

MEDIACHANCE

Dynamic Auto-Painter

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1 Introduction



Dynamic Auto-Painter (DAP) digitally repaints your photos in the style of famous world masters such as Van Gogh, Monet, Benson, Corot and Cezanne. DAP is not a photo filter. Our goal was to create a software to produce results that closely resemble actual paintings both from distance as well as up close.

A paint effect or filter can create the feel of brush strokes on the image, but when you look at it from a normal distance or re-sized down on a web page, it looks like a heavily processed photo. This is because it doesn't matter if the pixels are smeared with a brush-like texture, they still have the same "photo" feel.

Dynamic Auto-Painter takes a different approach. First, it doesn't process the actual photo pixels at all. The photo is just like a scene in front of a painter. Dynamic Auto-Painter will then paint the image from scratch using digital brushes while keeping the photo only as a guide. In fact you can paint a very large painting from a small web-size image of just a few hundred pixels.

Dynamic Auto Painter gravitates toward impressionist styles of Monet, Van Gogh, Manet, Cezanne, Pissarro etc, and it is especially suited for landscapes or scenery.

2 Recommended Software

DAP can be used alone, but there are few software packages that are exceptionally useful.

Photo-Blend

<http://www.mediachance.com/photoblend/>

A software to quickly combine parts of different photos into a montage that can be then painted into a purposeful art. This rapidly increases the quality of painting from just a snapshots to an art by removing unnecessary parts of images and arranging the objects into a real paint-worthy scene. And no, it is not only about horses.



Photo Reactor

<http://www.mediachance.com/reactor/>

DAP uses Reactors virtual effects at many places during the painting. The included effects in DAP work without having Photo-Reactor installed but in order to change the effects or create new one the Photo-Reactor is needed to edit the vbox files (virtual effect box). It is a complex software, and your head will spin, but it has almost unlimited potential. Photo-Reactor can be also used to adjust the input and the output image for DAP.



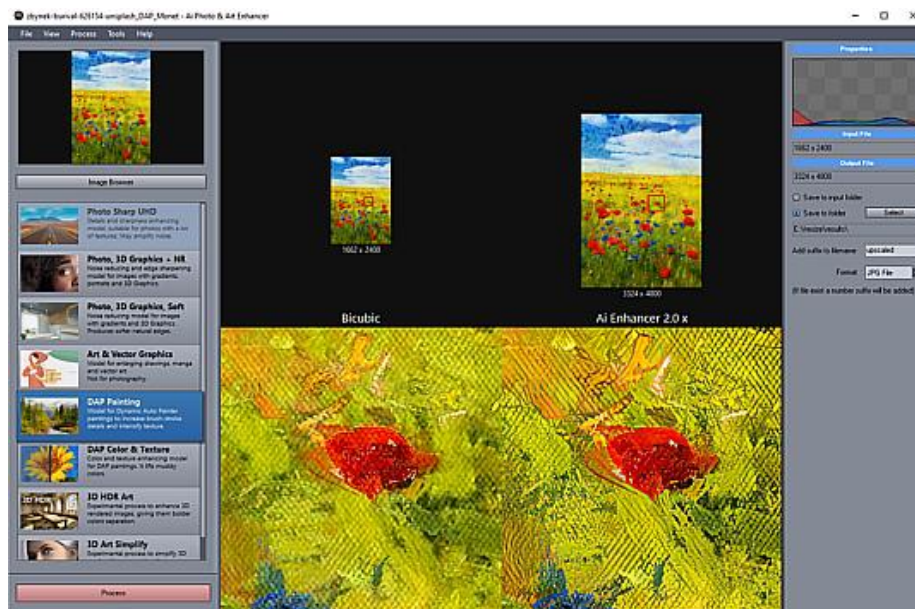
AI Photo and Art Enhancer

For many styles it is often more pleasing to resize an painted image to higher pixel resolution, rather than to produce high resolution image with a lot of tiny details.

this software use artificial intelligence to improve resolution of painted image with up to 4x of details.



<https://www.mediachance.com/aienhancer/index.html>

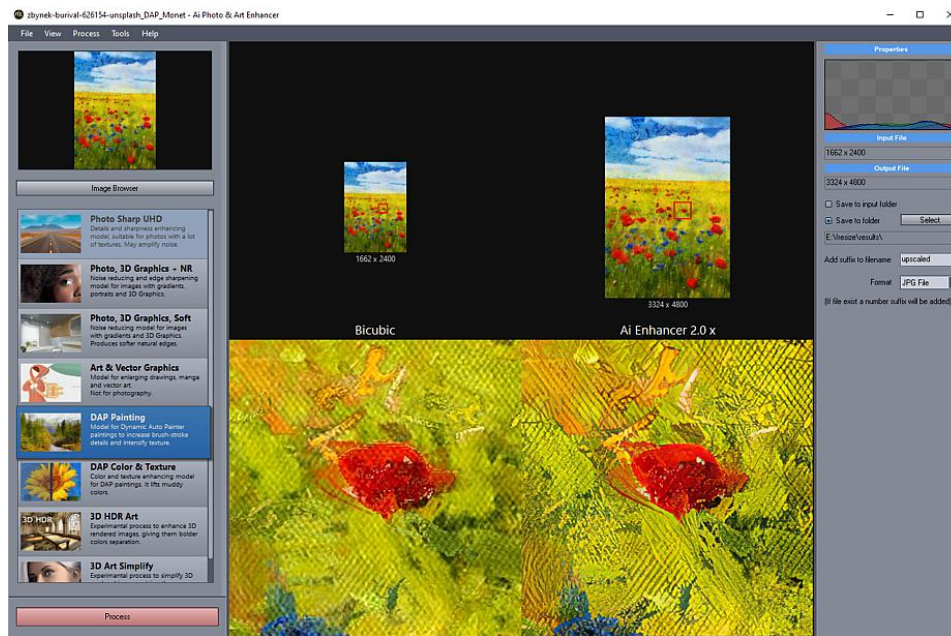


3 Professional printing

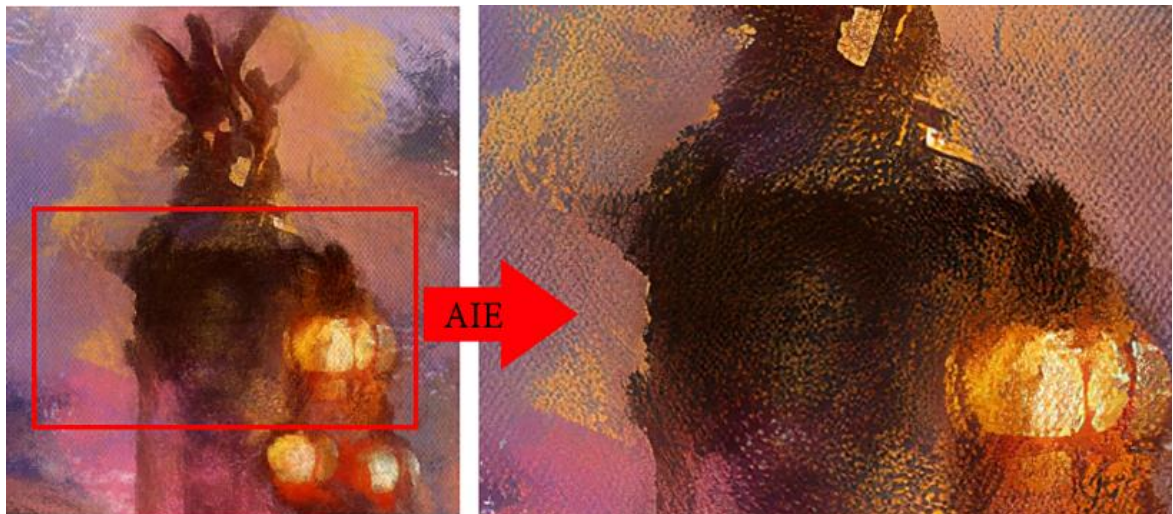
We created AI Photo & Art Enhancer that uses Neural Networks to resize the result image with incredible amount of details. *AI Photo & Art enhancer is a separate application.

For more visit:

<https://www.mediachance.com/aienhancer/index.html>



It is hard to showcase the abilities in a help file, but the software adds shocking amount of details to DAP painted images and increases resolution between 8 and 16 times.



4 Where to use it

DAP can be used in designers workflow for many different purposes.

- Change a photography into a painting
- Use painting effect to spice up 3D rendering, sketch or CAD output
- Re-process an inferior painting or computer drawing into a brand new smoother style

In addition, thanks to the unique way DAP works, we get new benefits:

- For most purposes DAP works as a size independent painting application. DAP can paint a large image even from small input images.
- The result will look like a painting up close or from a distance unlike traditional photo effects
- It doesn't use the actual image pixels, so noise or any other digital image phenomenon doesn't play a role
- We can process images that would otherwise be a lost case - extremely noisy images, small resolutions from old camera or video captures etc...



5 Legal stuff

Mediachance doesn't claim any copyright or ownership to the images you create using DAP (Digital Auto Painter).

There are no restriction from our side what you can do with the images created using DAP. Post them online, print them, give them as gift, sell them for million bucks, it's all up to you.

But it's important to make sure you have the rights to the original photos you're using. So, double-check that either:

- You own the copyright to the photo
- The Creative Commons license allows you to modify the image

When you're using someone else's photo, processing it with DAP doesn't automatically give you the right to claim it as your own artwork either. Make sure to check the copyright and Creative Commons license for the original image.

