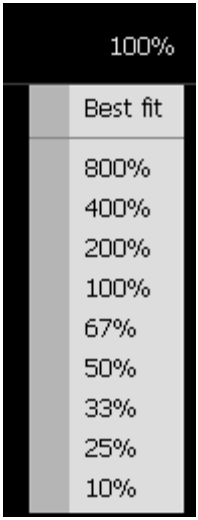


This does not need to be done with pinpoint precision. Most important when drawing the outline is making sure no point falls inside the object itself.

Now choose the polygon tool for the inside selection:



Step-by-Step, click and drag the outline along the inside border of the lion—that is, where the edge of his meets the background. Once again, this process does not need to be carried out 100% accurately. In order to be able to work more precisely, however, you can use the Zoom function located on the left side of the Menu bar:

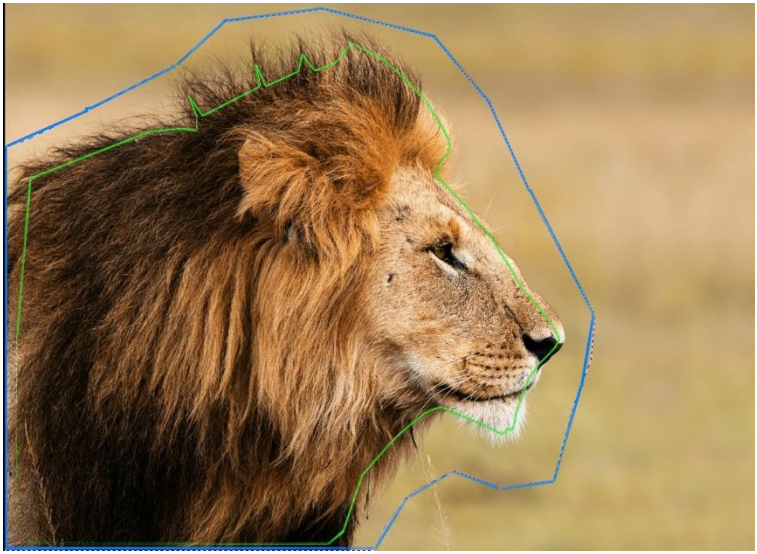


An alternative option is simply scrolling with your mouse wheel to adjust the zoom settings.

How do I move back a step?

If indeed you click on the wrong spot, one right click will enable you to undo and replace the last point made with the polygon tool**.**

Now finish up the outlining process so that your border spans the entirety of the object from the inside. Important here is once again that the inside border does not contact the outside border area or the background itself. Finish up your selection with a double-click.



Now you should see a green inside line and a blue outside line.

With one click of the Matting button on the right side of the menu, the object is cropped according to the inside and outside edge selections made in the previous step.

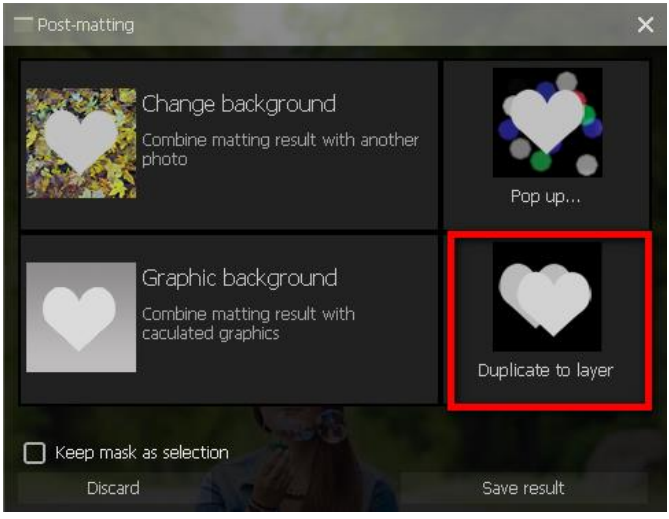
The result looks quite promising at first glance. The background has been removed and now appears transparent (gray/white grid-pattern):

If your result still doesn't look absolutely perfect, you can improve the cropped object by using an array of additional tools located in the Inside/Outside Edge Matting Menu. These will be described in further detail beginning in Chapter III ***Enhancing Cropped Objects.***

To create an individual layer for our Matting result that will allow for it to be further edited and saved, click on the *Apply* button located in the Inside/Outside Edge Matting menu.

Following this, the Post Matting Menu will appear presenting you with an array of options of how you can proceed with the cropped

object. To have your cropped object remain as its own layer, select the option *Duplicate Layer.* Further explanations regarding the remaining Menu options can be found in the chapter titled ***The Post Matting Menu***.



In addition, you can also insert a new background into your project.

Simply click on “Change Background”

The Matting result can now be found in the Drop-down Tab on the right side labeled *Layers*.

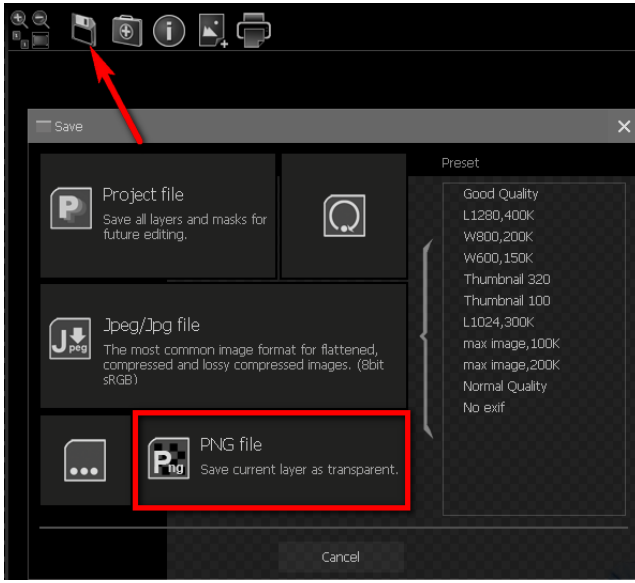
In order to be able to recognize your efforts and view the Matting result, you have to first hide the original picture containing the background. This can be done simply by clicking on the “eye symbol” located next to the layer:

Now you have the option of either saving your work by clicking on the save symbol in the upper region of the image, or you can keep working on the image with the numerous effects and editing possibilities in ***CutOut 7***.

When choosing the latter option, pay attention that you have chosen the correct Layer! In this case, the layer containing your Matting result must be chosen.

Mind that when saving your result, the file-save format PNG should be chosen in order to preserve the transparency information of the image.

You have now saved the lion onto a transparent background and can continue to use him in other programs with these same settings.



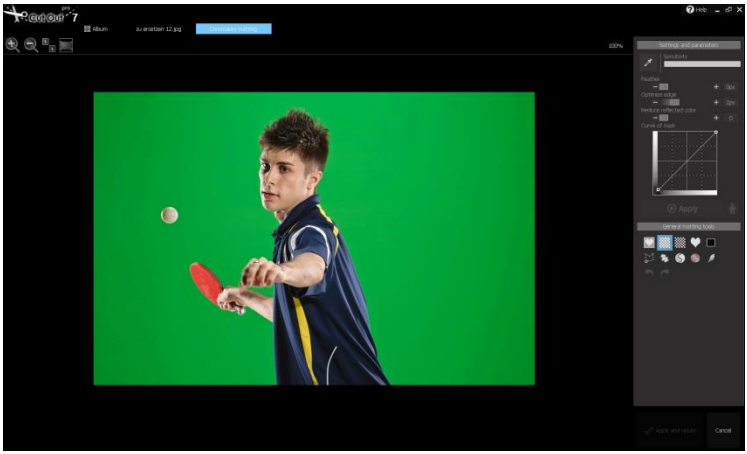
Once again, listed here are the most important steps in the selection of the inside and outside edges:

- Use the polygon tool in the selection of the inside and outside edge regions
- Click once to begin the selection
- One right-click of the mouse removes the previous point
- Moving and clicking of the mouse continues the selection
- Double-clicking ends the outline selection
- Use the mouse wheel to zoom in and out

II.2 Chromakey Matting

Methods used for cropping people or objects from images with monotone blue or green backgrounds.

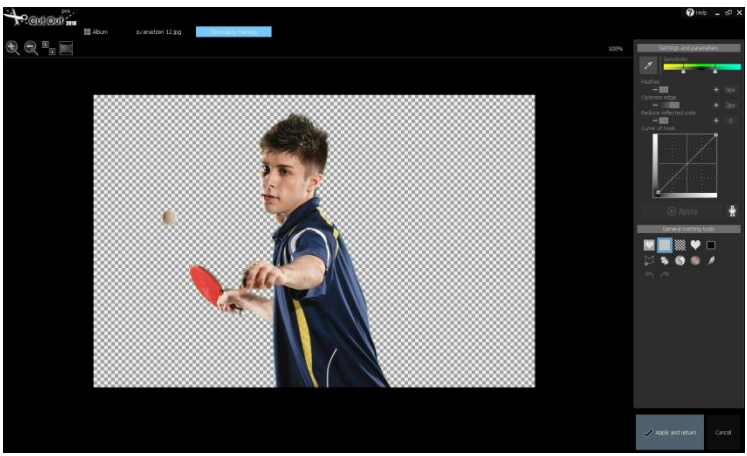
In order to crop objects with a solid green or blue background using Chromakey Matting**,** choose the image you wish to crop from Album Mode and select *Chroma-key* from the drop-down menu tab to start off. The designated image should now appear in the Chromakey Matting Menu:



On the right side of the screen, you will find various Matting settings that will help to enhance your result. In order to begin cropping this table tennis player from the image, or, to extract the green background, click first on the pipette symbol:

Following this, click on one area of the image with a color corresponding to that of the background color, in this case any green area. By using the Pipette tool so, you are sending ***CutOut 7*** information concerning the background color scheme. ***CutOut 7*** automatically recognizes which areas of the image need to be extracted and which should be kept.

The result will appear automatically with the (removed) background displayed transparently (gray/white grid-pattern):



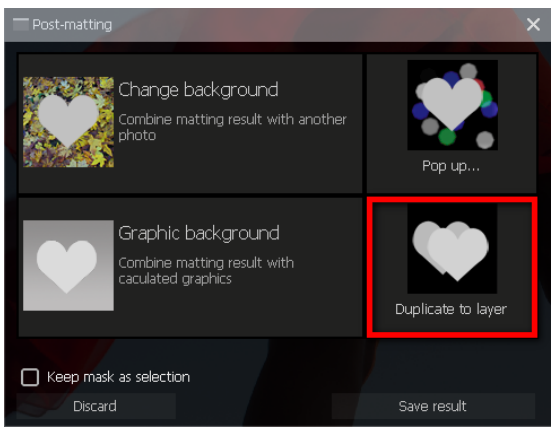
Since that the green background of this image differs noticeably from the object (the table tennis player), the Matting result has turned out quite ideal and shows little need for further improvement. However, more often than not, the background is not always so clearly defined, thus leading to the need for additional

improvements to the Matting result following the first round of edits.

To read more about this step as well as the various tools included in the Chromakey Menu, please continue to the chapter *Chromakey Matting Optimization*.

To now designate the Matting result as its own layer for further editing purposes, simply click on *Apply* in the Chromakey Matting Menu.

As a result, the Post-Matting Menu will appear presenting you with an array of options on how you can proceed with the cropped object. To have your cropped object remain as its own layer, please select the option *Duplicate Layer.* Further explanations of the remaining Menu options can be found in the chapter titled *The Post Matting Menu.*

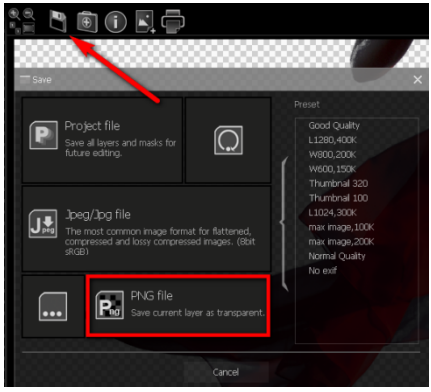


The Matting result can now be found in the drop-down Tab on the right side labeled *Layers*. In order to be able to recognize your efforts and view the Matting result, you have to first hide the original picture containing the background. This can be done simply by clicking on the eye symbol located next to the Layer:

Now you have the option of either saving your work by clicking on the save symbol in the upper region of the image, or you can keep working on the image with the numerous effects and editing possibilities ***CutOut 7*** has to offer. When proceeding to the editing stage, make sure to select the correct layer, in this case—the Matting-result.

Please keep in mind that your project should be saved in PNG format in order to retain its transparency information.

Note: This chapter should serve as a simple introduction into object cropping using Chromakey Matting. For a more detailed overview of functions found in this menu, please turn to the chapter ***Chromakey Matting Optimization.***

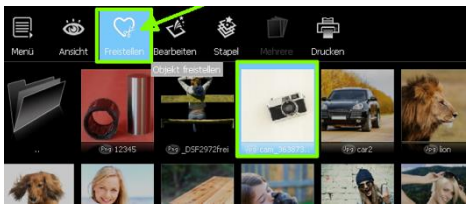


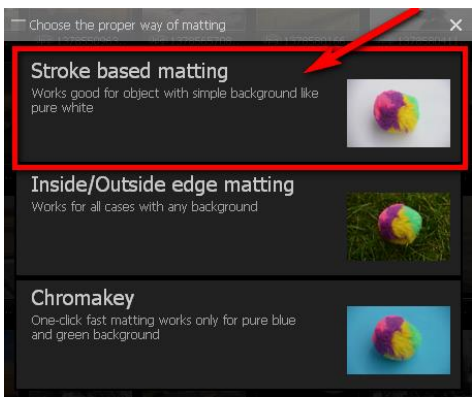
II.3 Cropping using Object Contours

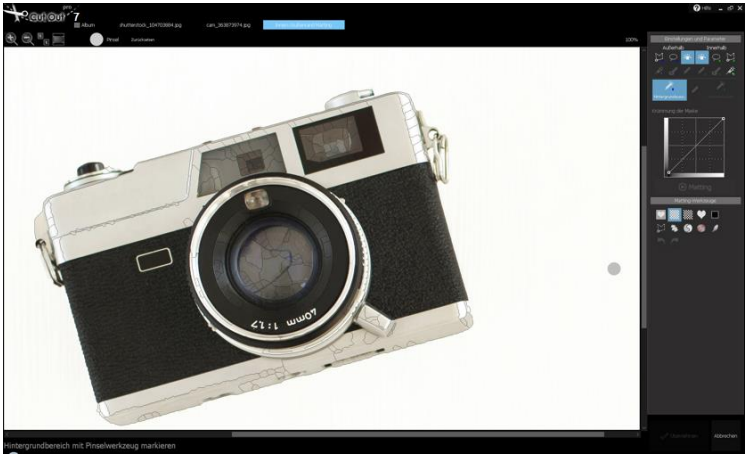
This method allows you to crop images possessing white, gray or black backgrounds. It can also be used to remove regions inside objects belonging to the background.

First Application Example — Cropping Objects on White Surfaces

Select your image from Album Mode and click the option labeled “Cut Out” in the menu bar.

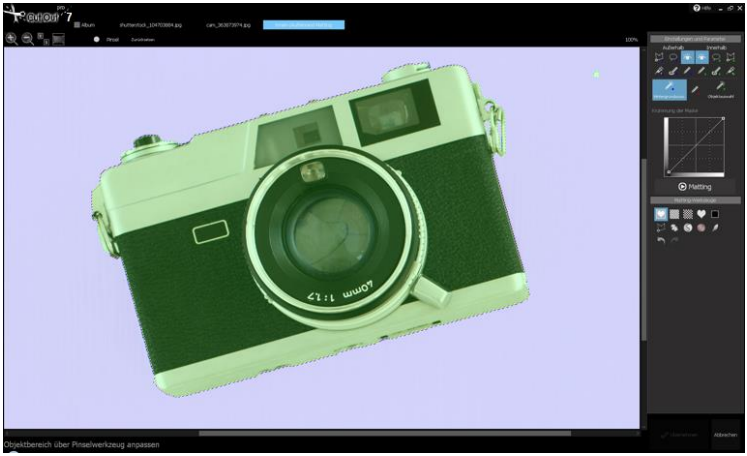






Section containing calculated segments

The image has now been segmented into separate sections according to their brightness levels, edges and coloration. Now click on the white background to crop the object.

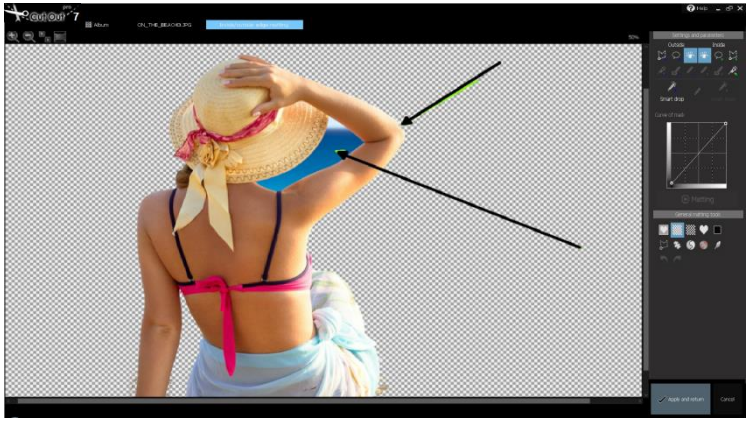


The object is now perfectly cropped. The designated region now shows a green tint, the background blue. Now click on the "Matting" button to remove the background. Following this, click *Apply* and choose a new background for your object.

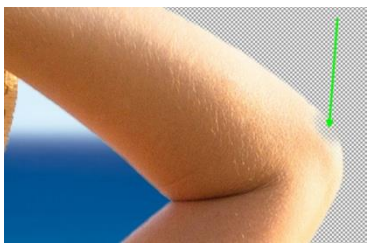
Second Application Example—Combing Inside/Outside Edge Matting with the Segmentation Method to flawlessly remove sections from the Inside region.

Select the Image you would like to work with and click the "Cut Out" button.

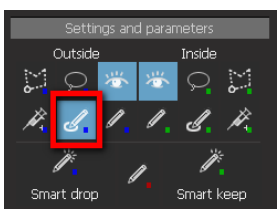
Now choose the Inside/Outside Matting method and designate the inside and outside edges as usual. The cropped result now looks like this:

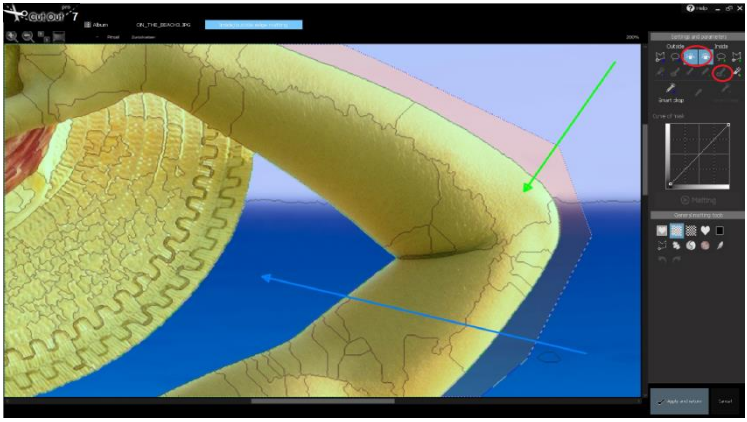


Immediately we notice that the blue waterline between the woman's hat and upper arm still needs to be removed. In addition to this, there is a small portion of woman's arm that was cut out during the Matting process and needs to be restored.



Now click on the segment calculation symbol.





In order to incorporate the water region into the outside calculation, simply designate this area with the blue segmentation. The green segment selection should now be used to bring back the part of the elbow missing in the cropped result. Clicking *Execute* followed by *Apply* will finalized your edits.

The result speaks for itself!

III Editing Cropping Results

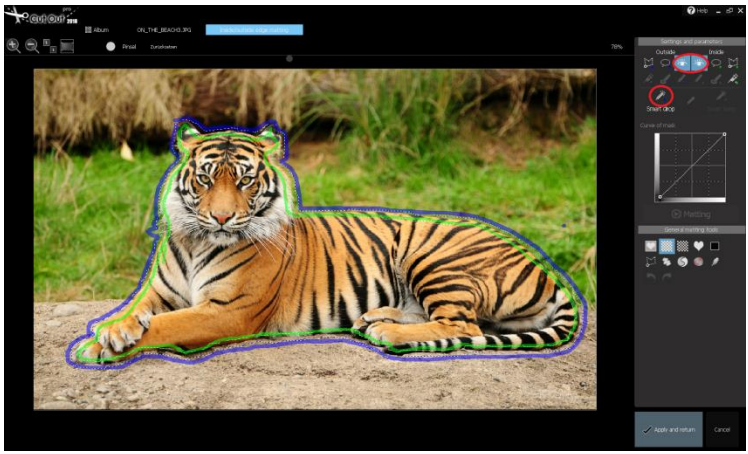
III.1 Editing Inside/Outside Edge Matting Results

CutOut 7 allows you to crop images using inside and outside edge markers faster than ever. Simply trace a rough outline of the inside and outside edges your object with the help of a contour tool and ***CutOut 7*** automatically recognizes in which the region the separation of the foregrounded object from the background should take place. In addition, you can always adjust the area of separation however you would like. With this new function perfectly suited for precisely cropping objects with clearly defined edges, you end up saving a considerable amount of work time.

You can find these contour tools alongside the well-known polygon tools used for the inside and outside edge selections:

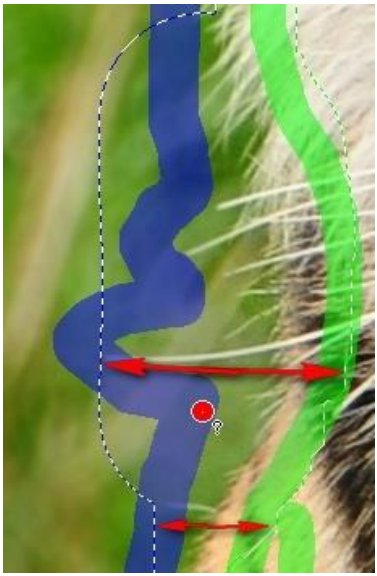
In contrast to the polygon tool, you only have to create a rough outline along the inside and outside edges of the object you wish to crop, thus saving a great deal of time. When working with the contour tool**,** you can adjust the brush-settings at the top of the screen before you begin working:

Following this, use the contour tool to begin marking the inside edge of the object and then switch to the contour tool for the outside edge selection. This approach is identical in nature to the application overview of the polygon tool in the Quick Introduction Chapter earlier in the manual.



From these seemingly roughly painted lines, ***CutOut 7*** recognizes which areas belong to the respective inside and outside edge regions. With the contour tool, you can precisely adjust the space in-between the previously selected inside and outside edges, and ultimately correct it if needed:

This makes sense in cases where the calculation cannot clearly identify a region as belonging to the inside or outside, for example around the tiger's beard in the image above. After going over this area between both lines with the contour tool, the width of this area expands from that of the lower red arrow to that of the upper, leaving ample space to include finer detailing in the calculation:



At first glance, the contour tool delivers a professional grade result just like the polygon tool, and this in considerably less time.

The contour tool is well suited for roughly mapping out outlines of objects with clearly defined edges. If this happens not to be the case, the polygon tool tends to be a the more appropriate choice.

IV Optimizing Results using Matting Tools

IV.1 Chromakey Matting Optimization

IV.1.1 Settings and Parameters

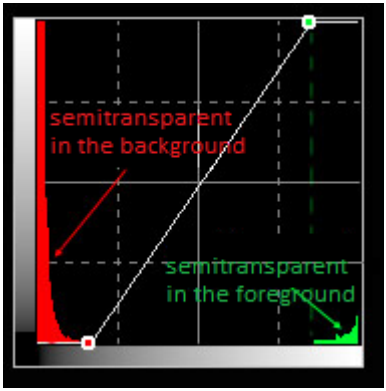
For information on when you should use Chromakey Matting and how to begin cropping an object, please refer to the Quick Introduction Chapter located at the beginning of the manual. This chapter deals with complicated cases as well as the optimization of cropping results through the use of various tools available in Chromakey-Matting. Should the procedure introduced in the Quick Introduction Chapter not deliver preferred results, you have an array of additional options at your disposal located in the Chromakey Matting Menu and also explained in greater detail here throughout the next couple pages:

- **Feather Brush**
  Adds individual pixels to the mask and ensures a softer transition from the foreground to the background.

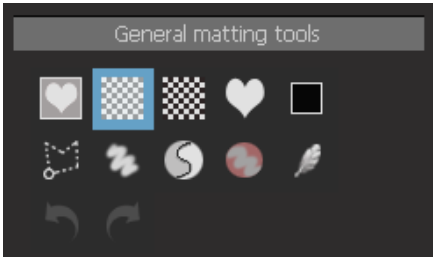
- **Edge Optimization**
  Optimizes the mask around the edges of cropped objects.

- **Reduce Reflected Colors**
  On some occasions, the background color can be unwantedly reflected into the foreground. An example of such a case would be when a person with white clothing is photographed in front of a blue backdrop. This can lead to the white clothing appearing semi-transparent. This option enables you to reduce exactly this effect.

- **Masking Curve**
  Improves the mask following the completion of the Matting process. Adding additional control points makes the curve variably adaptable.

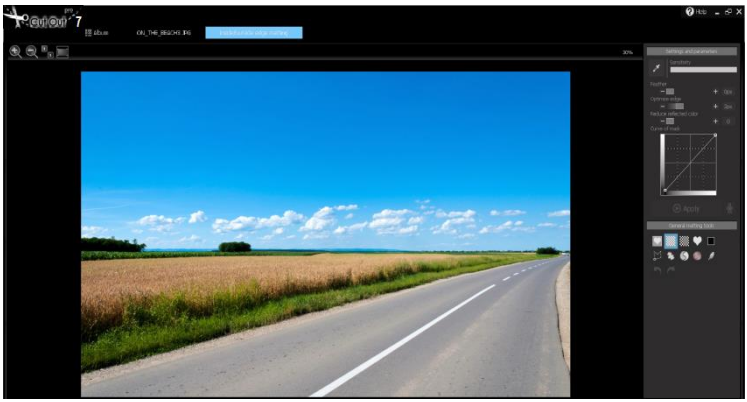


Should your Matting result still contain flaws, you can use any of these Matting tools to touch up your result:

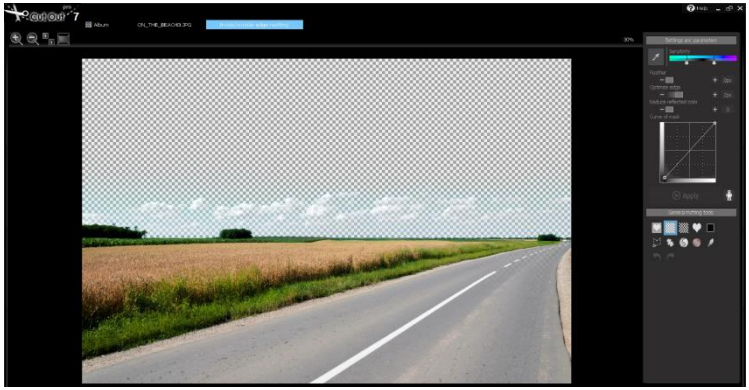


Now for some practical application: Let's use the following landscape photograph taken in front of a beautiful blue sky backdrop as an example.
There are scattered white and grey clouds throughout the background of the picture, however, and it is these you want to remove along with the entire background.

The various functions in the Chromakey Matting Menu will be introduced step-by-step using this photograph as an example. Lastly, a method for precise removal of the clouds will also be presented:



Chromakey Matting is applied to this photograph by clicking on a region of the blue sky with the Pipette-Tool (described in the Quick-Introduction Chapter). The outcome appears as follows:



The blue areas of the sky have been successfully removed, however the clouds remain. These are still present because they are indeed not blue, but whitish-grey.

Sensitivity

The Sensitivity tab gives you the ability to precisely adjust the sensitivity of selected color tones. Dragging the left marker further towards the left will expand the color range, thus displaying a greater area transparent surrounding the designated color tone range. With the goal of removing the clouds from the image in mind, dragging the left marker towards the left could prove helpful since even lighter blue tones will now appear transparent. Clicking on *Apply* will allow you to view your result.

With closer examination, this procedure seems to have yielded slight improvements:

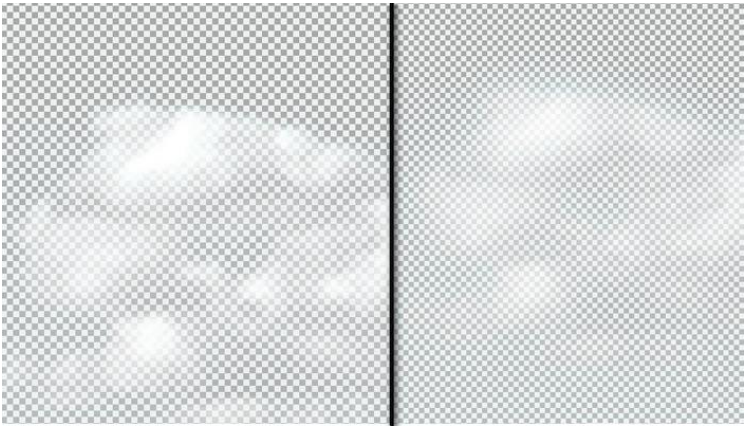
Lighter blue tones excluded Lighter blue tones included

The lightest blue tones now appear transparent; however, the solid white clouds remain in the photograph. Sensitivity adjustments are generally well suited for incorporating or excluding further color ranges with the tone designated by the Pipette tool.

Feather Brush

Adjusting this slide control will allow you to expand the border area of the transparent regions by 1 to 8 pixels. This means a greater selected value will incorporate a larger transparent area in the region between the foreground and the background.

Taking a look at our current example, the adjusted settings have resulted in the following:



Feather Brush Area Radius at 0 Pixels Feather Brush Area Radius at 8 Pixels

This option can be reliably applied either when the Chromakey tool has left out a small portion of the object actually meant to be transparent or if you wish for a smooth transition from the foreground to background. In this case, an increase in the amount of edge pixels in the border area can be the key to an optimal result.

Edge Optimization

With this function, ***CutOut 7*** optimizes the transitional region between the foreground and background according to the set amount of pixels (1 to 8).

Applied to our example, improvements are hard to see. The impact is only marginally visible:

Edge optimization 0 Edge optimization 5

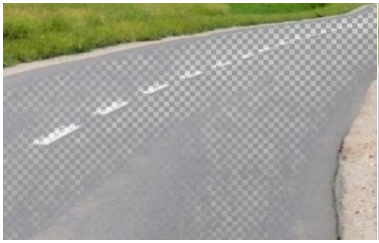
The edges, or the transitional areas in which the field meets the sky, were only able to be slightly improved with this method. The result can be seen in a smoother transition. This effect becomes enhanced with each increase in pixel amount on the slide controller.

Reducing Reflected Colors

Occasionally, background colors can be reflected into the foreground. Should this be the case with your image, this effect can be reduced by use of the slide control effect ***Reflected Color Reduction.*** With regards to our example above, an increased value on the slide control leads to a reappearance of the already transparent clouds due to the fact that program falsely assumes that these are part of the background. With our goal of extracting clouds from the image in mind, this function doesn't help us much. For editing the region of the photo containing the road however, this function will have a lot to offer.

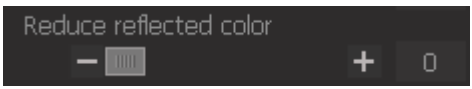
In our previous Matting result, small portions of the street were falsely rendered transparent. Increasing the ***Reflected Color***

Reduction side control setting to that of 50 yields the following result:



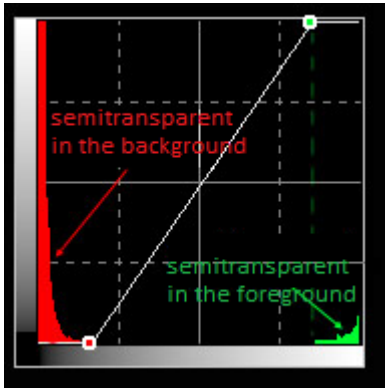
Reflected Color Reduction at 0

Reflected Color Reduction at 50



Curve Window

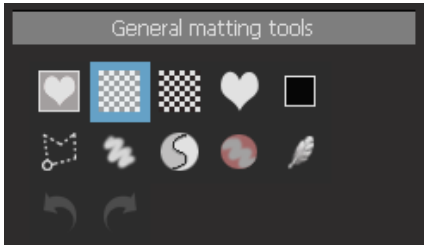
The Curve Window allows you to alter the curvature of the cropping-mask.



Simply by clicking along the graph, you can designate specific points to make transparency levels variably adaptable. This enables an arbitrary adjustment to the transparency levels of the pixels in the foreground as well as in the background. The foreground pixels are displayed on the right side and the background pixels on the left. The vertical axes denote the level of transparency/opacity with which each pixel region will be displayed in the photograph. For example, when a vertically aligned point along the curve is shifted downwards, the transparency of this pixel region will increase.

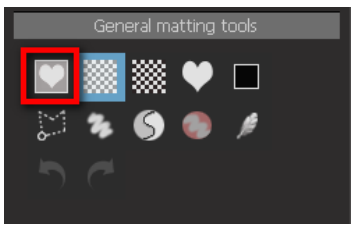
IV.1.2 Matting Tools

Alongside the various settings and parameters found in the Chromakey-Matting Menu, ***CutOut 7*** also provides access to a number of Matting Tools with which you can further optimize your cropped result, given the desired result was unable to be achieved using the previously mentioned settings and procedures.



Displaying your Matting Result in front of a new Background

With the tools displayed in the upper row of the window shown above, you can test the look of your project in front of different backgrounds. Holding down on the heart button with your mouse allows you to view the original image you began with. Releasing this button will show the cropped result in front of a transparent background. The symbol located next to the heart allows for display in front of a transparent background. This can be used to quickly compare which parts of the original image are included in your cropped image and which have been left out.