If the license allows you to "Adapt" the image (meaning you can remix, transform, and build upon it), that's great! Just remember to give credit where it's due, especially if the license requires attribution.

Happy creating!

For more info, see <http://creativecommons.org/>

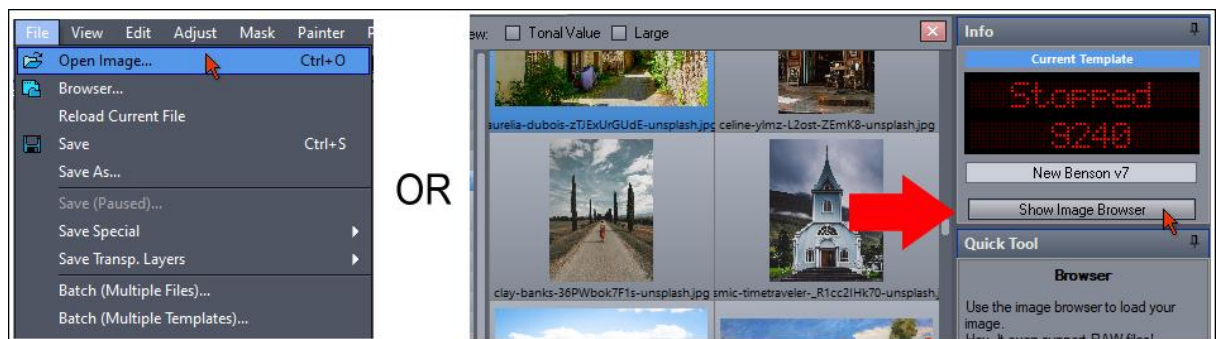
6 Quick Start

For new users, the software and its various options may seem overwhelming at first. However, we recommend taking it in small steps. Start by experimenting with the default settings and a few different painting styles to get a feel for how the software works. As you become more comfortable, you can delve into the more advanced settings to fine-tune your digital masterpieces. Don't be afraid to explore and learn at your own pace.

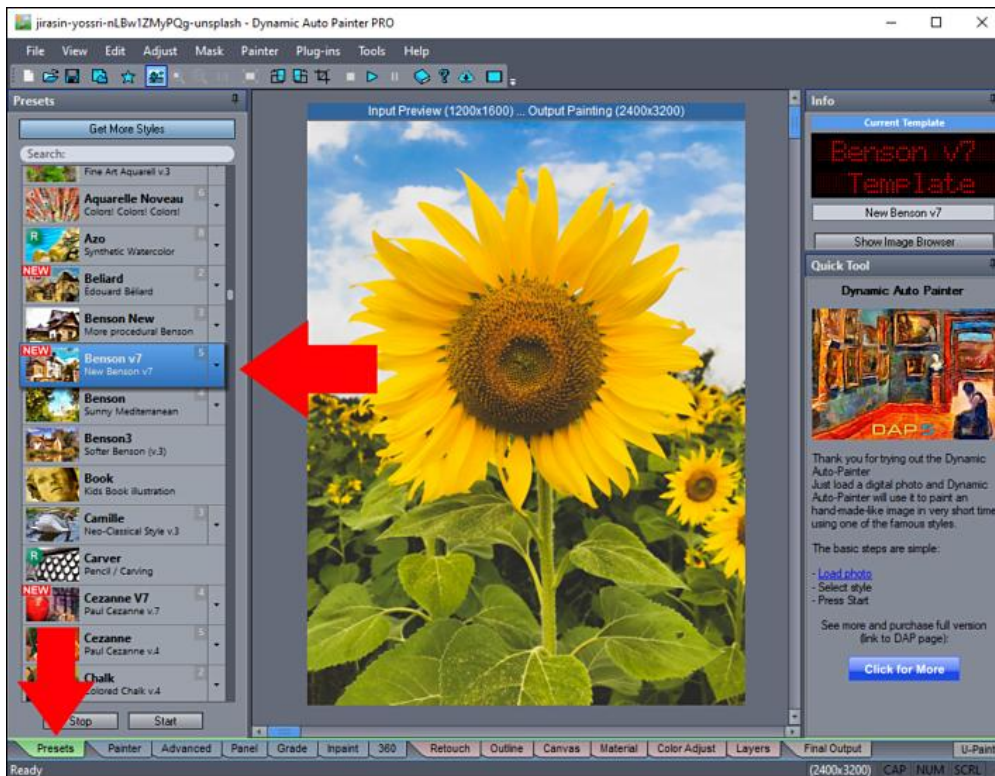
The first introduction to the DAP can be a very quick affair:

- Load any photo
- Select Preset
- Click Start
- Watch it to paint

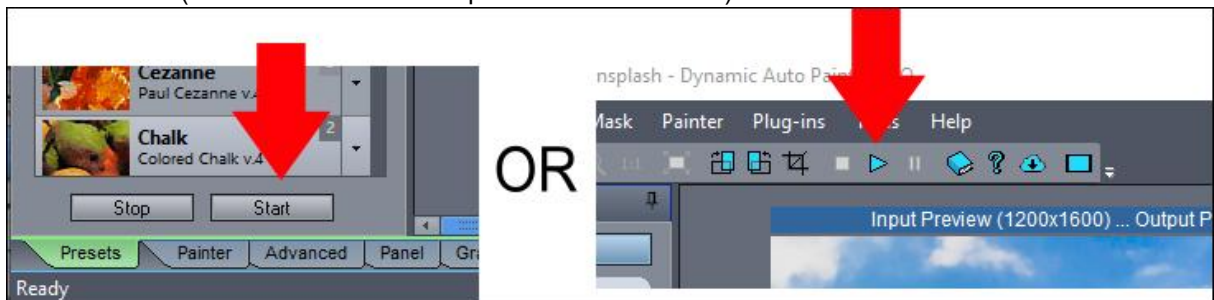
1. Load Photo (either from the menu or use Show Image Browser on the right side of the application)



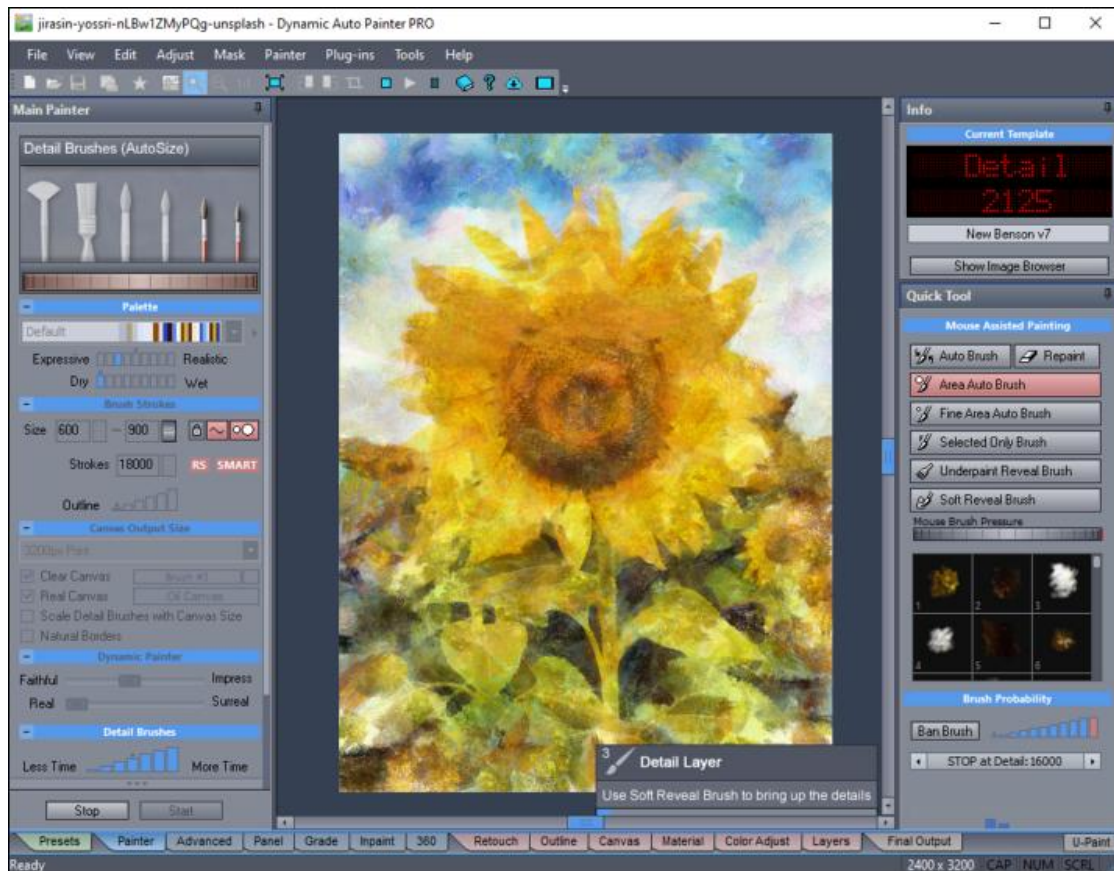
2. In the Preset Panel, select any preset