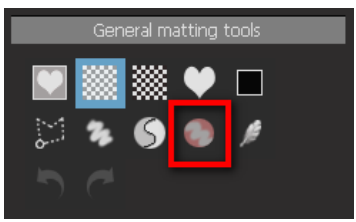
With the additional symbols on the right, you can display your cropped result in front of a black and white background (Black/White tile patterned button), view your matting mask in gray-scale (Heart button: Foreground becomes white, transparent region black and partially transparent pixels turn gray) or simply place your cropped result in front of a single-colored background (colored square).

Additional Matting-Tools

Border Region Desaturation

The Desaturation tool can be used to desaturate designated color tone ranges. This tool finds itself especially useful in cases where the edge of the object possesses the same or a very similar color to that of the background. The Desaturation tool can assist in quickly and easily removing this color.

Choose the Desaturation tool from the Matting tools Menu and thereafter click on the color in the image you would like to desaturate:



Customize your desired brush settings located in the upper Menu bar and begin painting. You can vary the strength to which the area is desaturated by adjusting the opacity in the brush settings. The selected region is the only one being desaturated, other areas remain unaffected.

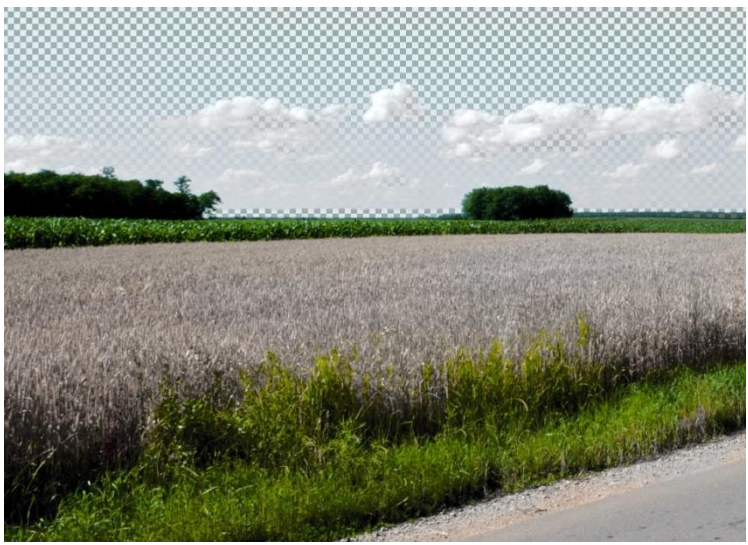
The example image below shows our result:

Before Desaturation

After Desaturation

Recognizable in this example is a less washed-out transition from forest to sky. Colors in this border region have successfully been desaturated.

Along these same lines, it is of course also possible to apply this effect to other regions of the photograph. For example, desaturating the brown wheat in the field yields the following result:



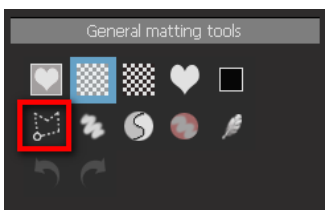
Feather Brush

The **Feather Brush** allows for the softening of specific regions and a therefore noticeably smoother transition. Quite often the effects only become visible when the image is zoomed in on. Adjust the brush settings and simply paint over regions where a softer transition is desired.

IV.1.3 Allocating Regions to the Foreground/Background

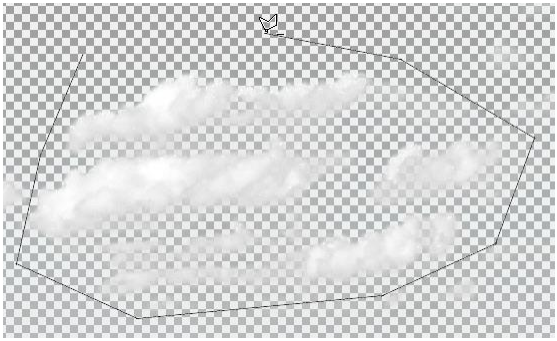
Polygon Tool

Matting tools in the second row will undoubtedly prove especially interesting and useful: The polygon tool enables you to select and remove (that is to make transparent) any region of your image result or bring already transparent sections of the image back to the foreground. By clicking the SHIFT-Button, you can bring these selected regions back into the foreground ("+" Symbol located next to the polygon tool). By not holding SHIFT, you can move the areas already in the foreground to the background ("-" Symbol next to the polygon tool). When using the polygon tool and holding the STRG-Key, you can freely select regions without having to use the polygon tool selection functions.

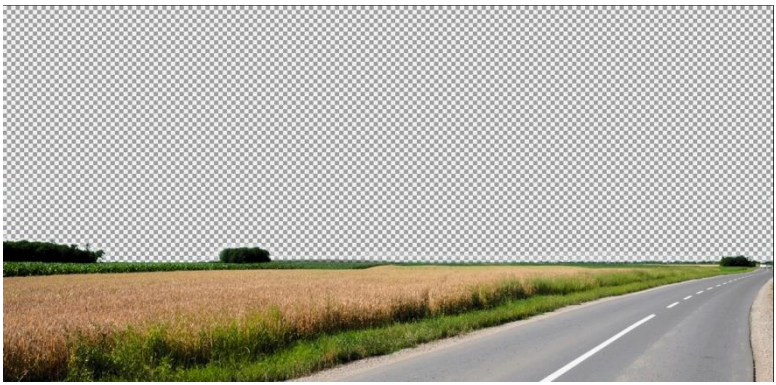


By these means, we can quickly and easily remove the clouds from the image featured in our first application example. To do this, we

will be using the polygon tool while making sure that the "-"-symbol appears next to the tool, given our aim is to remove objects from the foreground (or make them transparent), and not the other way around:

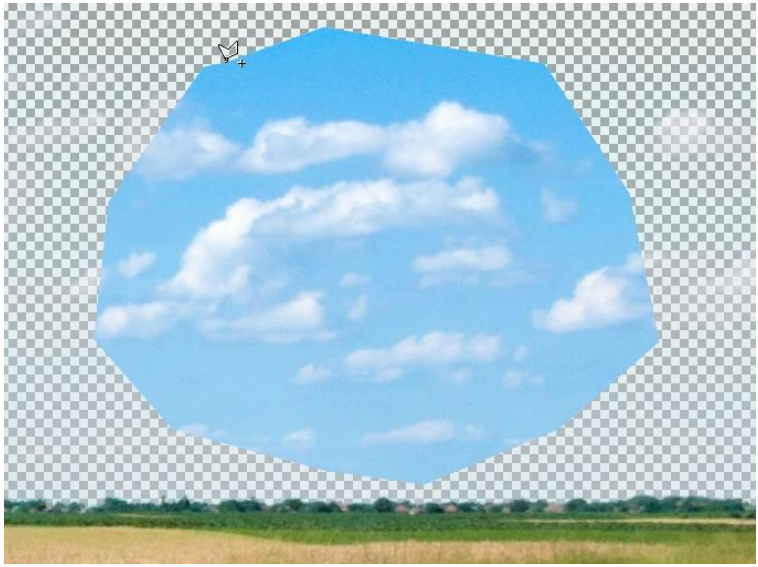


With one double-click the selection process is finished and the clouds disappear:



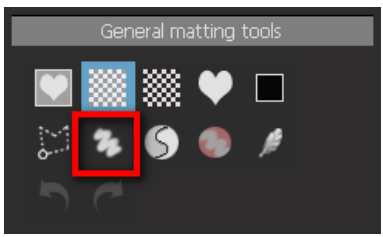
In order to be able to work more precisely, you can magnify the section of the image you are working on by increasing the zoom on your mouse-wheel or on the zoom level next to the Matting Menu on the left.

In the same way, it is possible to bring already transparent regions back to the foreground. Important here is making sure that the “+”-symbol appears next to the polygon tool when making your selection:

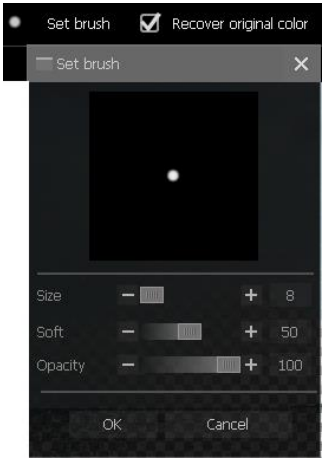


Free Paint Tool

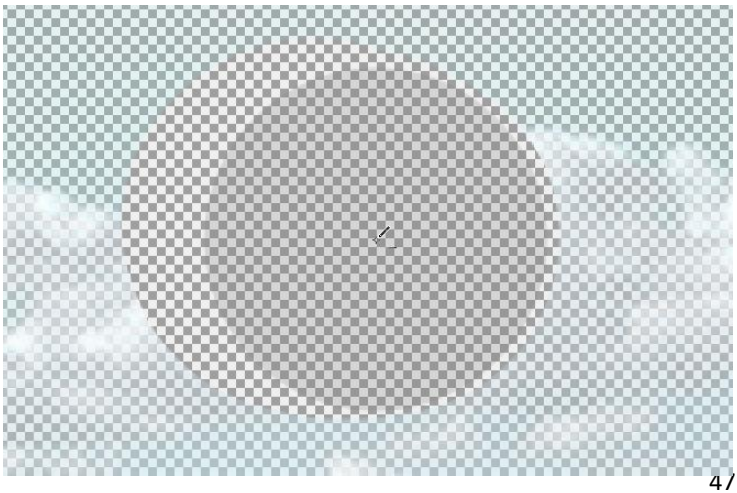
The Free Paint tool in the Matting-Menu functions uses a similar principle—that is, you simply select the areas you wish to edit with a brush instead of with the polygon tool.



Select the Free Paint tool from the Menu and adjust the brush-settings near the top of the window:



In this window you can adjust the brush size as well the softness and the opacity. At a lower opacity level, selections will become half-transparent.

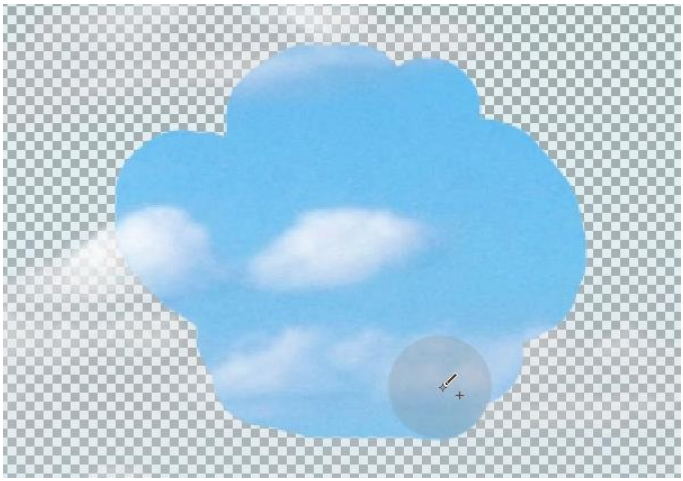


Same as with the polygon tool, holding or not holding the SHIFT-key allows you to bring the transparent background back into the foreground or move visible objects to the background.

In our example, removing the clouds can be done by holding down the SHIFT-key while painting over them. When doing this, the "-"-symbol should appear next to the drawing tool**.**

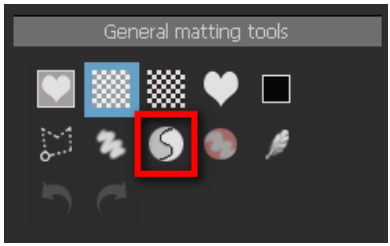
In this case, the opacity should be set to 100 since we do not just want to leave the clouds partially transparent—we want them to disappear.

Regions already marked transparent can be brought back into the foreground by using the Free Paint tool on the "+" setting along with the *Use Original Color* function located next to the brush settings window. The painted areas that are now transparent will thus be returned their original color.



Re-Matting Tool

The third possibility for allocating regions to the foreground or background can be found in Re-Matting. For this option, choose the icon resembling the Yin-Yang symbol in the Matting Tools Menu.



This tool allows for the designation and allocation (to the foreground or background) of up to six color tones present in the foreground and background.

This tool is especially useful when it comes to Re-Matting of the edges of foregrounded objects, in other words, the space in-between the foregrounded object and the background.

After selecting the Re-Matting tool, click on an area in the foreground or in the background. When hovering your mouse over the image, the Pipette symbol will either appear with an “F” next to it, indicating the area as belonging to the foreground, or with a “B” for the background:

After the foreground and background colors have been selected, the tool will change into the Free Paint tool.

If you wish to include additional colors to your selection, hold down the SHIFT-key while making your further foreground and background color selections (up to six respectively).

When transferring to the painting stage, the brush settings (Size, Softness and Opacity) can be adjusted accordingly and the Re-Matting process may begin:

When using the Free Paint tool to paint your image, only the color tones you previously designated as foreground colors will remain, the rest will become transparent. Color tones designated as belonging to the background will remain transparent in the same way, leaving visible those colors having not made it into the background selection. This method can help to optimize the appearance of elements in the transitional regions—that is when working in spaces between the foregrounded object and the background. With one right-click of the mouse you can reset your previous color tone selection.

The effects of the Re-Matting on our example photograph can be seen below:

After the simple Matting process, there still remains a certain lack of clarity in the region between the background (sky) and the foreground (tree, field):

It becomes apparent that there are still a number of pixels in this transitional region that appear partially transparent. In order to more definitively allocate this pixel grouping to the foreground or background, we shall proceed in defining these by means of the foreground and background color tone selection using the Re-Matting tool:

Ensure that the SHIFT-key is held down for the duration of your selection. After defining both the foreground and background color tones, applying the brush tool to the transitional region in our example photograph yields the following result:

The Painting-Tool was applied from left to right towards the middle of the ellipse, beginning on the right end of the grouping of trees.

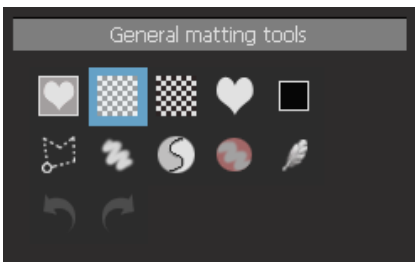
The difference is clearly visible between the painted area on the left and the untouched area on the right side of the ellipse.

As you can see, these “blurry” areas were able to be cleared up substantially by the exact color definition and allocation to the foreground and background.

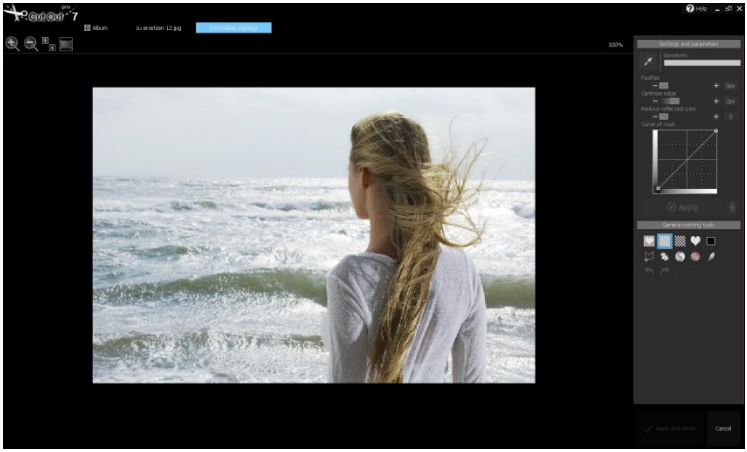
IV.2 Inside / Outside Edge Matting Optimization

IV.2.1 Settings and Parameters

For a complete description of when to use Inside/Outside Edge Matting and how to quickly and easily begin cropping an object, please refer to the Quick Introduction Chapter at the beginning of the manual. This chapter deals with complicated cases as well as the optimization of cropping results through the use of various tools available in Inside/Outside Edge Matting. Should the procedure introduced in the Quick Introduction Chapter not deliver preferred results, you have an array of additional tools located in the Inside/Outside Edge-Matting Menu at your disposal:



In the following example, however, we will attempt to optimize the cropped image result without having to refer back to any of the Matting tools. To begin, let's take the picture below showing a woman whose hair blowing in the wind. This is a prime example of a project involving a seemingly complicated cropping procedure due to the numerous spaces between her hair and the background (in this case the sea and sky). In the following, the various Inside/Outside Edge Matting functions will be presented step-by-step using this image example and you will learn how to optimize your own Matting result of similar nature.



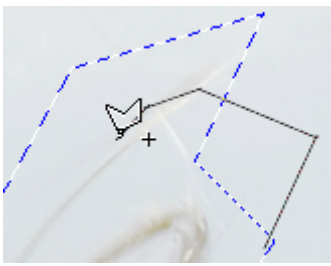
When you proceed to crop this woman from this image using the Inside/Outside Matting procedure described in the Quick Introduction Chapter, the question arises of how to include the intermediate areas between her hair and the background when designating the inside and outside edges.

In our initial attempt, a relatively large area surrounding her hair is selected:

This selection yields the following relatively pleasing result:

CutOut 7 was relatively successful in recognizing which areas of the image belong to the foreground and which belong to the background.