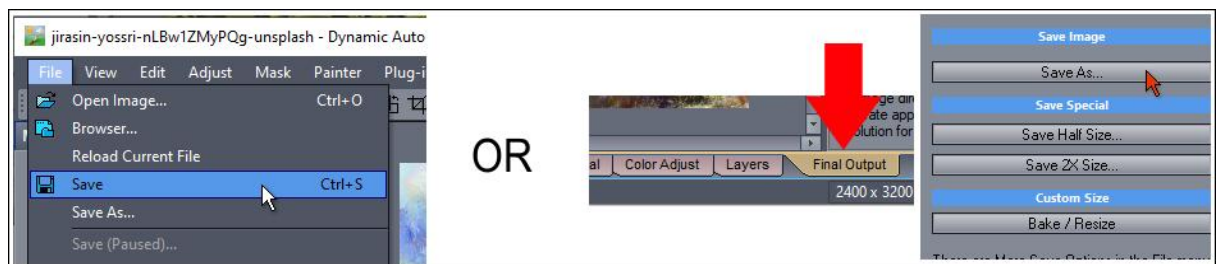
3. Select Start (on the bottom of Preset panel or in the Toolbar)



4. Watch it Paint. The process can take some time.



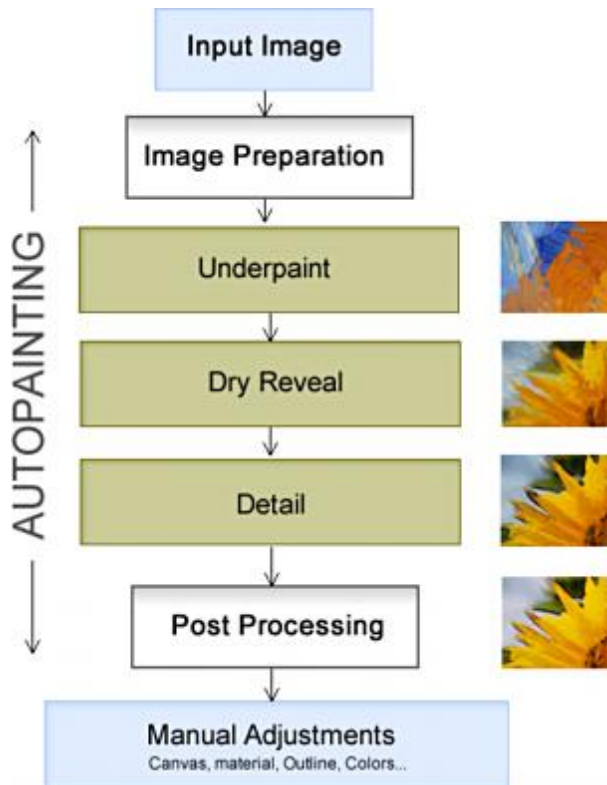
5. Save the Result



6. Enjoy

6.1 Painting Cycles

The painting goes through a few cycles. Many templates are set to non-Stop, that means the detail cycle will go forever until you hit stop.



- Underpaint
Adding large brushes, the image will look far from being finished
- Dry Reveal
This will bring up the large details using different smoothing and reveal techniques. The painted image starts to look finished
- Detail
Placing small detail brushes to pinpoint highlights or outlines. This is the last autopainting cycle and you will stop the painting during this cycle.

Dry Reveal double-role

- the dry has two roles, first it changes the image visually by overlaying an effect on top of brush strokes, but also it has internal function. Even if you use only marginal dry reveal strength, the Detail layer can then focus better on placing the brush strokes in the next step..

Before you start however here are very few tips:

Good photo is a perfect start

Don't expect that an uninspiring photo will turn out into a great painting. As a painter looks for a good scene so should you with your digital camera.

YES: Well defined large subjects without many distracting items on the background. Harmonious

landscapes. Images that follow rule of thirds or golden ratio.

NO: Too many small items, group of many people, subjects against busy background. Random snapshots of nothing significant

Start with smaller size output

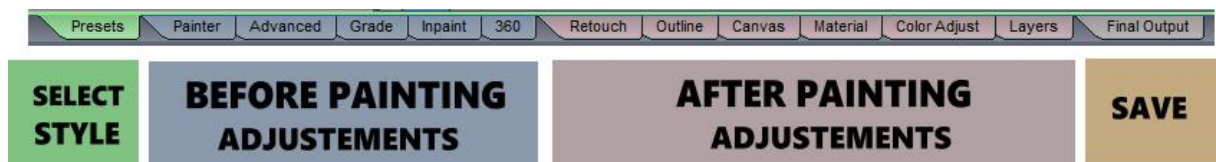
Under the Painter tab you will see Canvas Output Size. You might be tempted to crank the size up, but we would suggest to start with 2400px to see how each preset responds to the input images.



Patience

Be patient, the image starts to be painted with large brushes progressing towards finer details.

Interface (PRO version)



The interface offers a large amount of options. They are grouped into few blocks of Tabs. The first green Tab is the most important tab where you select the actual Preset or Style of painting. The blue colored tabs are for adjusting the Input image BEFORE the painting starts. The red colored tabs are for adjusting various details of the output AFTER the painting has been created and the Final Output finally shows the complete final image how it will be saved.

The Home version has less options for input and output adjustments.

There are also additional input image adjustments in menu Adjust and menu Plug-ins.

Simple Steps:

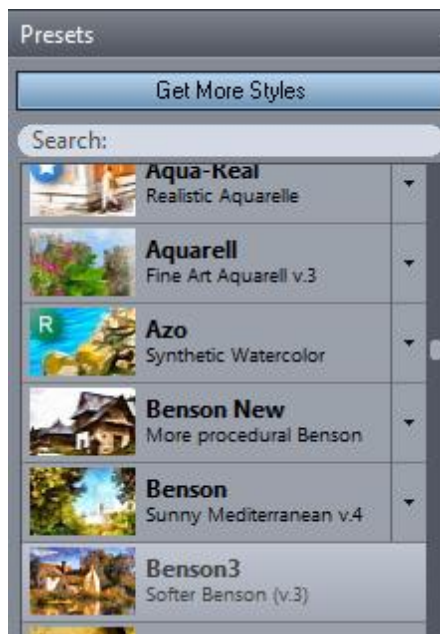
Load Photo

You can use the build in browser or simply use the menu File-Open Image.



Select Preset (Presets "green" Tab)

Click on one of the Presets. The available preset templates are displayed in Presets tab.



Painter Tab

Here you can change basic painting options such as the result image size. The painter tab will also display the currently selected preset and its variations [20].

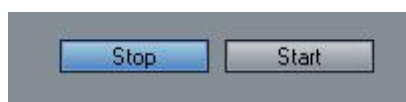


Note: DAP uses the input image as a guide - that means the output will not be the same size as the input. It works both ways, the output can be as easily larger than input image as smaller. You have to set the correct size in the "Canvas Output Size".

Bigger is not always better. Depending on how you want to use or display the result - smaller output size will have more distinctive painterly quality and will be instantly recognized as a painting. A larger size will have more small details - but also it requires to be viewed in larger size (for example printed on poster). A common mistake when producing images for web or social media is to choose much too large size that then will have to be scaled down when uploading which essentially diminish the artistic quality and blur the result. It is good compromise to start with 3200px which is a great Standard for Web, Social Media as well as normal Print

To start the painting

Press the Start Button

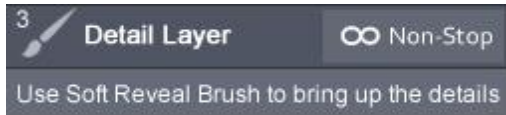


What to change during auto-painting

Presets are made of various settings. It is not necessary to start adjusting them all for your first trials.

Mouse Assisted painting

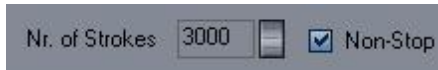
During painting you may manually assist the process: Paint a certain "brush" or paint back various cycles. The help prompt will inform you what is the default action.



Stop When you want it

Most presets are set to Non-Stop, that means they will never really finish painting and will continue with smaller and smaller brushes. Don't let it run for too long.

In general a good stop point is about 3.000-10.000 brush strokes depending on the size of the output.



Some presets are set to pause after predetermined number of strokes and you may decide if to continue or stop at this point.

After the AUTO painting is finished

When you finish painting by stopping it, you have more options to refine your painting, including: Brushes to reveal underpaint or dry layer, adding outline, changing canvas and material, adjusting colors and finally combine the images with different layers and textures.

Tip: Don't start painting in high resolution - it takes considerably more time, to get the feel of a style and how it changes the photo, the best is to start with the 6 Megapixel settings to get a feel for the preset.

6.2 Image Browser



Image Browser

This is used to load the image into Dynamic Auto Painter



You can scroll the browser by clicking anywhere on it and dragging the mouse. This is a great time-saver especially if you use tablet or touchscreen.
To open image, double click on it.

Add Folder to Favorites

You can add a folder into favorites by clicking on its star.



It will be added to the bottom of the screen.