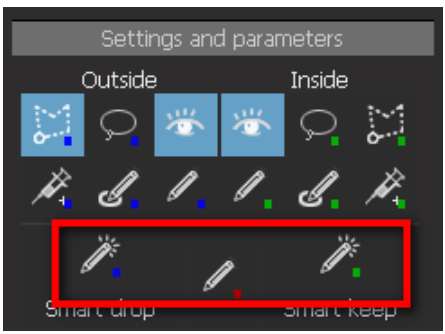
NOTE: Once the inside and outside selections have been made and you would like to either reduce or enlarge your selection, completely redrawing the outlines is in no way necessary. Simply choose the polygon tool and hold down the SHIFT-key while marking the areas you wish to add to the selection. To remove specific areas from the selection, hold down the STRG-key while designating these regions. The **"**Addition Mode**"** and the **"**Subtraction Mode**"** can be recognized by the plus and minus symbols located next to the polygon tool:



Here an overview of the most important steps in the selection process of the outside and inside edges of the object:

- Use the polygon tool for the inside and outside selections
- Click once to begin the selection
- One right-click of the mouse will remove the previously selected point
- Moving and clicking of the mouse continues your selection
- One double-click of the mouse finishes the selection
- Hold the SHIFT-key for Addition-Mode or the STRG-key for Subtraction-Mode
- Use the mouse wheel to zoom in and out of the image

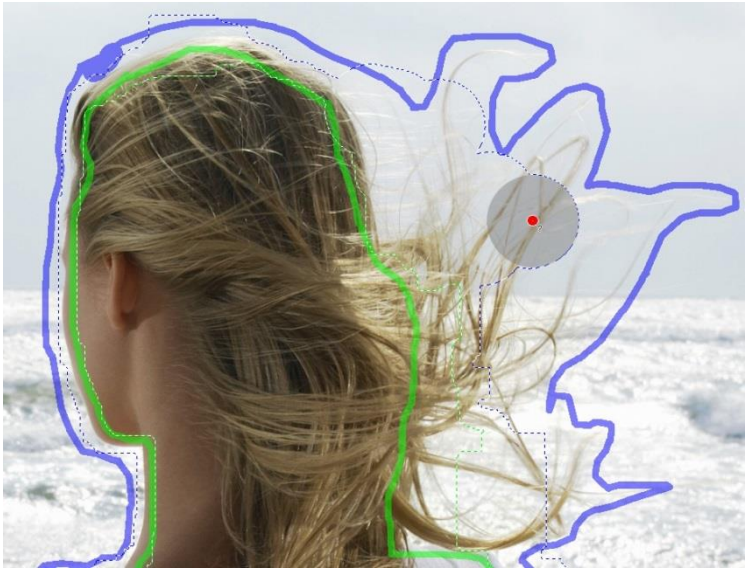
In addition to the ability to make your selection of the inside and outside borders using the polygon tool, this can also be done using the Edge tool:



The Edge tool is well suited for cropping objects with clearly defined outlines. This is however not the case with our example image.

If the outlines of the inside and outside selections are made using the Edge tool, the program is unable to recognize that the outside selection should continue around the strands of hair blowing in the wind, resulting in it pushing the inside selection further inwards:

This rather undefined outline can be corrected by simply expanding it using the Edge tool.



The resulting cropping result does indeed look quite presentable, however the use of the Edge-tool instead of the polygon tool has resulted in more rather unsightly areas throughout the image (refer to the areas in the following photograph outlined in red):

Various Matting tools could be used to remove the individual white imperfections located around the strands of hair. The different Matting tools and their editing capabilities you have at your disposal will now be introduced and explained step-by-step in the following chapter.

IV.2.2 Cropping Intermediate Areas of an Object using the Edge Tool

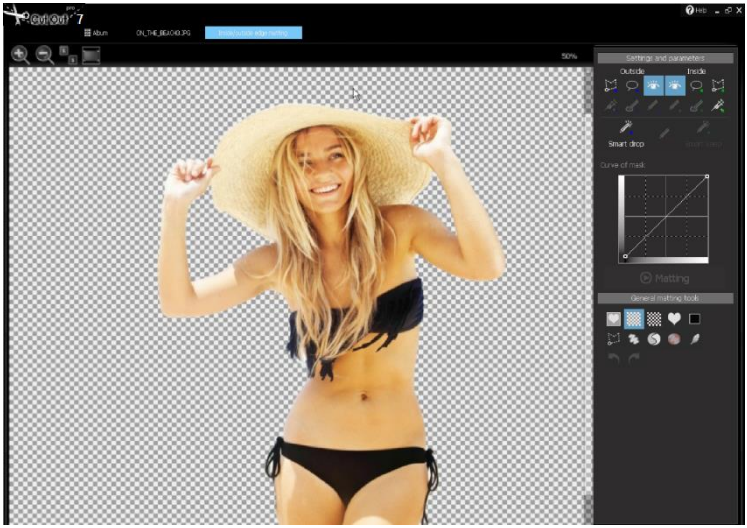
More often than not, you are confronted with objects that have elements of the background situated within their borders that need to be removed.

Typical examples are photos in which people have their hands situated on their hips, or as in our example below, positioned on their heads:

When cropping such an image using Inside/Outside Edge Matting, the outcome becomes problematic due to the fact that the areas between the arms and the hat are not removed, rather remain in the cropped result.

With the new Edging-tool in ***CutOut 7***, you can easily remove these regions by outlining them individually after making the inside and outside selections around the entire person:

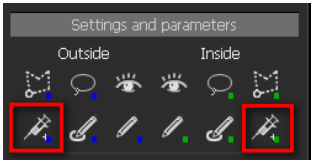
The result of this edge definition speaks for itself:



The problematic areas between the arms and hat have now been successfully and easily removed.

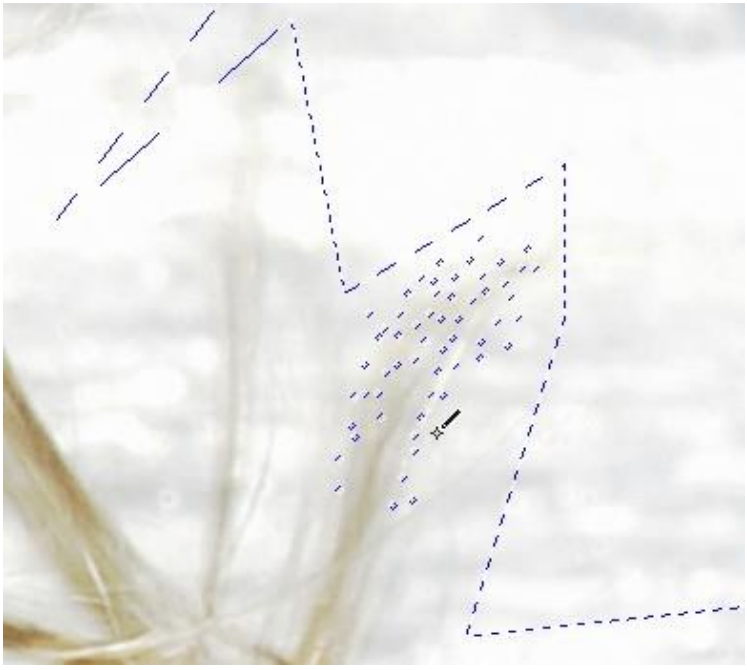
IV.2.3 Syringe Tool for Detail Enhancement

The Syringe-tool, located directly next to the polygon tool in the Menu, enables you to add individual pixels to both the inside and outside object edge selections.

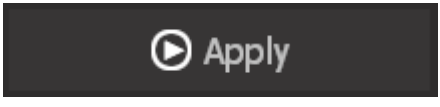


For example, after defining the inside and outside object outlines, you may use the Syringe tool for touching up the outside outline by clicking on each individual pixel you believe to belong the

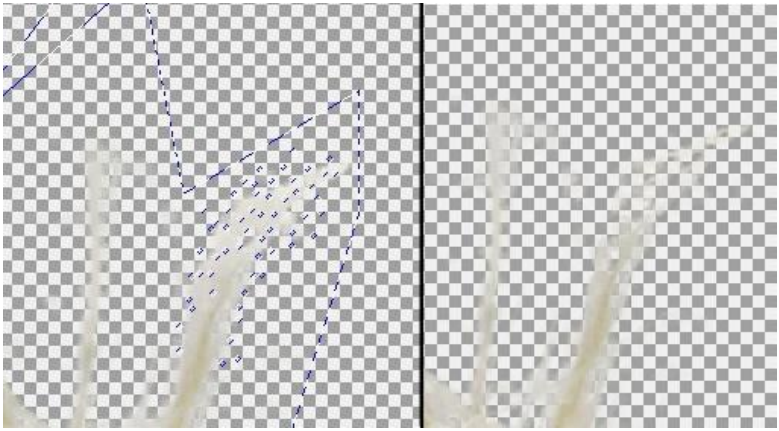
foregrounded object. In the example below, we are attempting to remove the white streaks surrounding the strands of hair:



The Syringe-tool allows you to work extremely precisely due to the tool's ability to select individual pixels with each click of the mouse. When you've finished your selection, hit the *Apply* button once more to view your current cropping result.



The application results can be seen in the following:



Before Syringe tool After Syringe tool

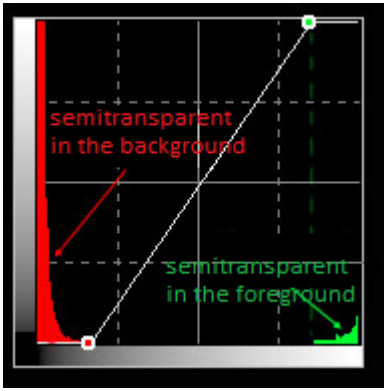
It can be seen in this example image that the white streaks around the strands of hair have almost been completely edited out. With each additional pixel adjusted, the clearer your result will appear.

The Syringe-tool can be applied in the same way for the inside outline selection: Simply designate the pixels in regions of the photograph belonging to the inside selection and click once more on *Apply* to view the result.

Since the Syringe-tool is meant for refining highly detailed areas, zooming in on your image considerably for easy recognition of the slightest differences is highly recommended. Only then is a precise analysis possible.

Curve Window

The Curve Window allows you to alter the curvature of the cropping-mask.

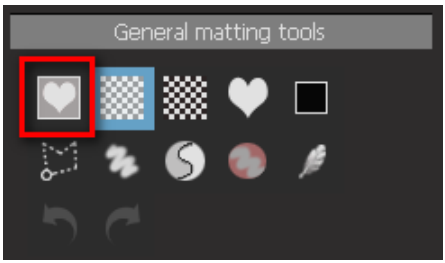


Simply by clicking along the graph, you can designate specific points making transparency levels variably adaptable. This enables an arbitrary adjustment to the transparency levels of the pixels in the foreground as well as in the background. The foregrounded pixels are displayed on the right side and the background pixels on the left. The vertical axes denote the level of transparency/opacity with which the pixel region will be displayed in the photograph. For example, when a vertically aligned point along the curve is shifted downwards, the transparency of the region of pixel will increase.

IV.2.4 Matting Tools

Displaying your Matting Result in front of a new Background

With the tools displayed in the upper row of the window shown above, you can test the look of your project in front of different backgrounds. Holding down on the heart button with your mouse allows you to view the original image you began with. Releasing this button will show the cropped result in front of a transparent background. The symbol located next to the heart denotes the display of the transparent background. This can be used to quickly compare which parts of the original image are included in your cropped image and which will be left out.



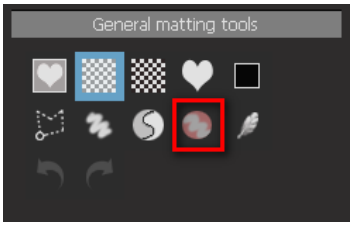
With the additional symbols on the right, you can display your cropped result in front of a black and white background (Black/White tile patterned button), view your matting mask in grey-scale (Heart button: Foreground becomes white, transparent region black and partially transparent pixels turn grey) or simply place your cropped result in front of a single-colored background (colored Square).

Additional Matting Tools

Edge Region Desaturation

The Desaturation tool can be used to desaturate designated color tone regions. This tool finds itself especially useful in cases where the edge of the object possesses the same or a very similar color to that of the background. The Desaturation tool can assist in quickly and easily removing this color.

Choose the Desaturation tool from the Matting tools Menu and thereafter on the color in the image you would like to desaturate:



Customize your desired brush settings located in the upper Menu bar and begin painting. You can vary the strength to which the area is desaturated by adjusting the opacity in the brush Settings. The selected region is now desaturated while all other areas remain untouched.

The use of this tool is not necessary in the editing of our example photo, but very much so for others containing blurred color streaks which leave the transitional region between foreground and background rather unsightly:

Before Desaturation After Desaturation

It can be seen in the images above that painting over the transitional region between the field and the sky has resulted in the successful allocation of undefined, half transparent pixels to the background and have thus been rendered transparent.

Feather Brush

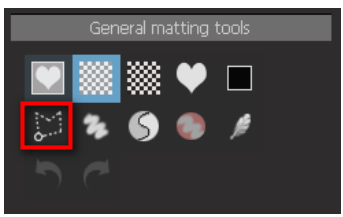
The Feather Brush allows the softening of specific regions and therefore for a noticeably smoother transition. Quite often the effects only become visible when the picture is magnified to a high degree. Adjust the Brush-Settings and simply paint over regions where a softer transition is desired.

IV.2.5 Allocating Regions to the Foreground/Background

Polygon Tool

Matting tools in the second row will undoubtedly prove especially interesting and useful: The polygon tool enables you to select and remove (that is to make transparent) any region of your image result or bring already transparent sections of the image back to the foreground. By clicking the SHIFT-Button, you can bring these selected regions back into the foreground (“+” Symbol located next to the polygon tool). By not holding SHIFT, you can move the areas already in the foreground to the background (“-“ Symbol next to the polygon tool).

When using the polygon tool and holding the STRG-Key, you can freely select regions without having to use the polygon tool selection functions.

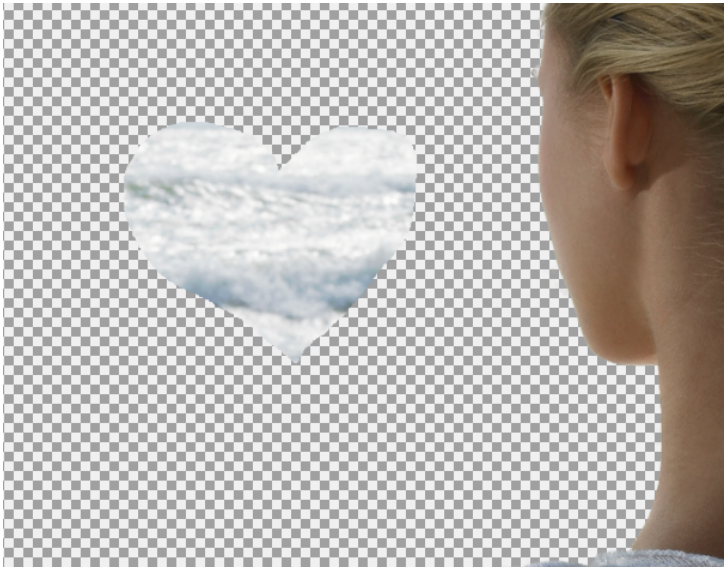


By this means, we can quickly and easily remove the streaks from the image in our application example. For this we will be using the polygon tool while making sure that the “-“-symbol appears next to the tool, given our aim is to remove objects from the foreground (and make them transparent) and not the other way around:

With one double-click the selection process is finished and the white streak we've selected disappears:

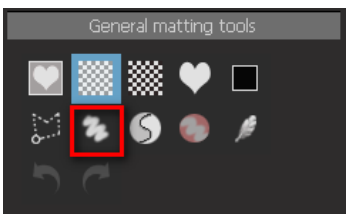
In order to be able to work more precisely, you can magnify the section of the image you are working on by increasing the zoom on your mouse-wheel or on the zoom level next to the Matting-Menu on the left.

In the same way it is possible to bring already transparent regions back to the foreground. Important here is making sure that the "+"-symbol appears next to the polygon tool (SHIFT-Key) when making your selection:

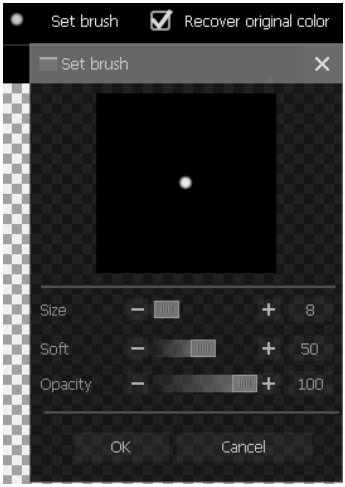


Free Paint Tool

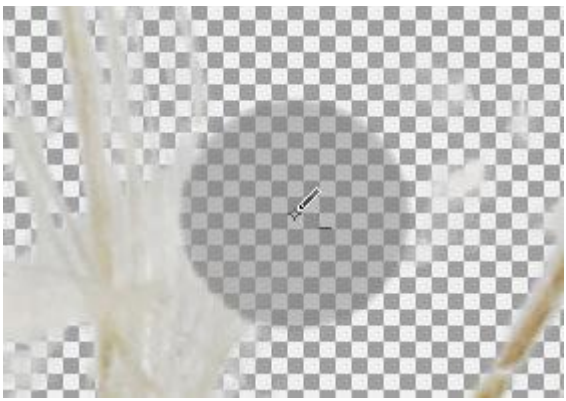
The Free Paint tool in the Matting-Menu functions using a similar principle—that is, you simply select the areas you wish to edit with a brush instead of with the polygon tool.



Select the Free Paint tool from the Menu and adjust the brush-settings near the top of the window:



In this window you can adjust the brush size as well the softness and the opacity. At a lower opacity level, selections will become half-transparent.

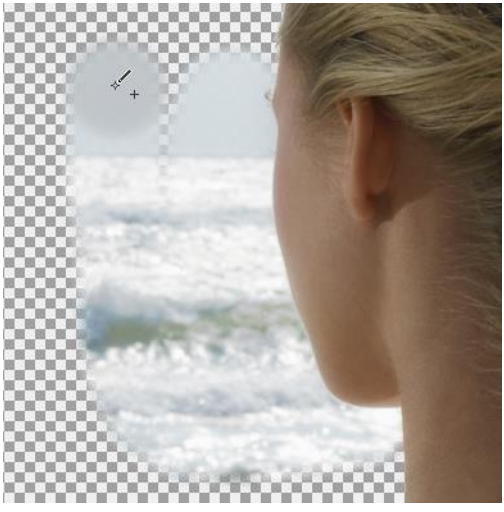


Same as with the polygon tool, holding or not holding the SHIFT-key allows you to bring the transparent background back into the foreground or move visible objects to the background.

In our example, removing the clouds can be done by holding down the SHIFT-key while painting over them. When doing this, the "-"-symbol should appear next to the **Brush-Tool.**

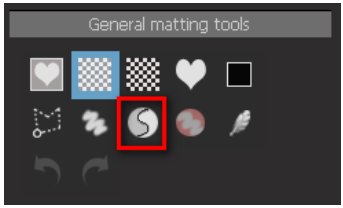
In this case, the opacity should be set to 100 since we do not just want to leave them partially transparent—we want them to disappear.

Regions already marked transparent can be brought back into the foreground by using the Painting-Tool on the "+" setting along with the ***Use Original Color*** function located next to the Brush-Setting window. The painted areas that are now transparent will thus be returned their original color.



Re-Matting Tool

The third possibility for allocating regions to the foreground or background can be found in Re-Matting. For this option, choose the icon resembling the Yin-Yang symbol in the Matting-Tools Menu.



This tool allows for the designation and allocation (to the foreground or background) of up to six color tones present in the foreground and background.

This tool is especially useful when it comes to Re-Matting of the edges of foregrounded objects—in other words, the space in-between the foregrounded object and the background.

After selecting the Re-Matting tool, click on an area in the foreground or in the background. When hovering your mouse over the image, the Pipette-symbol will either appear with an “F” next to it indicating the area as belonging to the foreground, or with a “B” for the background:

After the foreground and background colors have been selected, the tool will change into a Painting-tool. If you wish to include additional colors to your selection, hold down the SHIFT-key while making your further foreground and background color selections (up to six respectively).

When transferring to the painting stage, the Brush-Settings (Size, Softness and Opacity) can be adjusted accordingly and the Re-Matting process may begin:

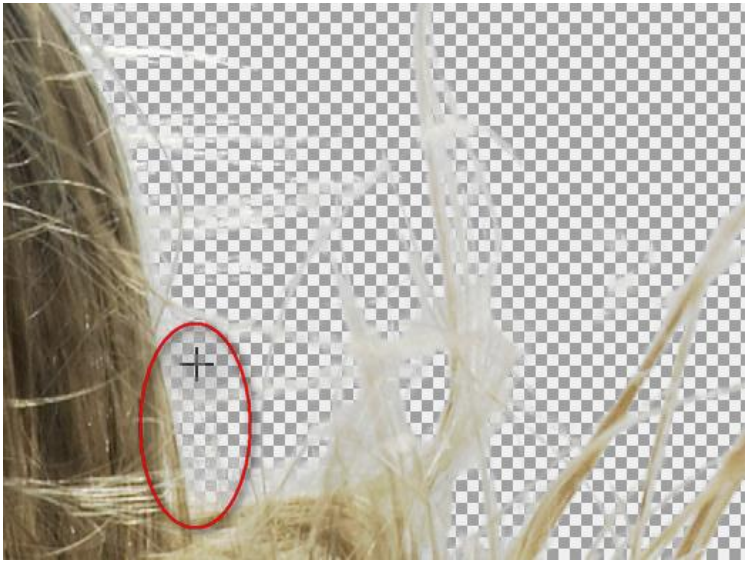
When using the Painting-Tool to make selections on your image, only the color tones you previously designated as foreground colors will remain, the rest will become transparent. Color tones designated as belonging to the background will remain transparent in the same way, leaving visible those colors having not made it into the background selection.

This method can help to optimize the appearance of elements in the transitional regions, that is when working in spaces between the foregrounded object and the background. With one right-click of the mouse you can reset your previous color tone selection.

After application of the Re-Matting tool on our example image, the following effects can be seen: After the simple Matting process using color selection there still remain several undefined areas in the area between the background (Ocean/Sky) and the foreground (the woman’s hair):

It becomes apparent that there are still a number of pixels in this transitional region that appear partially transparent. In order to more definitively allocate this pixel grouping to the foreground or background, we shall proceed in defining these by means of the foreground and background color tone selection using the Re-Matting tool:

It becomes apparent that there are still a number of pixels in this transitional region that appear partially transparent. In order to more definitively allocate this pixel grouping to the foreground or background, we shall proceed in defining these by means of the foreground and background color tone selection using the Re-Matting tool:



In the example above, the brush tool was dragged vertically from top to bottom within the red ellipse. When compared with the original image, you will notice that the unattractive streaks have disappeared in this area.

It is apparent that the “blurred” edges of the foreground and background objects have now been more clearly defined. After the complete Re-Matting process of the displayed region, the result appears as shown:

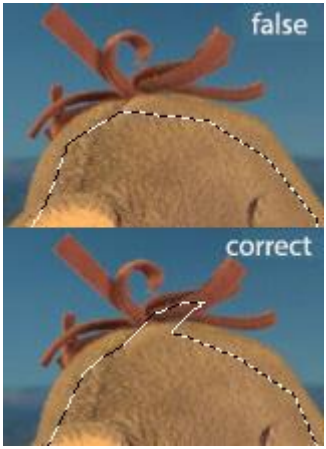
As can be seen in this image, these “undefined” areas were able to be cleared up substantially by the exact color definition and allocation to the foreground and background.

As can be seen in this image, these “undefined” areas were able to be cleared up substantially by the exact color definition and allocation to the foreground and background.

IV.3 Additional Tips for cropping complicated Objects

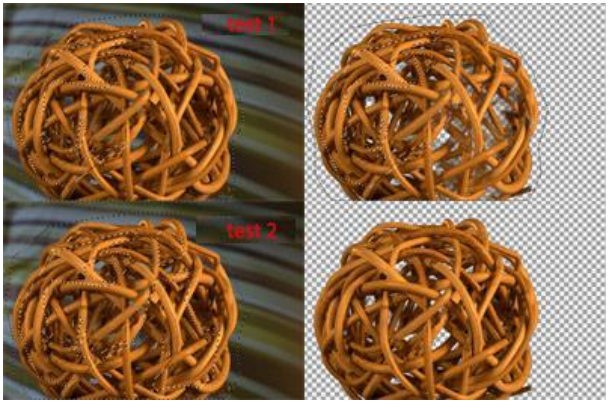
IV.3.1 Close to the edge or farther out?

When areas of your object exhibit intricate color patterns or are structurally complex, this calls for an outline selection that is as precise and as close to the edge as possible. If the object is rather simple and well-defined, a rough outline selection will suffice.



IV.3.2 Cropping Complicated Objects

You may go about doing this by designating a rough outline selection and cropping the object simply using this method. Check the result for imperfections. If either the foreground or background happens to be rendered partially transparent, the polygon tool's **Addition** or **Subtraction Mode** can be used to insert patterns in addition to any other methods possible with the various Matting-tools mentioned in the previous chapter. Following this, repeat the Matting process until you are content with your result. The Syringe-tool can also prove quite useful in working with complicated objects.



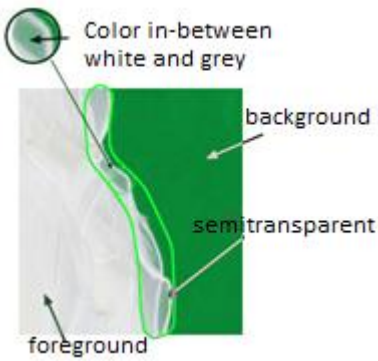
V Digital Matting: Good to Know

Matting is understood as the process in which the foreground and background are separated within an image. In order for this to be realized, one must generally follow a number of fundamental steps.

- The edges of the foreground must be defined
- Opacity Levels have to be determined (*transparent, semi-transparent or opaque)*
- Inverse Calculation of the original color tone of semi-transparent pixels

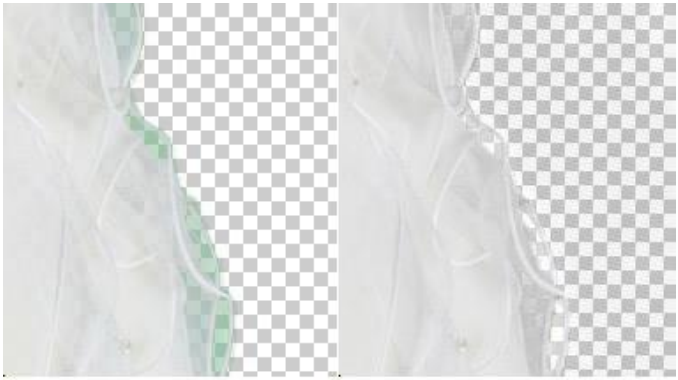
Why are the calculations involving semi-transparent pixels made inversely?

An explanation can be found in the following example:



The pixels located in the semi-transparent area appear white in the original photograph. Since these are semi-transparent, the green hue of the background is mixed with the white pixels.

When the object is cropped and placed in front of a new background, this pixel grouping shows a green shimmer. This effect can be avoided through the inverse calculation and the resulting reinsertion of the original color tone into semi-transparent border region of the object:



without inverse calculation with inverse calculation

V.1 General Information concerning Matting Technology

Standard Method

The simplest method when it comes to cropping involves marking the foregrounded object and removing it from the image. One problem with this procedure is the fact that semi-transparent pixels are not taken into account when the object is removed.

Advanced Tools

Advanced Tools such as the magnetic lasso are also available for use, however the same problem arises as in the standard outline selection method—that is, the semi-transparent pixels are not included in the cropping procedure.

V.2 Chromakey Matting

This procedure finds its origins in the video-editing sector and was used to crop objects situated primarily in front of green or blue backdrop while being filmed or photographed. All pixels possessing a color other than that of the background were allocated to the foreground.

When using this method, it is assumed however that objects in the foreground are not transparent. For example, photographing a translucent article of clothing against a chroma key background would result in the object appearing to have a blue or green tint, this also when placed in front of a new background. This aspect of the chroma key process yields a seemingly unnatural outcome and can be easily compared with stunt scenes from early action movies shot using green-screen.

This method tends to be very useful, however it has two requirements:

- The background color cannot be present in the foreground. If it does happen to appear in the foreground, it will be allocated to the background and therefore be rendered transparent or semi-transparent.
- The background must be uniform in color. Differences in the background color will not be accounted for and will thus be added to the background selection.

Chroma Key technologies are for this reason used predominantly in professional environments.

V.3 Inside/Outside Edge Matting

With regards to the previously mentioned limitations attached to the Chroma Key Matting process, an alternative Matting method is required. This new method should have no limitations on background color, be able to support semi-transparency and simple to use.

The procedure *"Inside/Outside Edge Matting"* fulfills these criteria and serves as an appropriate solution for the majority of photo-editing projects.

This method of cropping incorporates the definition of the inside and outside edges of an object. The selection of an inside outline is made by marking an area inside the object that is to be cropped. When making this selection, it is important to make your selection as close to the inside edge as possible.

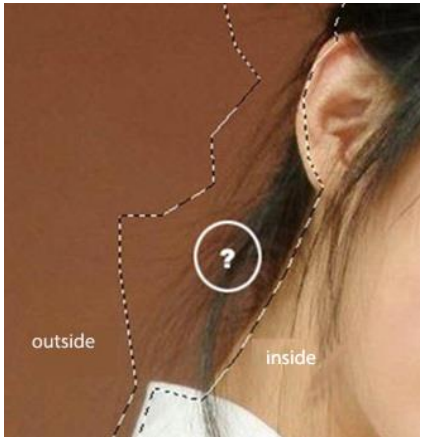
Following this step is the selection of the outside outline which is to be drawn as close to the outside edge as possible. The space in-between these two selections is the semi-transparent region.

Due to the fact that the program is never able to exactly identify the individual color values, the first stage of editing can tend to contain errors.

Common Error Examples

1. The exact recognition of the difference between the foreground and background can even prove difficult for the human eye:

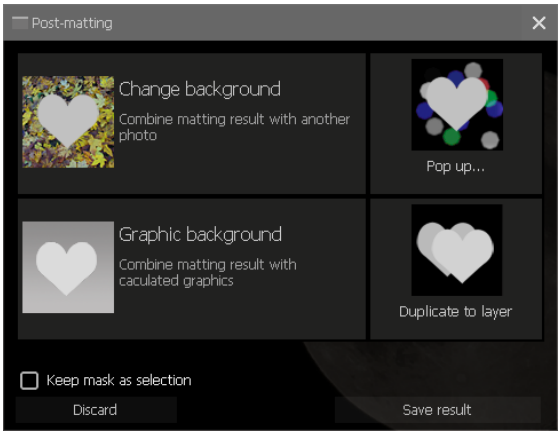
2. The program attempts to calculate the difference in the background and foreground colors. However, when numerous differences make the foregrounded object less distinguishable from the background, errors can occur in the calculation.


?
outside
inside

VI The Post-Matting Menu

After you have completed the Matting stage and optimized your cropped result with the help of the various Matting-tools available, there is nothing holding you back from continuing to the next stage of editing. If the Matting result reflects your desired outcome, click on the *Apply* button in the Matting-Menu.

Following this the Post-Matting Menu will appear:



This Menu offers the following options:

- **Change your Background Image:** This option allows you to place your previously cropped object in front of a new background image of your choice. For example, you can “change the location” of your newly cropped object.
- **Background Blur:** Choosing this function will switch the program to its soft focus mode**.** This mode allows you to very selectively and variably designate areas of the background you want to appear soft, or slightly blurred. The background remains and this layer is the only effected

by this de-sharpening function. This function allows you create an authentic depth of focus in all your projects.

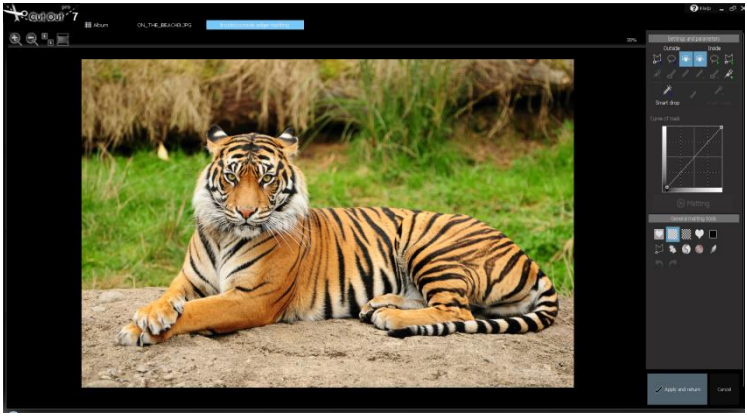
- **Duplicate to Layer:** This function allows for the cropping result to be designated as its own layer and added to the user interface. At this stage, you have the options of either saving your Matting project or continuing working making use of the numerous editing possibilities and effects available to you in ***CutOut 7***.

- **Layer Separation:** This function can only be activated when working with a base layer and saves both the foreground and background as their own layers.

- **Delete Layers:** This option is only available for use when working with layers other than the basis layer. The background is deleted and only the cropped object will remain as its own layer.

In addition to these options, choosing the option *Save Result* will allow you to save your Matting result to any location of your choice in either .png or .psd format.

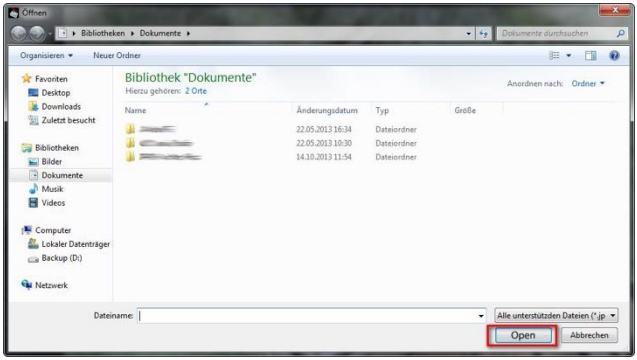
VI.1 Changing the Background Image



This image of a tiger in the wilderness will serve as our example image.

To relocate this tiger to a place with a rather cooler climate, we will choose the option *Change Background Image* in the Post-Matting Menu following the completed Matting process.