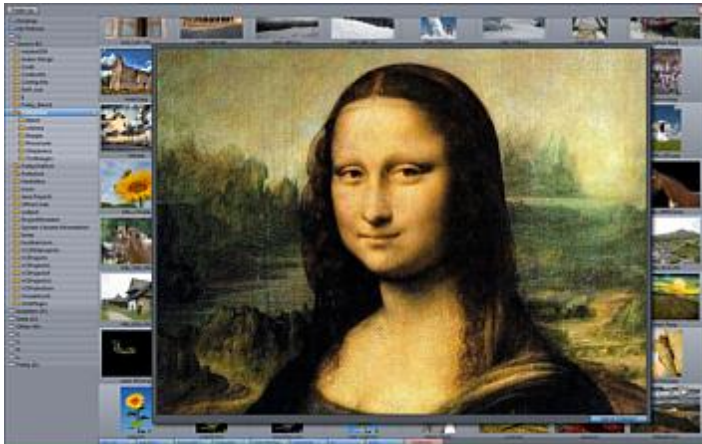
Remove from Favorites

Click on the Favorite star on the bottom of the screen to remove the folder from Favorites.



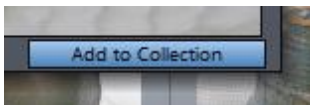
Large Preview

Right Click on an item to see its large preview



Collection

You can add images to a collection (for example images you often use for testing or images you would like to paint in the future). This is done from the Large preview, that is: right click on an item to open large preview and click Add to Collection button.



A Collection tab will be added to the favorites bar:



This works similar to recalling favorite folder, except it will show an virtual folder with all the collection images in it. If the image is deleted or renamed from its original location then the link in collection will disappear.

Tip: You can also open collection from the menu View- Browser -Collection

To get back to normal browser press the Collection tab or select any folder in the folder list.

Removing from Collection

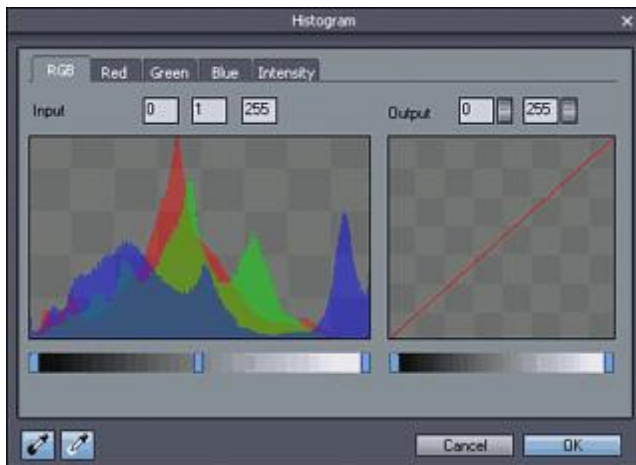
When an image is already added to the collection, its Large Preview will display **Remove from Collection** button instead.

6.3 Input Adjustments

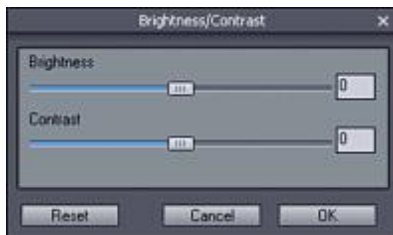
The input image may not be always ready for painting. It may be too dark, too light or had very little contrast. This may not work well with the Auto-painter.

But there is no need to go to an image editing software because we added the most important adjustments right in to the software.

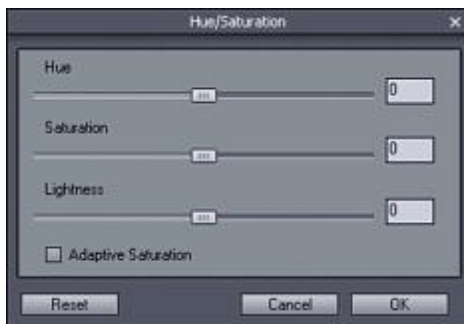
Levels



Brightness & Contrast



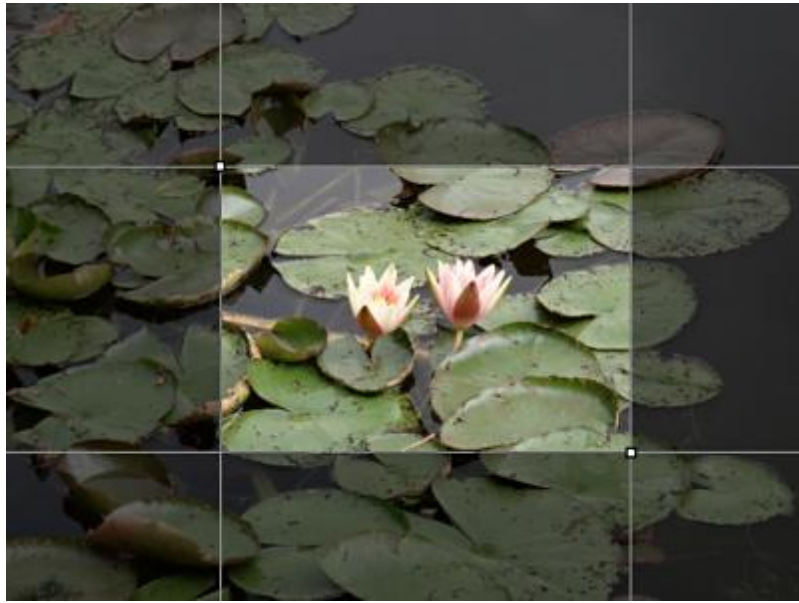
Hue/Saturation/Lightness



In Version 6 PRO a new tab with Color Grade^[77] has been added and also a way to remove unwanted image objects with Inpaint^[81].

Rotate - rotate or mirror the original image. Some images actually do look different when mirrored! For example we (at least in western part of the world) subconsciously perceive a person looking left like he is looking "back" and person looking right like he is looking forward.

Crop - if we can find one, most powerful tool in art and photography, it would be crop tool. Cropping subject can dramatically enhance the feel of an image. In fact nearly any photo can be always improved by careful cropping. You may also remember rules of third.



The Crop is non-destructive. that means you simply mark which part of the image you want to crop and then the painting will paint that part on the full canvas. If you don't like it, you can simply re-crop the view.



Because DAP will not carry photographic noise, you may actually crop deep inside a small details and get still usable or at least interesting painting with the same amount of painterly detail. This is one of the wonders of DAP.



6.4 Presets

Presets tab displays all the available templates.

Note: The variations^[20] are usually more advanced and refined than the main "parent" preset as they employ many advanced techniques and custom reactor effects.

Options:

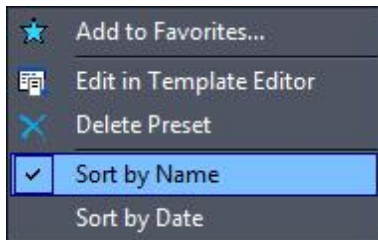
Search: When your mouse cursor is anywhere in the preset thumbnail window, you may start typing to show only items that match the search criteria.



Sorting:

Right-Click on preset and from the menu select Sort method:

- Sort by Name: Alphabetically A>Z
- Sort by Date: Newly changed/added presets first



Favorites:

Adds current preset to a favorite Sheet^[25].

Edit in Template Editor:

Edit the full set of options by opening the preset in Template Editor^[130].

Variations

Presets can now have multiple variations.

The new variations are created from Edit Template.

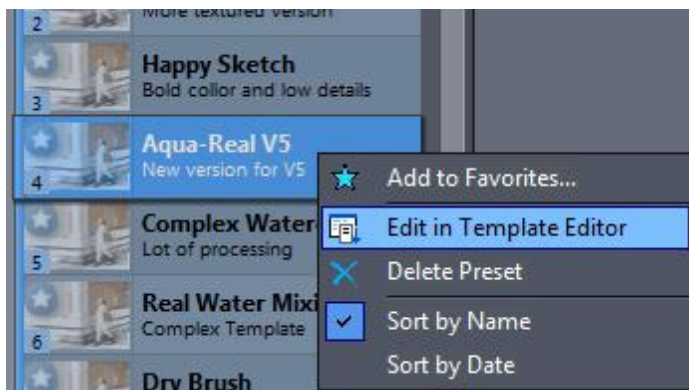
Note: In version 6 you can have subfolders, see the Version 6

6.5 Variations



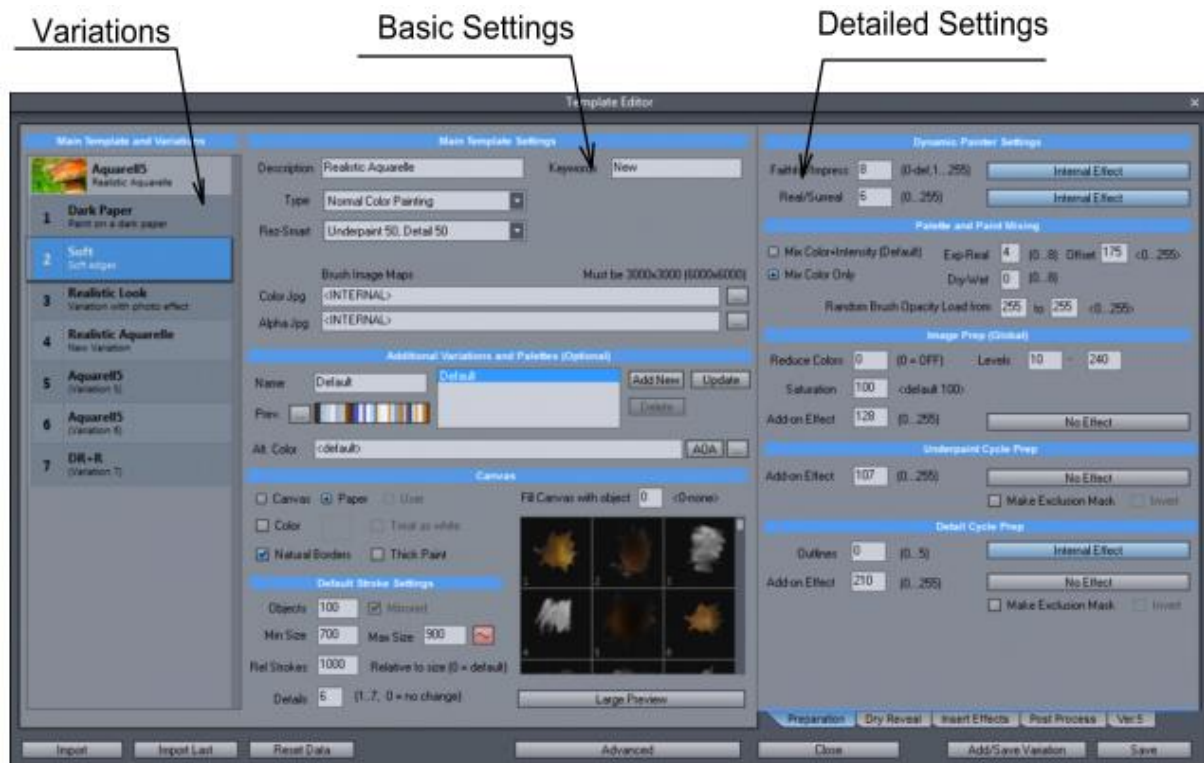
Variations allow to have multiple sets of different settings for each template. They are marked by an arrow next to the Template.

Variations consist of the parent (the row with the bright thumbnail) and its optional children. Parent itself is the primary developed template. All children derive from the parent by changing various settings.



In general the variations are a modifications of the parent template which also includes reactor files and most often they gain in complexity. All variations were added in version 5 - so variations should be considered as "updated" version of the previous template.

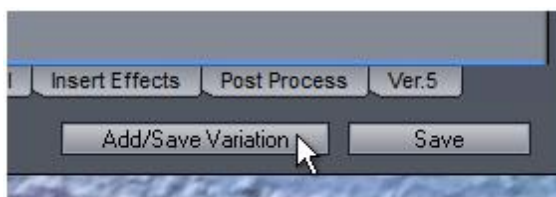
The editing and adding new variations are done through Edit in Template Editor (PRO version). This will always load the parent preset and all variations attached to it.



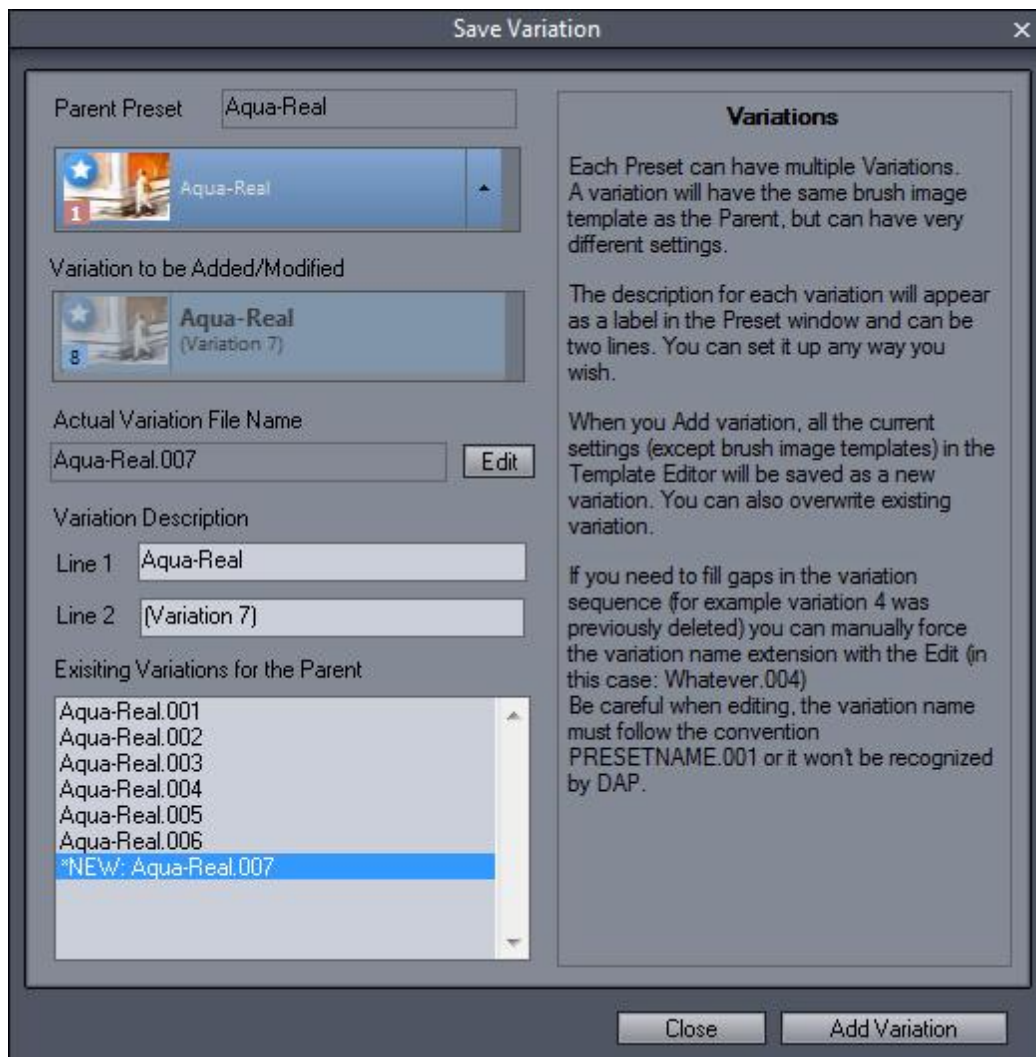
A variation will keep the parent brush strokes (defined in Brush Image Maps) and settings related to it (such as number of objects) but all other parameters, including Detailed settings can be modified and saved as new Variation.

More details are in the Edit Template¹³⁰ section.

Load template and select variation you want to start with (or main template which is the 0 variation), make any changes then press Add/Save Variation.

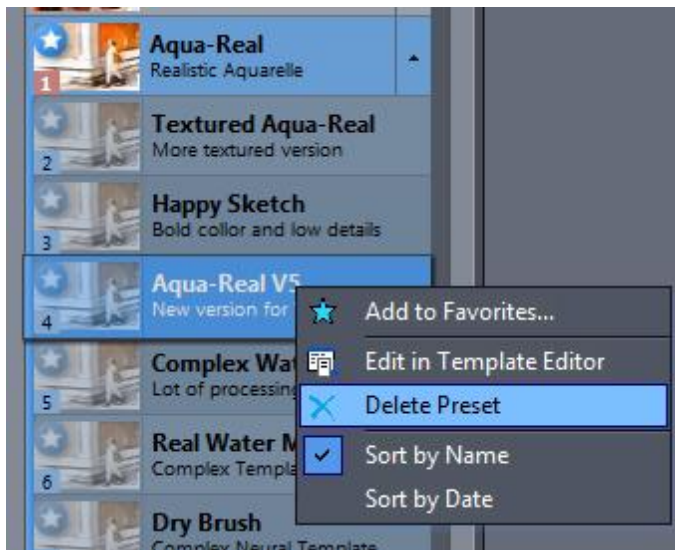


Variations are saved in the .001, .002 ... etc files and you can either add new variation (default) or select a variation to replace (in Existing Variations for the Parent). Fill up the Line 1 and Line 2 description and press Add variation.

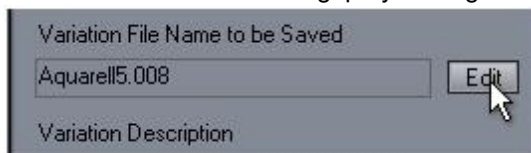


Deleting Variations

Variation can be deleted from the main Preset window (highlight variation and right click and select Delete preset) or from Edit Template (same way, right click Delete Variation.).