The File Browser should open from which the preferred alternate background image may be chosen for our tiger:

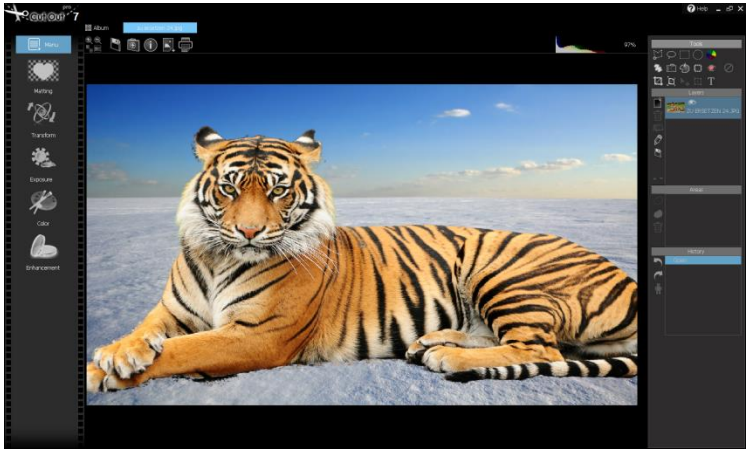


Navigate your way to the new background image, select it and click *Open.*

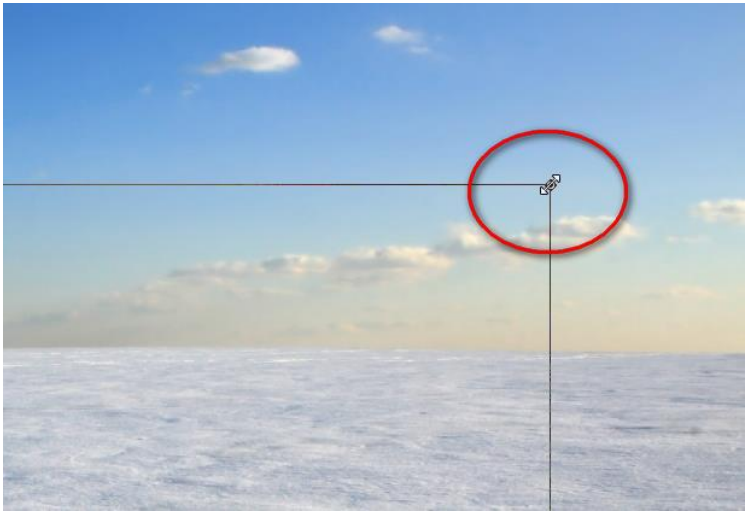
Now a dialog will open, in which you can adjust the size of the background image individually. You can choose between *auto, as original size of the working surface* and *as new size of the background layer.* To choose another background layer, click on the button ....

To save your settings click on *OK*, to cancel the process click on *Cancel*.

The cropped object will now appear in front of the new background image:

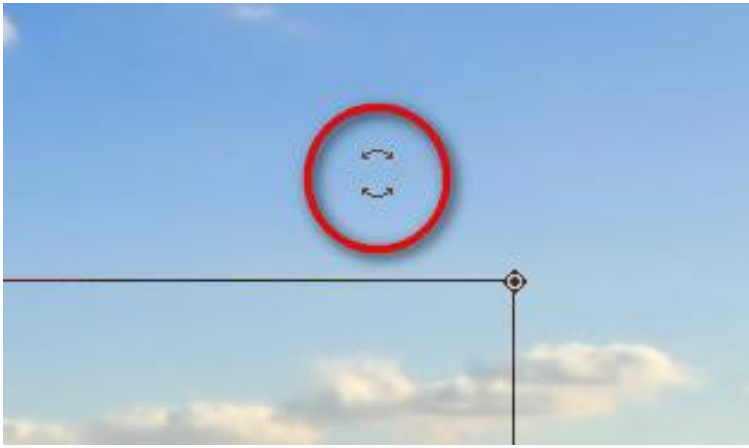


Clicking on the image while holding down the mouse button allows you to drag the object anywhere in the picture you would like. Adjusting the object's placement in the image also reveals its edges, and with these the size of the image may be increased or decreased by dragging the mouse is the direction of the arrows located in the corners:



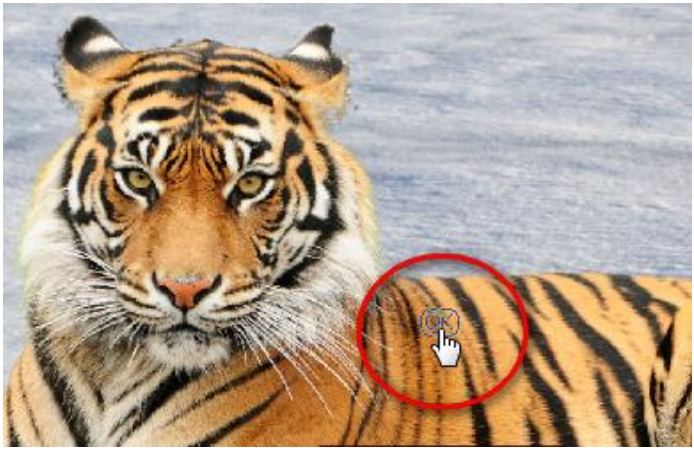
Hold down the left mouse button and move the mouse in order to adjust the size.

When you move your cursor outside of the edges of the image, the following symbol will appear:

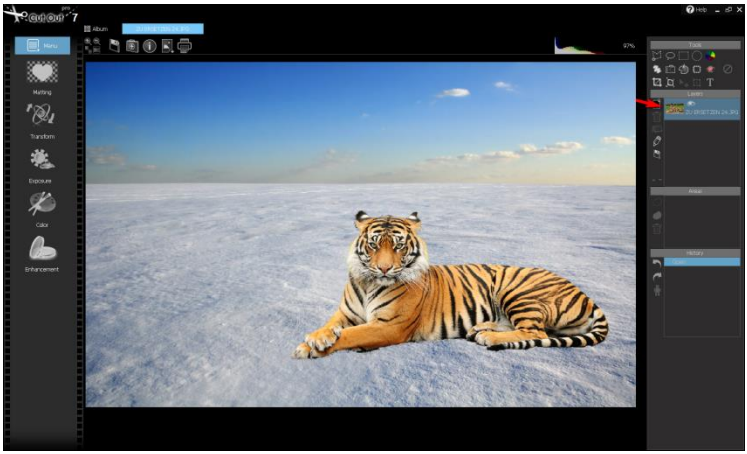


Holding down the mouse button and moving it will allow you to rotate the object to any preferred angle. The tiger could thus theoretically be placed upside down.

When the size, angle and position of the objects have been adjusted to your content, click on the “OK”-button in the middle of the screen:



The adjusted image now appears in the main editing menu:



The tiger has now been reduced in size and relocated to the right of the image. The cropped image, or the tiger in front of the transparent background, is now available under the *layers* tab (see the red arrow in the picture). This means you can continue editing

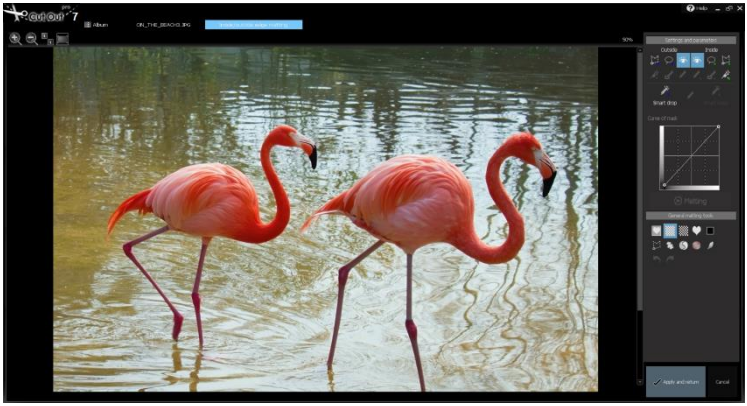
with the cropped object however you would like until the best result is achieved.

Displaying the tiger without its background image can be done by deactivating the background layer with one click of the “Eye-Symbol”:

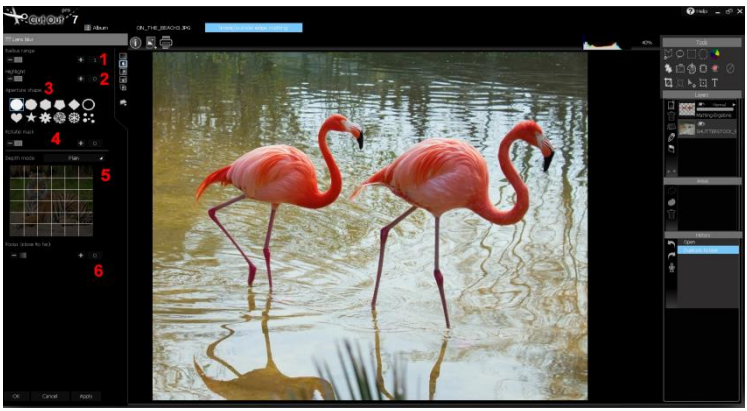
VI.2 Background Blur

More often than not, you tend to experience the following problem when taking pictures: Your photograph shows an object, a person or an object, on which the focus should be directed. However, the background as well as the object in the photograph both appear in focus. In this case, it can prove useful to leave certain areas of the background out of focus in order to highlight the sharper objects in the foreground. The depth of focus of the background must therefore be altered. The function ***Background Blur*** in the Post-Matting Menu should help you accomplish this.

In this image, the target objects are the two flamingos situated in the foreground. However, the background also appears in focus. In order to more effectively align the focus on the flamingos in the foreground, the background should be slightly de-sharpened.



After choosing the option *Background Sharpness* in the Post-Matting Menu, the **Lens Blur Menu** will appear:



(1) ***Radius Range:*** Here you can designate the radius range of the Lens Blur effect by slide control. As you will see, selecting a higher value will strengthen the effect of the Softening Effect on the background.

(2) ***Highlight:*** Adjusting the slide control *Highlight* determines to which degree bright areas in the background area highlighted. In our example image these would be the bright patches on the water reflecting the sky. Choosing a higher value on the slide control will emphasize these even more.

(3) ***Aperture Shape:*** Here the lens shape can be altered to vary the type of Softening Effect. Give each lens a test until you find the one that suits your project best.

(4) ***Mask Rotation:*** This function allows you to change the direction of the Soft Focus effect by 0 to 360 degrees.

(5) ***Depth Mode:*** When using the *Depth Mode* function, you can alternate between Simple, Horizontal or Tunnel mode.
Selecting the Plain setting will deliver an evenly distributed Softening Effect across the entire background.
The Horizon effect will allow you to distinguish regions of the background closer to the foreground from those further away by adding varying levels of softness.
Choosing Tunnel enables specific regions of the background to be softened.
The grid located beneath can be used to quickly determine regions of the image that are to remain in

or out of focus as well as the position of the horizon when in *Horizontal* mode.

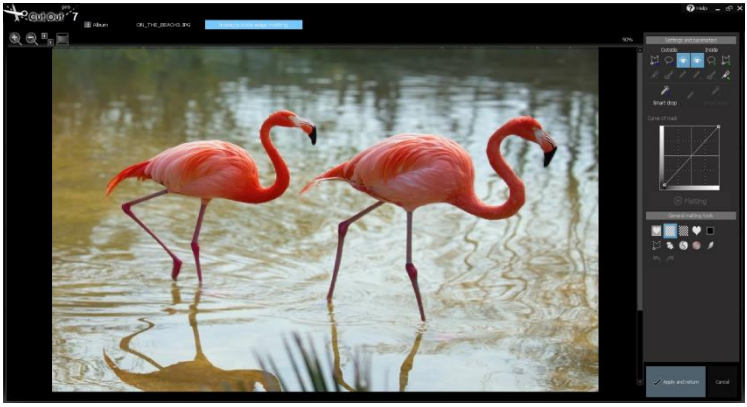
In our example photograph, we have chosen the *Horizontal* setting to leave the closest region of the background (the area in front of the flamingo's legs) in focus and the space further behind slightly blurred. The grid view helps to determine at which distance the background should be softened:

Play around with this mode to become acclimated with the various functions and effects.

(1) ***Focus (close to far):*** Adjustment of this slide control allows for a reversal of the current depth settings. The depth settings of our example image were determined with the help from the *Horizontal* depth mode. The areas closer to the foreground were left in focus while those in the background were made softer, or slightly out of focus. An adjustment on the ***Focus*** slide control from 0 to 100 would completely reverse these settings

leaving the foreground out of focus and the background sharp.

When you are satisfied with your depth settings, click on *Apply* and thereafter on *OK.* The editing process of our example image has yielded the following result:



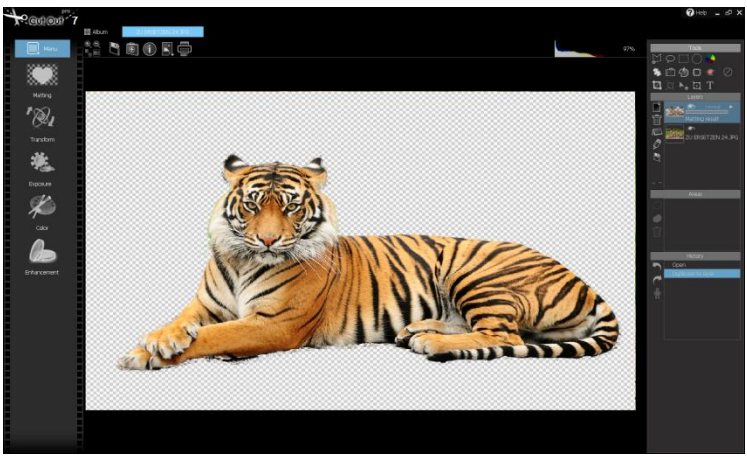
As can be seen in the photograph, the area of the water in front of the Flamingos has been left in focus while the background region behind them has been softened, or left out of focus.

The object cropped from the image (the two flamingos with transparent background) are now available as their own layer. This means you can continue editing them in the case that you are still not completely satisfied with your Soft Focus edits.

In order to display the flamingos without the background, simply deactivate the background layer by clicking on the “Eye-Symbol”:

VI.3 Duplicate to Layer

Choose the option *Duplicate to Layer* in the Post-Matting Menu to continue editing or to save the cropped object to its own layer. Unwanted changes to the background image or the depth settings are easily bypassed by doing this.



VI.4 Layer Separation and Background Deletion

The functions *Separate Layers* and *Delete Layers* cannot be chosen after an object has been cropped form a base layer. These two functions may only be applied when a *Float-Layer* has been edited in the Matting-Menu. A *Float Layer* is a layer that has been created from a base layer, for example when a selection has been made and copied from a base layer and then added to its own layer.

The function *Split Layer* separates the foreground image from the background image and creates two individual layers. The first layer contains the Matting result and the other the rest of the original image, of course with a hole from where the object was cropped.

The function *Delete Background* creates an individual layer for the newly cropped object and deletes the remaining background of the original image. Should you only need the cropping result and not the background, this option is the right choice.

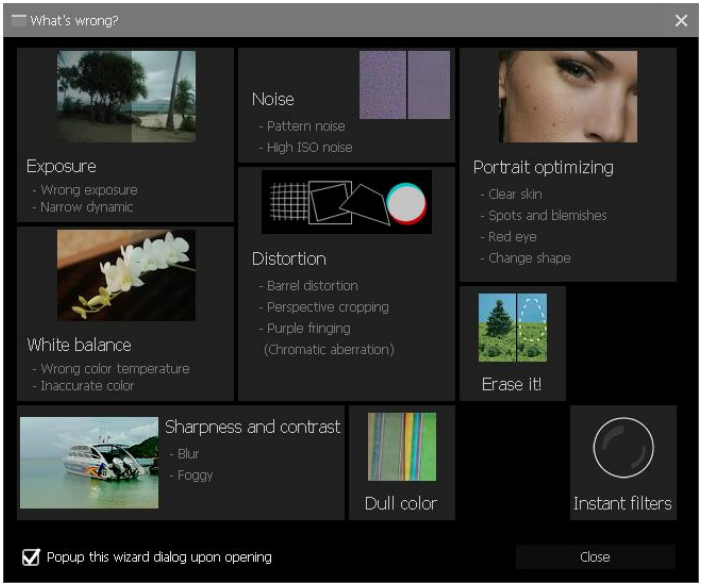
VII Photo Editing

In addition to the numerous object cropping possibilities previously described, ***CutOut 7*** also provides access to a wide array of editing solutions for photos and cropping objects. You can optimize your image results with the diverse selection of effects and filters available to you as a ***CutOut 7*** user.

To edit images, select those you would like to edit from the Album Mode and click on the tab above labeled *Edit.*

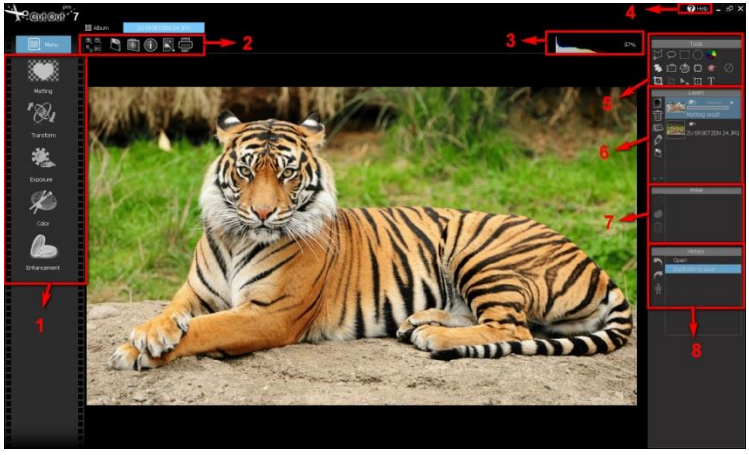
The image will now be opened in Editing Mode.