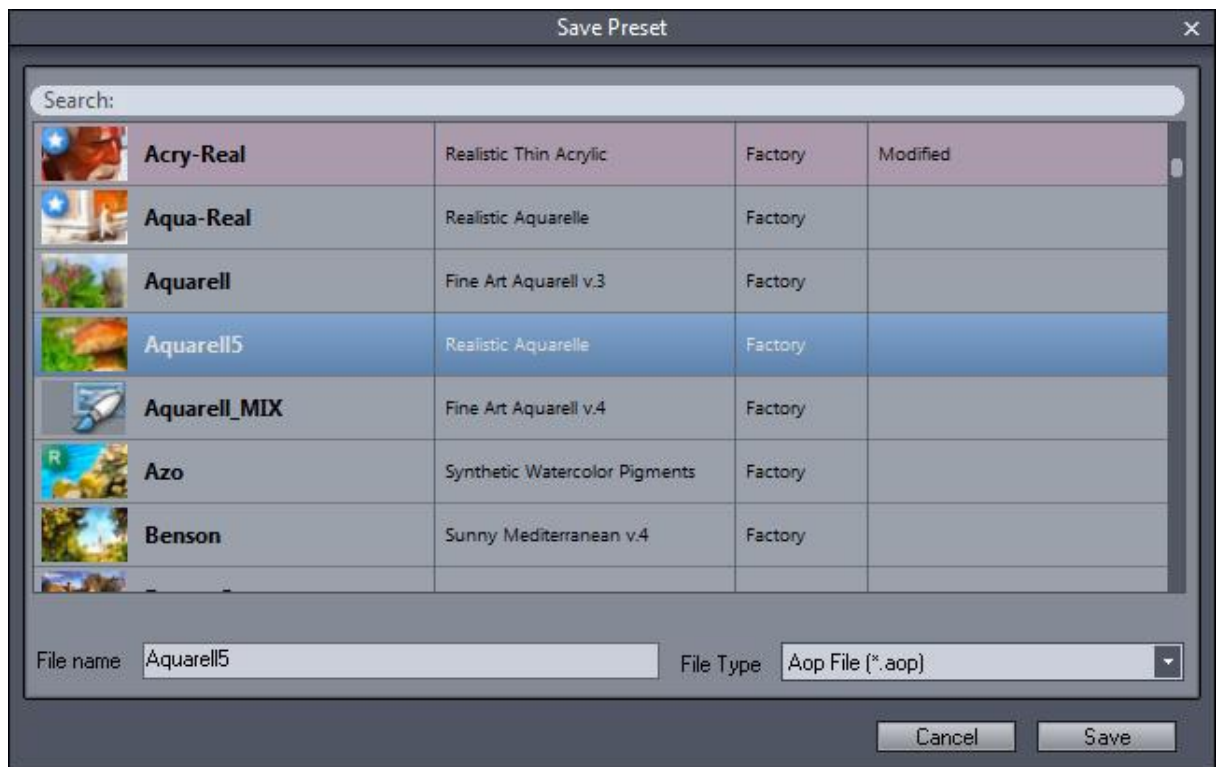


Note, deleting variation will leave a gap (the other variations won't be re-numbered) and you can later save a new variation in this gap by editing the variation file name directly in Add/Save Variation.



File Management

Edit Template now uses new user custom file management. What that means is you are not going to open and save files directly with windows open/save dialog but through a Management window. The Management will keep copies of files and direct DAP which to load.



The Management will save any modifications away from the factory templates, which means the factory templates will be never overwritten.

The Management will recognize three kind of files (templates and supporting files):

Factory - these come with the installation and are unchanged

Factory Modified - a modified (resaved) factory file with different settings than factory.

User - completely new template

Deleting templates (right click on Presets Window then use Delete Preset):

Factory Cannot be deleted

Factory Modifications will be deleted and the template will roll back into its factory settings

Modified

User Template will be completely deleted.

6.6 Favorites

Favorites in Autopainter work more like your computer desktop screen where you can store your often used or favorite shortcuts (icons). To open Favorites window, click the STAR button.



If you want to add preset to favorites, right click on the preset and select Add to Favorites. (Also menu Painter - Add Current preset to favorites). This can be done regardless if favorites window is open or not.



The shortcut will appear in the middle of the Favorites sheet:



From here you can drag it anywhere on the sheet.

Objects (frames, text...)

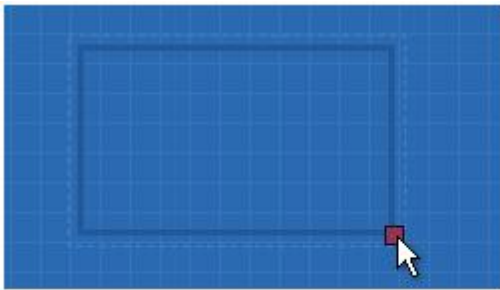
The Favorites window allows you to add simple objects such as frames, rectangles or text to customize the favorite sheet and to add notes.

This is done with the small toolbar on the left side of favorites.

To simplify things, the rectangle and frame will be always placed below text and template shortcuts (icons)

Tips: To edit text, double click on it.

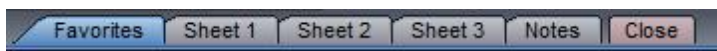
To resize Rectangle, select it and then click on Rectangle or Frame tool. A resize handle will appear in the bottom right corner of the selected rectangle.



An example of using objects and text would be a simple collection of shortcuts:



There are 3 more sheets in the favorites window and you can add texts shortcut or notes there as well.



To add icon shortcut to any of the other sheets, keep the favorites open, switch to a sheet and use Add to favorites as above. (The icon will be added to the currently opened sheet)

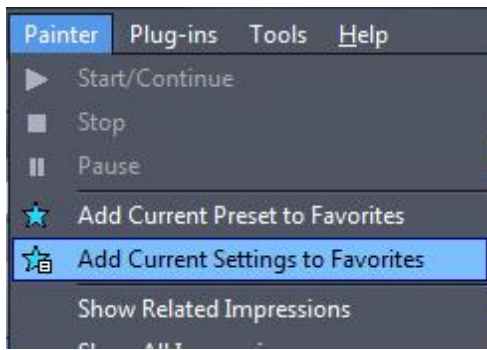
To load favorites preset:

- double click on any of the shortcuts

Custom settings

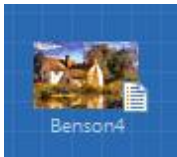
So far by adding favorites icon we basically added a shortcut to the default template. However we can add also the modified settings.

For example if we modify settings in the Painter tab such as Fithful/Impress slider we can add the preset with those changes to the favorites.



This is done by using **Add Current Settings to Favorites**

In this case the icon will appear with a small document pictogram



Note: The Brush Probability and Ban (if set during painting) is also added to the Custom settings.

6.7 Painter

On the top of the window you can see the currently selected template and its variations. (this was changed from version 4)



Painter tab displays the most useful set of controls to be changed without actually changing the template preset. There is a far more settings hidden inside the template which is accessible in the Template Editor¹³⁰.

Here is description of the basic controls:

Palette



Color/Palette Sets the character of the painting palette and the way colors are mixed.

Palette selector combo box: Gives options for color palette. Some templates may have additional palettes. There will always be at least Monochrome and two Color Match palettes. The Color Patch Palettes will extract the colors from an existing image or artwork. They differ in the color matching algorithm. The color match palettes are a legacy option. In the current versions there are other ways to adjust the color of the image, including having an internal color match in the template itself.

Expressive/Realistic color mixing

This setting further adjust the Expressiveness or Realism of the color palette. An Expressive settings will mostly work with colors straight "from the tube" as typical in impressionistic and expressionistic work. Realism setting will first mix the palette colors to obtain more subtle shades as used in realism or classicism.

Settings this control more towards Expressive side will therefore give much stronger feel of the result being a painting and as such could be recognized even on thumbnail size. This usually works best for landscapes and such.

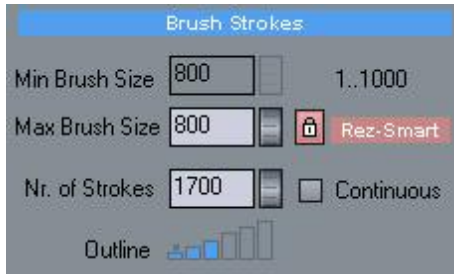
Adding realism to the palette on the other hand will also add a realism to the output image which may lead the image to retain certain photographic feel especially when resized down. This is usually good for portraits or other images where we desire higher amount of color shades.

You can change this setting during painting.

Dry/Wet color

This settings set the color physical properties. Dry or solid color will clearly place the brush stroke on the canvas. Wet color will partially blend the brush stroke with the previous colors.

Brush Strokes



Min/Max brush size - this determines the size variation of the brushes used. A large variation is possible for smooth brushes, but it may create graining with heavy paint templates.

Lock Button - locks the ratio of min/max so it can be all controlled by one slider.

Rez-Smart flag - this shows when Rez-Smart template is used. Rez-Smart template uses different brushes for underpaint and for detail.

Nr. Of Strokes - number of strokes for the template. The time of using detail brushes is also derived from this setting. If you increase number of strokes then also number of large strokes will be increased - which may not be the desired effect. It is easier to use the Continuous button when the painting will continue until you press Stop.

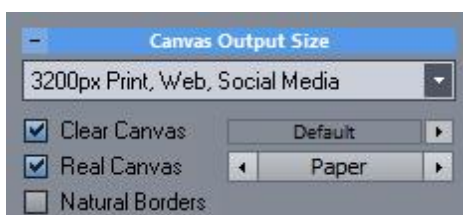
Non-Stop (Formerly Continuous) - In Non-Stop mode the painting run for the number of strokes, but then it doesn't stop and continue with the last set of brushes until you press stop. Some paintings require longer time to bring out all the details and this is the best way to do it.

Outline - the detail brushes will follow outline of the objects - this sets the strength of it. Some styles do benefit from this and it is usually set by the preset.



Outline Sketch - In the extreme value of Outline (the larger rectangle highlighted red) the detail brushes will start partially removing the features painted with larger brushes, producing a sketch-like image. (Different presets behave differently, but try it on Cezanne preset)

Canvas



Resolution selection - the resolution of the output canvas. Note that higher resolution also means the brush strokes will be smaller and it will take longer time to achieve full painting. Higher resolution is good for printing on specialty paper. The Pixel number corresponds to the largest size of the output image (Width or Height)

Note: In version 6 these were renamed. The 3200px corresponds what was known in previous version as 10 mega Pixels and it is usually the optimal standard.

Clear canvas - this will clear canvas each time you press start. If unchecked you can actually do multiple over paintings with different values or even different preset..

New in version 6: You can now quickly change the canvas color and/or brush fill for the canvas.

Real Canvas - the image will be painted on a real-like canvas. You can choose from two - oil canvas and watercolor paper. The presets will usually select the best canvas for the style.

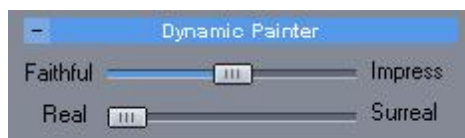
Note: PRO version: you can change the canvas also after the painting is done.

Natural Borders - some styles, like watercolor or illustration are normally presented on a paper with visible paper borders, unlike an oil painting where the edges are hidden under the frame. This often emphasize the illustration qualities of the image. The size of the borders can be adjusted in the Advanced settings tab.



Image with Natural Borders OFF and ON

Dynamic Painter



Faithful/Impress - The slider moved towards Impress will add more Impressionistic effect (various variations of colors) and in faithful will try to mimic the photo closely. Best is in the middle.

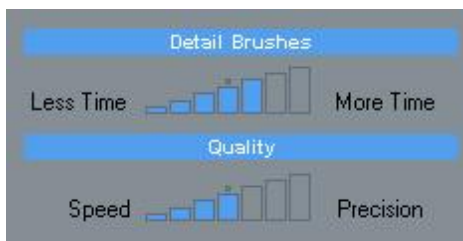
Real/Surreal - The slider determines a reality of the forms on the painting. When in Real (left) position the shapes (like a flower for example) will remain same shape as on photo, when in Surreal position the shapes of objects will get surreal skewed forms.

This is best to use with styles and subjects that natively work well with surrealism, for example a sunflower with VanGogh style would benefit from surreal setting as it will emphasize the VanGogh style by breaking the symmetrical shapes of the original flower.



Use it sparsely on scenes from nature, like trees, flowers etc. Using it on man made objects like buildings etc will give you back an image that would be more suitable for surrealism. On portraits this may lead to caricature.

Detail and Quality



Detail Brushes Time - The time painter will paint with detail brushes. Also differs between Rez-Smart and normal templates.

With Rez-Smart this sets how long the detail brush will be used (from the number of strokes). In its extreme settings only the large or only the small brushes will be used.

For non Rez-smart brushes this determines the level of detail brush division.

Quality:

Sets the speed vs. precision. With higher quality the painter will try to position the brush stroke as precisely as it can. Lower quality also dramatically increase the speed. Some styles do not suffer from reduced quality at all.

Speed of Light

Quickly sets the Quality to 1 (fastest speed) and also back to default when pressed again. Can be used during painting to dramatically increase placing of brushstrokes. It may also speedup some parts of dry reveal, but it will not speedup preparation or Reactor calculations.

It is not advised to use this for presets that require precise brush stroke placement as DAP will place the strokes more freely when quality is at 1. However presets where precise brushstroke placement doesn't play big role (various artistic styles or styles heavily based on the Dry Reveal cycle) will run much faster without too obvious difference in quality. Speed of Light can be switched on/off any time during the painting.

Note: In version 5 the Quality slider will always reset to the default when new preset or variation is selected to avoid user errors.

6.8 Palette



Palette Sets the character of the painting same way as a painter would favor some of the tubes of paint more than another.

Note: An experienced painter doesn't buy whole spectrum of color tubes, he usually handpick his favorite set and use it over and over

All templates have its default palette that more closely follows each of the real painter style. There could be additional palettes that enhance each of the style for different type of source images.

Impression/Impression+

A special case is Impression and Impression+ palette that can supply almost any color if needed and they can simulate palette of pre-defined paintings.

A good way to use this palette is to apply it on a well lit or quality images.

Impression palette will enhance the definition of hues but will keep the brush stroke intensity

Impression+ palette will enhance the hues and suppress the own brush stroke intensity

Grayscale palette will paint in grayscale - good for simulation of pen techniques.

Color Impressions

A part of Impression/Impression+ palette, but it can also be used with any other palette by clicking on the arrow next to the palette selector.



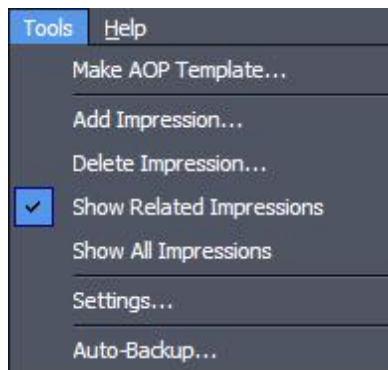
The Color Impressions will extract palette from any predefined painting or from any user loaded painting. In version 6 there is also a permanent way to add color impression to a template with Art Tone.



Simply click on any predefined painting or to remove the Color Impression, click on the first image. The new palette will be used from the selected impression (painting) and it will change the way the result feels.



To add (load from disk) or remove color impression from the table, use the Tools menu.



Add Impression - load a painting from the disk to add it to the style related impressions

Delete Impression - delete selected impression

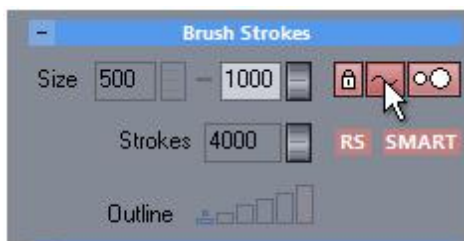
Show Related Impressions - show impressions (paintings) related to this style (or impressions that were added to this style)

Show All Impressions - show all impressions (paintings) regardless of the style.

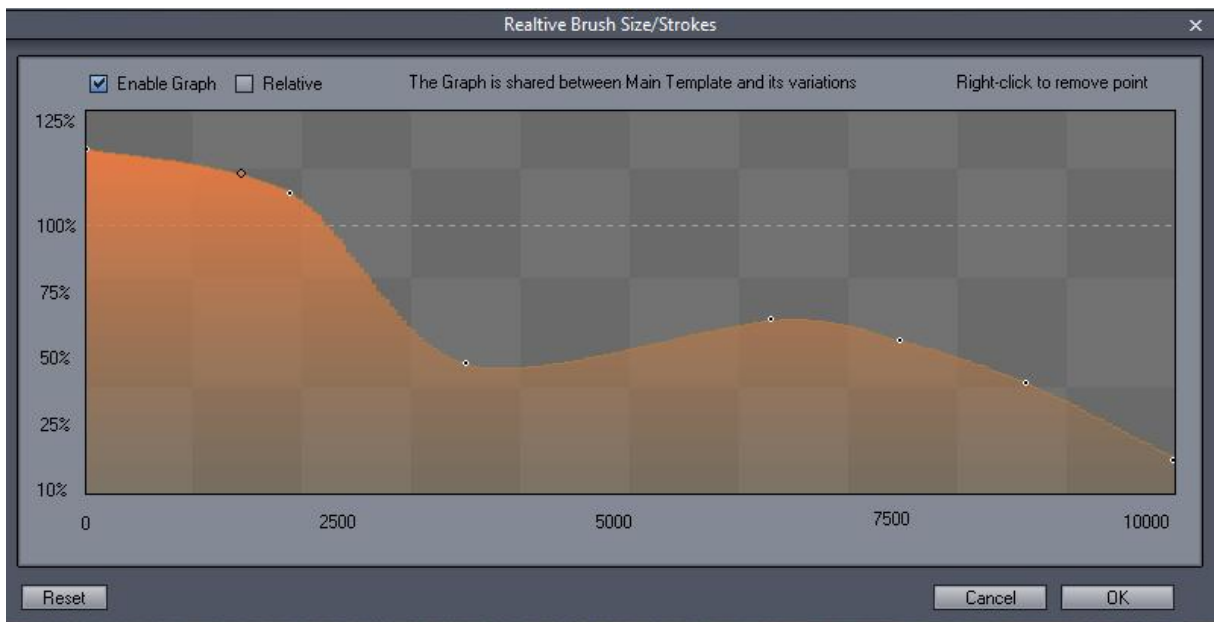
6.9 AutoSize, SMART



AutoSize settings is a special option that automatically changes the brush size in real time according to a time graph. To access AutoSize, click the Graph button.



AutoSize can refine the way brushes are selected over time from larger brushes to detailed fine brushes. the scale of the graph is from 0 to 10000 brush strokes.



When the process use autosize, moving the brush size dial manually will cancel the autosize. The dial will change color to gray and the Graph button will switch from red to gray as well. After the cancel you can start it again by clicking on the AutoSize graph button.

Some presets may have set autosize by default with the corresponding graph.

Note: To remove point from the graph - right click on the point.