Image Assistant will now appear on your screen:



This Menu makes it easy to quickly find the right editing function for your specific project type and offers efficient solutions to an array of common problems. All functions located in this menu can also be found in Editing Mode, thus we can now close the Image Assistant and continue with a step-by-step introduction of each of the functions. If you would like for the Image Assistant not to appear after opening Editing Mode, simply uncheck the box in the bottom left-hand corner labeled ***Pop up this wizard dialog upon opening.***

VII.1 Editing Mode – Overview



(1) *Editing Functions:* The editing functions Matting, Transform, Lighting, Color and Enhancement are further divided into different editing components and tools which will help you to optimize your image result. You can choose the editing function best suited for your project needs from this menu. Clicking the button *Menu* will allow you to select from all the editing options as well as further adjust various program settings, such as the language preferences.

(2) *Additional Functions:* By clicking on the various symbols displayed in box two, you can either adjust the display scale of your image, save the image (floppy disc symbol), activate the Image Assistant (doctor's kit), display the image information (Information symbol), create a new layer from an image (photo symbol) or print your image (printer symbol).

(3) *Histogram:* This region displays the histogram of the current layer. The percentage amount on the right denotes the zoom level. Clicking on this percentage will allow you to change it.

(4) *Help:* Refers you to this manual.

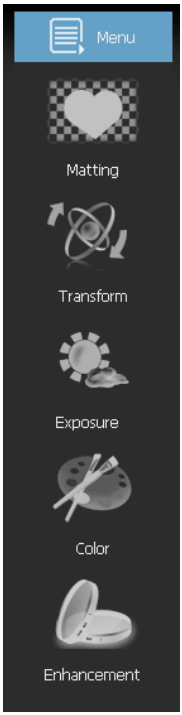
(5) *Tools:* Here you will find the selection tools for specifying regions of the photograph for editing in addition to various other useful editing tools.

(6) *Layers:* In the Layers-Window you can view all available layers. You can also delete, add, rename, relocate as well as adjust opacity levels and merge layers in this window.

(7) *Areas:* Here you can take the selected regions made with the selection tool and create a mask to be used on any layer of your choice.

(8) *Project History:* This window displays the previous changes made to your project, therefore allowing you to undo steps or retrieve specific elements. The chronology of work steps in your project can be saved as a **Scheme-File** and applied to any number of additional photos via batch processing with one click on the Robot-symbol.

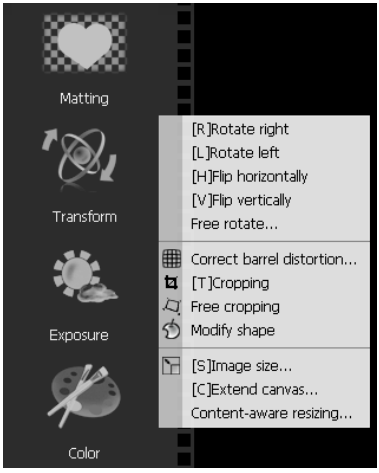
VII.2 Editing Mode – Detailed View



VII.2.1 Matting

Please refer to the previous chapters of this manual for detailed explanations pertaining to matting and the matting process in ***CutOut 7***.

VII.2.2 Transform



The function *Transform* enables you to rotate, crop, flip horizontally or vertically and alter the canvas and image size or form of your image.

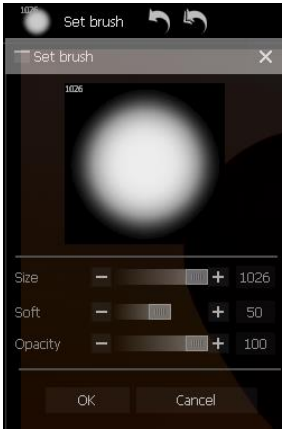
The (base layer) free rotation function allows you to rotate this layer to whichever angle you prefer. You can also optionally determine whether the image should be automatically cropped:

This function can only be applied to the base layer.

Correct Barrel Distortion enables you to compensate for convex or concave distortions within your picture, or if you wish, even create them:

With ***Cropping*** you can select an area in the image that will later be cropped out. By doing this, you can easily refer back to initial settings such as the aspect ratio.

Modify Shape gives you the ability to distort elements of your project at specific points in the image with a brush tool. The size and strength of the brush can be adjusted in the brush-settings at the top of the Image Menu.



With the **Image size** settings, the height and width of the photograph can be determined as well as additional settings involving size definition. As a form of resampling procedure, you have access to relatively complex algorithms for image size recalculation.

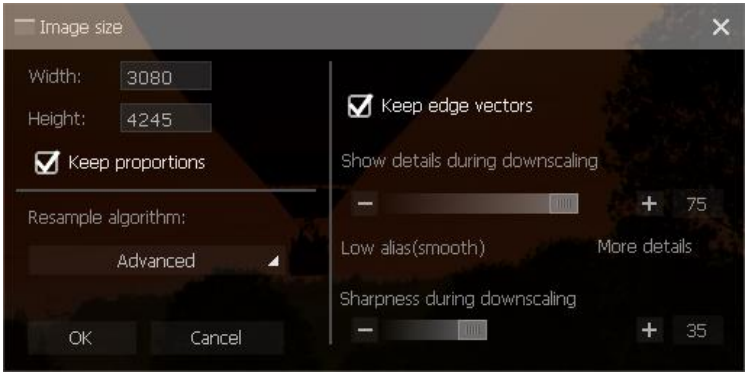


Image size
Width:
3080
Height:
4245
Keep proportions
Resample algorithm:
Advanced
OK
Cancel
Keep edge vectors
Show details during downscaling
75
Low alias(smooth)
More details
Sharpness during downscaling
35

By using the function **Free Cropping,** you don't just have to crop your images with a rectangular frame—you also have the option to relocate any of the four corners to form a new shape and better crop your object:

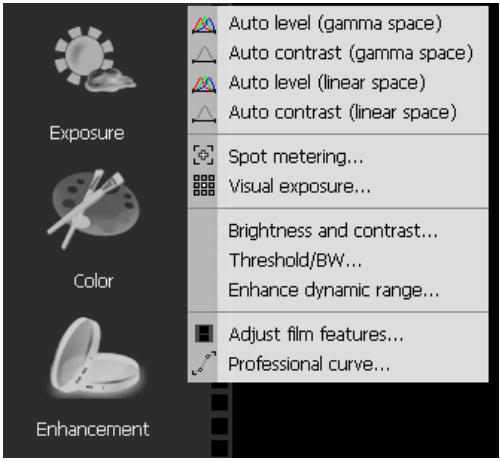
Once you have adjusted the anchor points to your liking, click on *OK* and your result will be updated.

The feature **Content-aware resizing** enables you to change the height and width of your photograph. It is also possible to edit with presets or individually change your photograph.

VII.2.3 Exposure

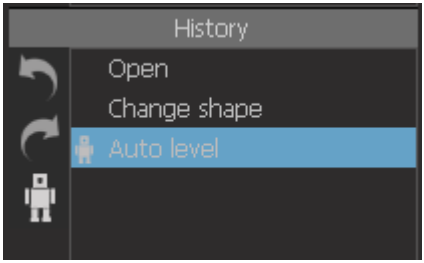
More often than not exposure levels in photographs tend to be less than optimal, either over-illuminated or underexposed. Classic examples are photographs shot under backlit conditions or in dimly

lit areas. ***CutOut 7*** offers appropriate solutions to just these problems with its collection of exposure tools.



The functions ***Auto-Level (Gamma space), Auto-Contrast (Gamma space), Auto-Level (linear space)*** and ***Auto-Contrast (linear space)*** enables you to automatically optimize the exposure in your photographs with regards to their Contrast (Auto-Contrast) and tonal value (Auto-Level). The option ***Gamma space*** automatically optimizes these as a Gamma-Function and the option ***Linear Space*** as a linear function.

Should your photographs not be optimally lit, you can make improvements to the brightness levels in your image with these functions. If the result still doesn't meet your standards, simply go back a step with the ***Undo*** option in the Project History Window:



If you have adjusted the brightness and contrast settings to your liking, click on *OK,* otherwise hit *Cancel.*

Now moving to the ***Threshold/BW*** function: This function transforms your image black-and-white and allows for the specification of additional settings and characteristics.

The slide control ***Threshold*** determines whether areas will appear black or white depending on their threshold values. For example: When a high value is selected, or when the slide control is dragged far to the right, even brighter regions of the original image will appear black and only very bright regions will remain white. The opposite effect can be seen when the slide control is dragged far towards the left: Relatively dark regions will in this case appear white and only very dark regions will remain black.

The slide control ***Transition Level between Black and White*** determines the amount of gray tones found in-between the pure white and pure black color tones. If you wish for an outcome explicitly made up of black and white tones, leave the value on the slide control at zero.

The slide control labeled ***Size of Adaptive Area*** will only become active after selecting the option ***Adaptive Threshold*** under the ***Methods*** tab above. There is no global or definite threshold when using the ***Adaptive Threshold*** method, rather there exists a wide array of local thresholds. The slide control is used to determine the size of these local regions, for each of which an individual threshold is determined.

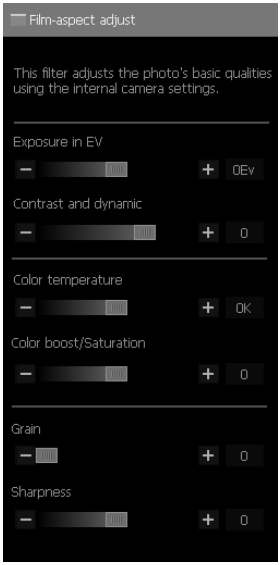
In addition to the defined and adaptive threshold options, preset methods are also available under the ***Diffuse*** *and* ***Halftone*** options.

Available are once again the following display options:

The button containing the two ones will display the image in its actual size, that is with a 1:1 ratio; The next symbol to the right fits the image size to the program window; The lightning bolt symbols on the left side allow for layout adjustment of the Preview Display. Lastly, the symbol at the bottom left merges the before and after versions of the image.

If the adjustments to your image meet your preferences, click on *OK* to apply the changes. If you haven't reached the desired outcome with the changes made, click *Cancel.*

The function ***Adjust Film Features*** simulates internal camera settings for adjusting the photo according to its fundamental characteristics.



Adjustment of the slide control ***Exposure in eV*** determines the global exposure value. This value can be increased by dragging the slider to the right and decreased by dragging it towards the left.

The slider ***Contrast and Dynamic*** controls the shadow and light levels within the image. High values brighten the darker, shadowy areas and darken areas that are brightly lit in the photograph. Please note that the dynamic range settings can be further adjusted and refined to incorporate different shadow/light values by selecting the function ***Dynmic Range Enhancement*** found under the Exposure-tools.

The ***Color Temperature*** slider determines whether the image is displayed either cool or warm color tones. In other words, the image will appear with either a blue or red tint.

The ***Color Boost/Saturation*** slider enables you to adjust the saturation levels in the image. Increased values will strengthen the intensity of the colors in the picture while lower levels will reduce color intensity. A value of zero will automatically render the image colorless, or in gray-scale.

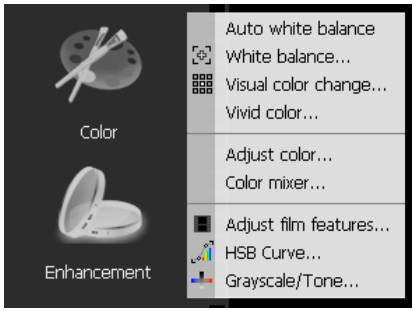
The ***Grain und Sharpness*** slide controls allow you to create a high point and sharpen the image.

Available are once again the following display options:

The button containing the two ones will display the image in its actual size, that is with a 1:1 ratio; The next symbol to the right fits the image size to the program window; The lightning bolt symbols on the left side allow for layout adjustment of the Preview Display. Lastly, the symbol at the bottom left merges the before and after versions of the image.

If the adjustments to your image meet your preferences, click on *OK* to apply the changes. If you haven't reached the desired outcome with the changes made, click *Cancel.*

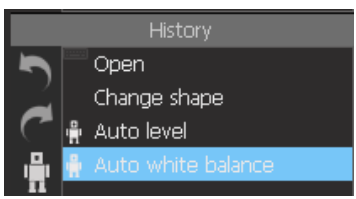
VII.2.4 Color



With these color editing tools, you can make any color correction to your image imaginable. Some of the tools introduced in this section have been previously dealt with in the *Exposure* chapter.

Automatic White Balance lets you leave this task up to ***CutOut 7***. This function automatically adjusts the color temperature of light in your image.

Should your result not be exactly as wished, simply click on ***Undo:***



If the automatic ***White Balance*** function doesn't deliver the optimal result, simply choose the ***White Balance Tool*** to apply it by hand. Now click on an area of the photograph that you want to appear white or gray. The white balance is applied immediately and your result should appear in the preview window.

Available are once again the following display options:

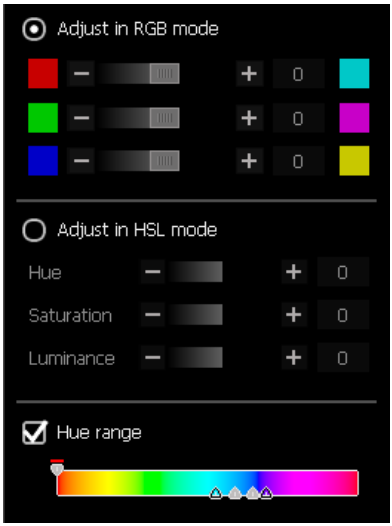
The button containing the two ones will display the image in its actual size, that is with a 1:1 ratio; The next symbol to the right fits the image size to the program window; The lightning bolt symbols on the left side allow for layout adjustment of the Preview Display. Lastly, the symbol at the bottom left merges the before and after versions of the image.

If the adjustments to your image meet your preferences, click on *OK* to apply the changes. If you haven't reached the desired outcome with the changes made, click *Cancel.*

The ***Visual Color Change*** tool was previously introduced in the *Brightness Tools* chapter. Please refer to this chapter more for information about this function.

The function ***Adjust Color*** allows you to individually adjust the color scheme of any one of the images. Before proceeding, you can choose to edit using either RGB or HSL. Options in the ***Hue Range*** bar make it possible to exclude specific tonal ranges from being

affected by further changes. These can be defined by adjusting values along the slide control.



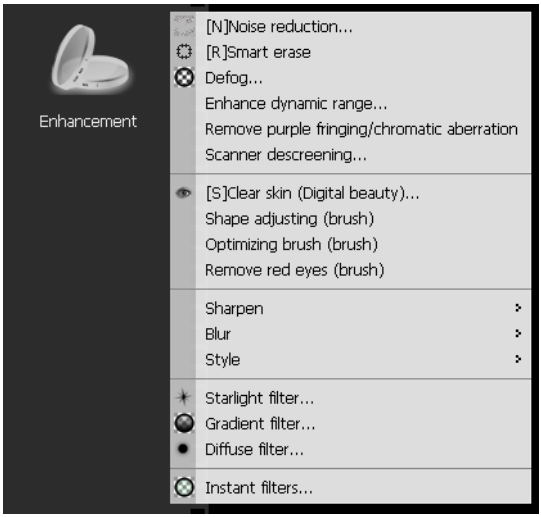
Available are once again the following display options:

The button containing the two ones will display the image in its actual size, that is with a 1:1 ratio; The next symbol to the right fits the image size to the program window; The lightning bolt symbols on the left side allow for layout adjustment of the Preview Display. Lastly, the symbol at the bottom left merges the before and after versions of the image.

If the adjustments to your image meet your preferences, click on *OK* to apply the changes. If you haven't reached the desired outcome with the changes made, click *Cancel.*

The ***Adjust Film Features*** function was introduced already introduced previously in the manual. Please refer to the chapter covering the various exposure tools and functions for more information.

VII.2.5 Enhancement



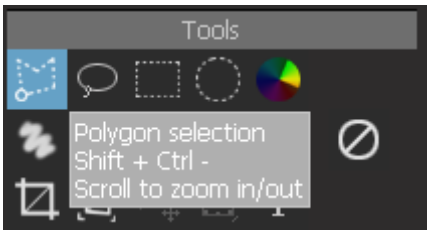
These ***Enhancement Tools*** deliver plenty of possibilities to optimize your image, remove flaws and make necessary corrections.

Available are once again the following display options:

The button containing the two ones will display the image in its actual size, that is with a 1:1 ratio; The next symbol to the right fits the image size to the program window; The lightning bolt symbols on the left side allow for layout adjustment of the Preview Display. Lastly, the symbol at the bottom left merges the before and after versions of the image.

If the adjustments to your image meet your preferences, click on *OK* to apply the changes. If you haven't reached the desired outcome with the changes made, click *Cancel.*

The ***Smart Eraser*** in ***CutOut 7*** automatically removes obstructions in your image. First, the image regions containing the flaws you wish to fix must be designated using one of the selection tools. From the *Tools* window, choose your mode of selection and trace the area containing the flaws click-for-click and finish with a double-click:



In our example case, a distracting stone is to be designated with the selection tool and removed from the ground floor:

After selection, the ***Smart Eraser*** tool is chosen; this tool is also available in the selection menu represented by a small circle-symbol:

Here is our result:

The stone has thus been “intelligently” removed and the remaining hole filled with the surrounding ground pattern.

This function is well suited for removing distracting folds in clothing or skin impurities when editing portraits.

Available are once again the following display options:

The button containing the two ones will display the image in its actual size, that is with a 1:1 ratio; The next symbol to the right fits the image size to the program window; The lightning bolt symbols on the left side allow for layout adjustment of the Preview Display. Lastly, the symbol at the bottom left merges the before and after versions of the image.

If the adjustments to your image meet your preferences, click on *OK* to apply the changes. If you haven't reached the desired outcome with the changes made, click *Cancel.*

The ***Shape Adjusting brush*** allows for the free distortion of your image. Using the brush-tool, simply hold down the left mouse button and glide your cursor across the image. Brush-settings can be further adjusted in the window on the upper left-hand side of the screen.

Available are once again the following display options:

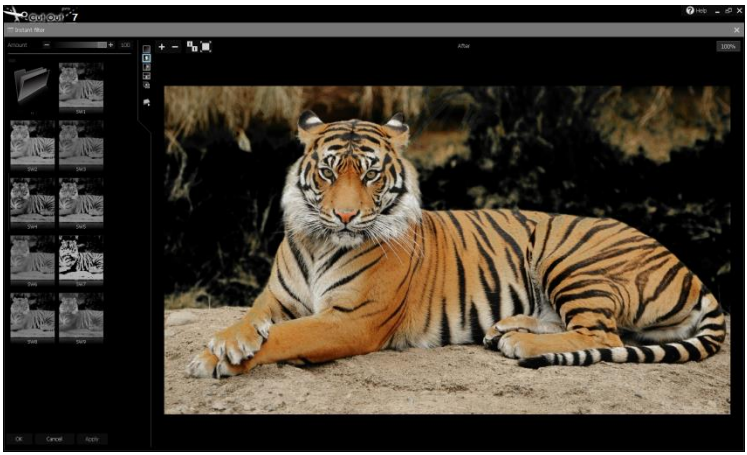
The button containing the two ones will display the image in its actual size, that is with a 1:1 ratio; The next symbol to the right fits the image size to the program window; The lightning bolt symbols on the left side allow for layout adjustment of the Preview Display. Lastly, the symbol at the bottom left merges the before and after versions of the image.

If the adjustments to your image meet your preferences, click on *OK* to apply the changes. If you haven't reached the desired outcome with the changes made, click *Cancel.*

The ***Optimizing Brush*** tool is almost identical to the ***Smart Eraser tool*** introduced in this chapter. However, with this tool, selections of regions containing elements in need of improvement are not made with one of the various selection tools, rather with the brush tool.

Sharpen offers many possibilities for sharpness enhancement. The ***Sharpen*** function automatically sharpens the entire image. ***Shrink Edge*** automatically recognizes and reduces all edges, in turn also sharpening the photograph. ***Texture sharpening*** enhances the overall structure of the image.

CutOut 7 offers an additional collection of filters which can applied to your images.



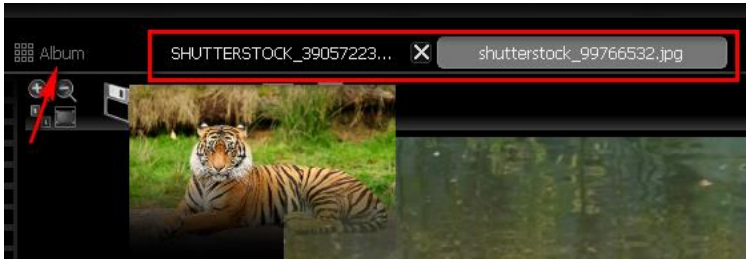
Instant Filters: Quickly and easily adapt and optimize all your photos with the ***Instant Filter*** collection. Clicking on any of the filters at the left will display your image with this filter as a preview. *Apply* will adopt the filter effect you've selected.

The button containing the two ones will display the image in its actual size, that is with a 1:1 ratio; The next symbol to the right fits the image size to the program window; The lightning bolt symbols on the left side allow for layout adjustment of the Preview Display. Lastly, the symbol at the bottom left merges the before and after versions of the image.

If the adjustments to your image meet your preferences, click on *OK* to apply the changes. If you haven't reached the desired outcome with the changes made, click *Cancel.*

VII.3 *Editing Mode – Additional Tips*

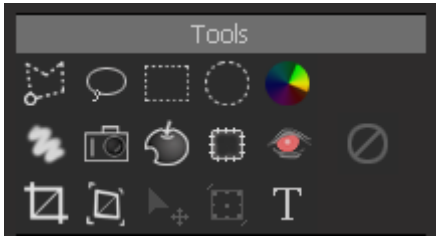
In ***CutOut 7***, you have the ability to simultaneously open multiple images for editing. To do this, select an additional image from the *Album* folder and click on *Edit* after opening the first in Editing Mode.



VII.3.1 Tools

On the right side of the Menu in Editing Mode, you'll notice four different windows labeled *Tools, Layers, Areas and History***.**

You have the following options from the tool collection at your disposal:



The first row contains the selection tools used to designate individual regions within your images. These include the polygon tool, the Free Selection tool, the rectangle and circle tools as well as the Color Selection tool—used to designate regions according to their color tones. After selecting the polygon tool, for example, click on the desired region and end your selection with a right-click of the mouse. You can continue editing this selection with any of the additional Editing tools at your disposal. In the area surrounding your selection, a dropdown will appear providing you with further editing options:

You will find the following tools in the tools window (listed from left to right):

- ***Free Paint Tool:*** This tool allows you to paint in any color you wish. Furthermore, the brush settings can be adjusted at the top of screen.

- ***Camera paint/Copy Pixels:*** Once you have chosen this tool, determine the brush settings to your liking at the top of the screen. Now, click on any point in the image you wish to serve as the pixel source. This pixel grouping will be copied wherever you paint throughout the picture. This tool serves as an appropriate solution for improving or fixing imperfect areas in your image with like-natured pixel groupings.

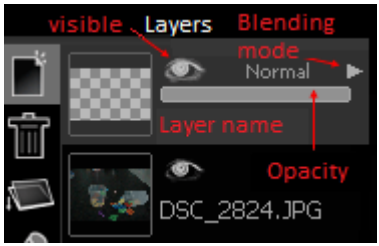
- ***Adjust Shape:*** This tool, represented by the apple-symbol, enables you to distort your image by simply painting over desired areas.

- ***Smart Eraser Tool:*** Select this tool and paint over a region you wish to improve. This area is enhanced according to the properties of the immediate surroundings. Just like that you can quickly and easily remove small imperfections and problem areas within your image.

- ***The Red-Eye Tool:*** Select this tool and paint over areas containing red-eye to easily remove the red cast.

In addition to the cropping and trimming options mentioned in the chapter covering the various transformation functions, you can use tools from the third row to add text to your images. To do this, first click on the area in which you want the text to appear. Following this, the text settings menu will appear where you can format the text and select the font. Your text input will appear as its own layer in the *Layer* window allowing for it to be edited and transformed or for filers to be applied, just as any other layer type.

VII.3.2 Layers



The *Layers* Window displays all layers available for editing. Opening an image in Editing-Mode will result in that image being the only layer available for editing. Once text is added, image regions are copied or cropping results are created, these will all appear in the *Layers* section and can be further selected or edited with one click of the mouse.

The left side of the *Layers* window contains the options regarding the addition of new layers, the deletion and merging of selected layers as well as renaming and saving functions for existing layers. The two small arrows are the bottom allow you to change the order in which the layers appear. Layers situated “higher” on the list will cover layers lower down. The keyboard combination *STRG + C* and *STRG + V* allows for layers to be copied and pasted, in other words duplicated.

After selecting a layer, clicking the eye-symbol will either show or hide this specific layer. The tab below controls the opacity settings for the respective layer (not available for base layers). Reducing this value makes the layer more transparent. The dropdown menu for *Merging Layers* can be accessed by clicking on the *Normal* option (also unavailable with base layers).

The following options are available when merging layers:

Darken*:* According to the color information present in each color channel, this option designates darker colors (base or mix color) when determining the color result. Pixels brighter than the mix color are replaced and pixels darker than the base color remain unmodified.

Lighten*:* According to the color information present in each color channel, this option designates brighter colors (base or mix color) as the color result. Pixels darker than the mix color are replaced and pixels brighter remain unmodified.

Multiply: This option multiplies the base color by the mix color according to the color information present in each color channel. The color result is always a darker one. Multiplying a color with black always results in a black color result and multiplying a color by white has no effect on the base color. When painting with a color other than black or white, colors will darken with each consecutive stroke. This effect resembles the effect of overlapping colors when drawing with multiple highlighters.

Screen: The pixel values in each of the layers is inverted, multiplied, and inverted once again. This is the reverse effect of the *Multiplication* mixing mode. This results in a brighter picture.

Overlay: The Overlapping Mode is a combination of multiplication and division. The deciding factor for this mode is the top layer. However brighter the colors in the top layer are determines how bright the colors in the mid tone area will appear. The opposite can also be applied: However darker the colors in the top layer appear, all the more darker the mid tones in the bottom layer will appear. In contrast with *Multiplication Mode,* the ***Overlapping*** function doesn't have such a darkening effect.

Hard Light: This mode performs a multiplication, or in some cases, a negative multiplication, of the colors (independent of the mix color). The effect resembles the effect of a spotlight shone directly on the image. If the mix color (light source) has a brightness level exceeding that of 50% of gray, the image will be brightened. If the mix color has a brightness level darker than that of 50% of gray, the image will be darkened (similar to the after-exposure effect).

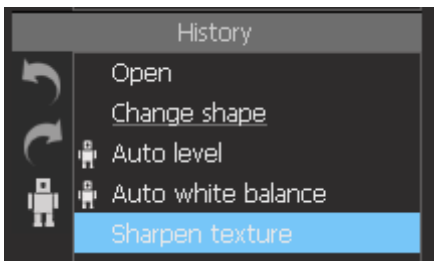
Soft Light: Colors are either lightened or darkened depending on the mix color. The effects resembling the indirect illumination of the image with a spotlight. If the mix color (light source) has a brightness level exceeding that of 50% of gray, the image will be brightened. If the mix color has a brightness level darker than that of 50% of gray, the image will be darkened (similar to the after-exposure effect). Mixing using pure white or black will not result in pure white or black, rather a relatively darker or lighter outcome.

Difference: This mode subtracts the color (base or mix color) possessing the lowest brightness level with the color from that possessing the highest brightness level according to the color information present in each channel. In this case, mixing with white results in an inversion of the color values of the base color. Mixing with black yields no change.

VII.3.3 Areas

In the **Regions** window, you can save regions selected with one of the selection tools for later use. One click on the garbage symbol will delete and remove the selected region from the storage window.

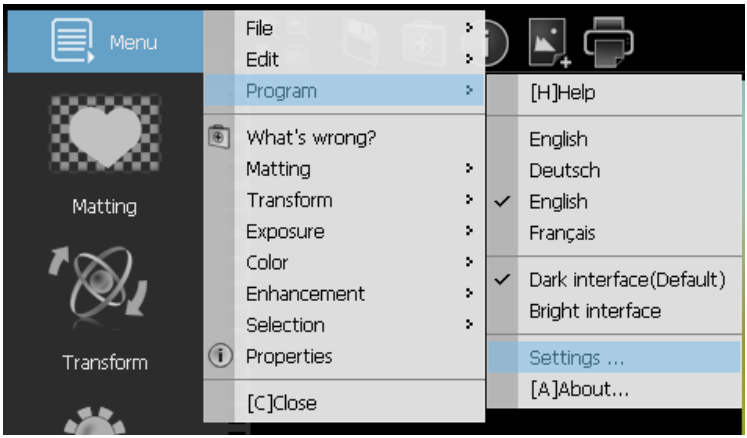
VII.3.4 History



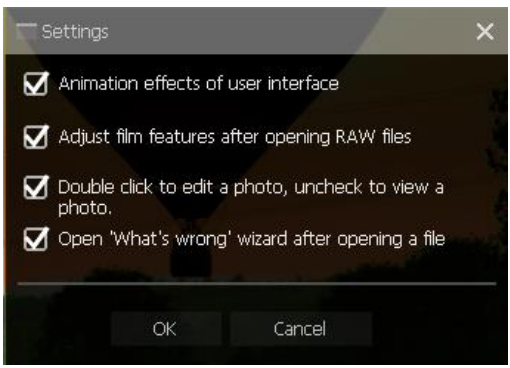
The Project History displays all changes made to your project and allows you to go back to any previous stage of editing and redo or undo certain changes made during your work process. You can save your project history as a Scheme-File (.Idscm Format) and apply it to further projects at a later date.

VIII Program Settings

Clicking on the *Menu* symbol while navigating in either Album Mode or Editing Mode will display a drop-down menu containing various options.



Clicking on *Program* will allow you to change the language settings. Selecting the *Settings* option under the Program tab will open the Program Settings menu:



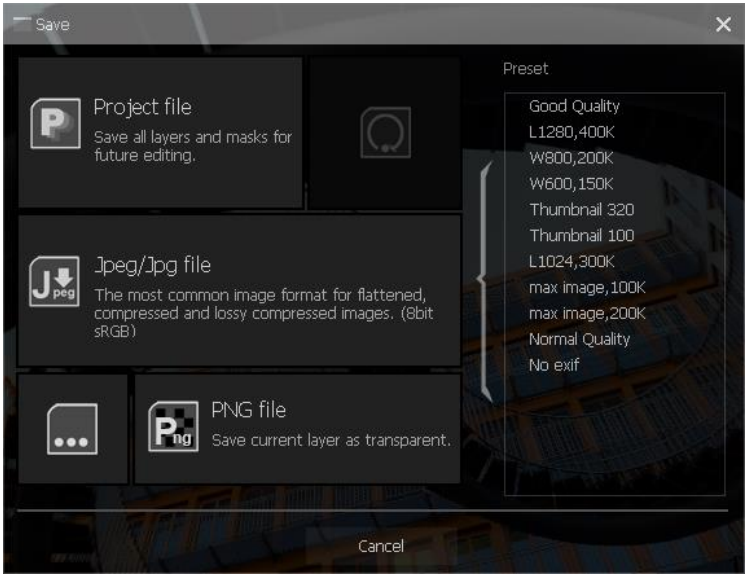
Here you can adjust the program settings for ***CutOut 7***. For example, the checked box next to *Adjust Film Features after opening RAW-files* ensures that images uploaded in RAW-Format first appear in the *Film Features Fine Adjustment* menu, and not directly in Editing Mode. Furthermore, you can choose between a dark and a lightly colored interface.

IX Opening and Saving Files

CutOut 7 supports:

- The opening of the following images formats: Jpeg, Gif, Tif, TGA, Pcx, Png, Bmp as well most camera RAW-Formats.
- Camera RAWs: *.raw, *.nef (Nikon), *.cr2 (Canon), *.crw (Canon), *.orf (Olympus), *.mrw (Minolta), *.raf (Fujifilm), *.pef (Pentax), *.dcr (Kodak), *.srf (Sony), *.erf, *.dng (Adobe), *.arw (Sony), *.rw2 (Lumix) …

CutOut 7 supports the output formats Jpg, Png, Tif, Bmp, and many more.



Preview and save jpeg file
Preset
Customize
Save ...
Delete
Jpeg compression parameters
Quality
90
Adjust by file size ...
High quality color
?
Auto
Adaptive
?
All EXIF
Optimize compression
Blur
0
Optimize more
?
Size control
Max image size
No change
1024
px
Max file length
200
KB
Unlimited file length
?
Compression preview
Original file: 105915.0KB, 1.0:1
Current file: 5313.6KB, 19.9:1
Final jpeg quality: 90%

- **Quality**
  Jpeg compression quality

- **File size Customization**

  Enter the desired image size and the program will attempt to create an appropriate size according to your settings.

- **High Quality**
  Use YUV 1:1:1 to decode Jpeg files.

- **Adaptive**
  Utilize the adaptive quantum table to decode Jpeg image files. This may reduce the file size.

- **Exif-Data**
  Choose whether all, some or none of the EXIF-Data are to be kept in the file. EXIF-Data require a file size of 1-64K.

- **Compression Optimization**
  The program will attempt to reduce the file size by means of optimization.

- **Maximum Image Size**
  Set an image size limit. If this is exceeded, the image will be automatically reduced.

- **Maximum File Size**
  Set a file size limit.

- **Methods**
  When the final file size exceeds the maximum file size, the program selects a method to reduce the file size. The method encompasses a down-scaling of the image size and a quality reduction. The size reduction process is carried out automatically.