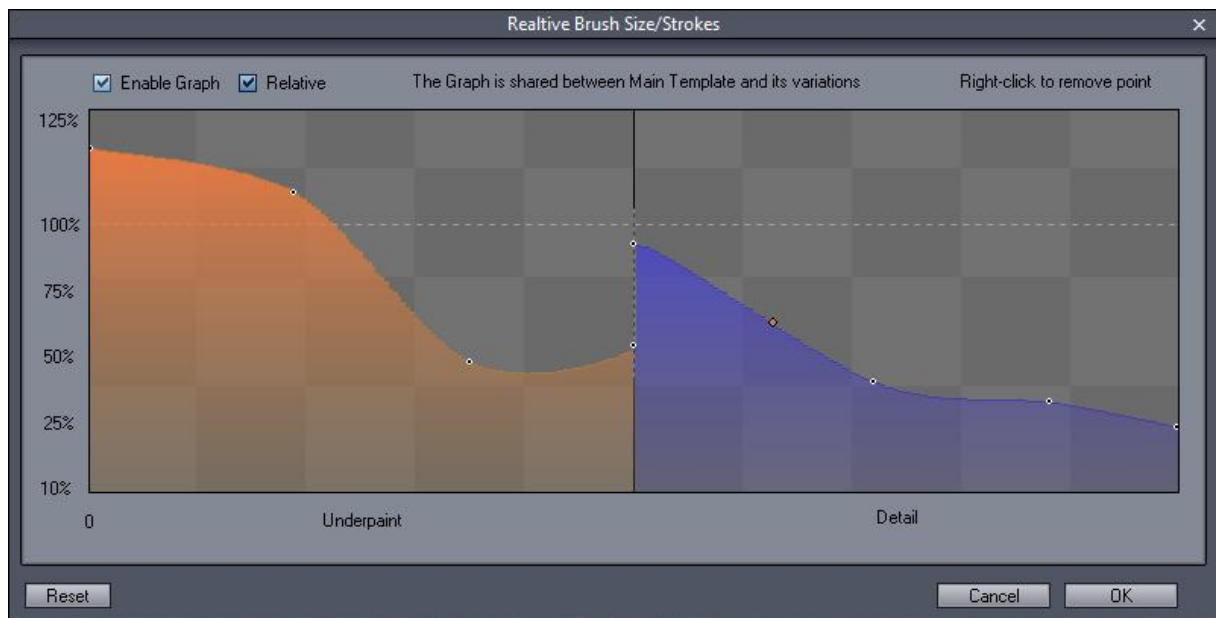
Absolute and Relative size settings

Absolute setting depends only on the number of strokes and doesn't take into account anything else. Additionally, the absolute settings will change only the **maximum brush** (Max. brush Size) and keep the minimum brush unchanged so the brush selection size will be between the value determined by the graph and the Minimum brush.

Note: if the Min and Max brush sizes are set too closely, the graph will have only very limited impact. Absolute settings is usually used for small adjustment of a ready made template.

Relative settings will not depend on the number of strokes, but it will use the graph relatively to the painting cycle. A line in the middle divides the graph into underpainting and detail cycle. The end of the detail cycle is unknown since this is when we stop the process so on the graph the detail end is assumed at 10000 strokes on 10 MegaPixels size (right side of the graph) and proportionally higher or lower for other sizes.

Additionally, unlike the Absolute settings, with relative settings, **both maximum and minimum brushes will change** relatively to each other. This means, in this style we can explicitly tell DAP to paint brushes at certain relative time that are smaller than the Min Brush Size.



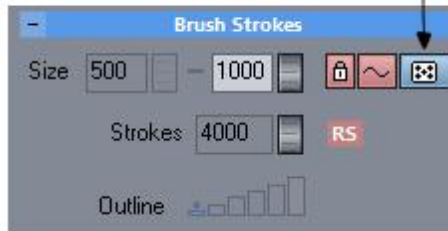
When designing AOP you have to understand the complex relation between the Min, Max and Graph settings.

For example with the image above we will start painting with large underpaint brushes then go towards smaller brushes. As soon as the Detail cycle starts it will repeat, start with spike of large detail brushes then easing towards smaller.

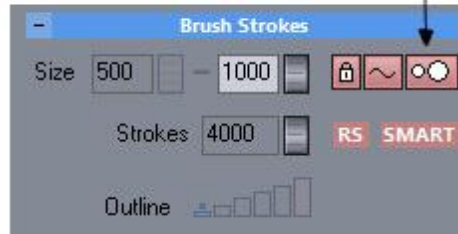
SMART Brush size

New in version 7. SMART Brush size will adjust the brush size depending on the structure of the painting (so for flat areas it would use bigger brush than for busy areas). The Auto-Size graph is still in effect.

Normal Brush Size



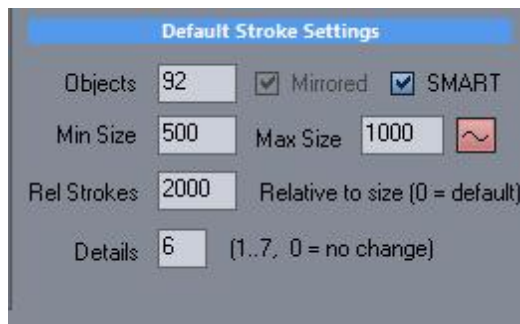
SMART Brush Size



For example if we use normal Brush Size (dice icon) the Brush will change within the min-max size (on the image above it is within 500-1000) regardless of what it is painting - this would be determined by the best placement of the brushes with a certain randomness.

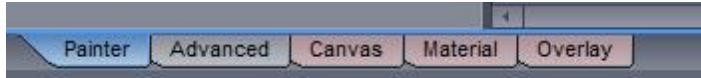
In case of SMART icon the brushes will be used larger for flat areas (1000) while smaller for areas with more details (500)

The SMART can be also triggered from within the template editor or from panel ¹⁹⁴:

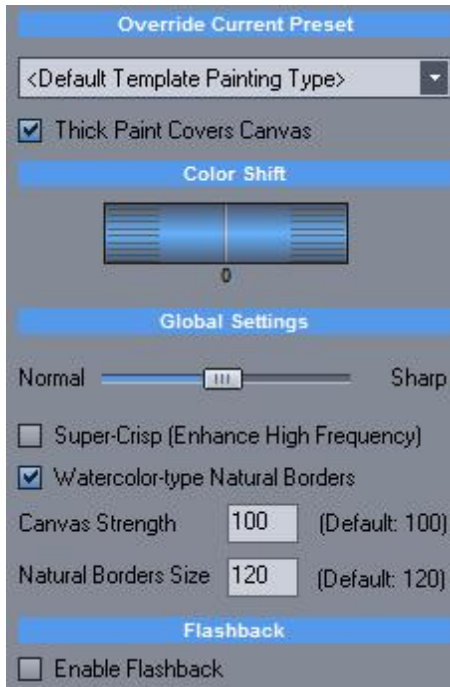


6.10 Advanced

So far all the settings you used were on the first Tab, called Main Painter. There is much more hidden in other tabs. The tabs are on the bottom of the screen and they give you access to various settings and tools.



Advanced Tab



Here are some advanced settings that usually don't need to be adjusted very often.

Sharpness - sharpness of the brush strokes

Override current preset - override the type of painting as set in the template. This allows to experiment with various types without changing the templates.

Super-Crisp - this settings enhance the highest frequency of color changes, giving a crispier look without any sharpening artefacts.

Thick Paint Covers canvas - this indicate that the paint will eventually naturally covers the texture of the canvas at various places where there is more of the paint applied. This has very subtle effect, visible only on close inspection of the full size image but helps further to get the feel of real painted media (for oils or heavy paints). It has been redesigned for pro version to give even more natural look.

Enable Flashback - Enables Flashback feature.

Watercolor type borders

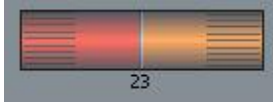
Checked, the natural borders are wide one as typical for watercolor on paper. If unchecked, the natural borders are very thin as typical for oil on canvas. Valid only if Natural Borders on main setting is checked.

☒ Watercolor-type Natural Borders

Natural Border Size - the setting for the Natural Border (in pixels).

Color Palette Adjustment

This is a setting to fine-tune the palette and the color feel of the image.



The meaning of this control is to partially shift the colors in the spectrum. For example we want shift the colors so the red colors will transform into more orange - we will dial the red color in left and the desired color on right.

This is used for adjusting a shade of color not completely replacing the colors. Dialing blue color in left and red in right will not make the sky red, it will only replace one "tube" of color with another and the sky will be still painted with the closest color to its original.

6.11 Mouse Assisted Painting

There are various Brushes that you can use during the automatic painting to manually help the process.



Not all are available from the beginning. The brushes became available as the various cycles finish.

Auto Brush

The Painter paints all around the canvas adding more and more details everywhere with all of the brushes. You may however want it to focus onto a certain part image more than others (for example central object vs background)

Simply click on the canvas where you want more focus hold button for while and move the mouse around the area.



Auto-Brush will only suggest a place for the autopainter to place an automatic brushes. However if the autopainter feels there is no better brush than what is already painted, it will **not** paint at that precise spot but may paint around it or refuse to paint in that area altogether.

Area Auto Brush

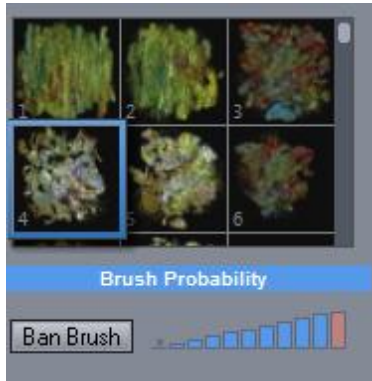
This is stronger command than Auto Brush. It will force the autopainter to paint tat the desired area under mouse. The autopainter is still free to choose any brush.

Fine Area Auto Brush

Just like Area Auto Brush, but the brushes will be painted much finer

Selected only brush

This will not only force to paint at certain area but also force which brush it will be used from the List of brushes (different for each template)



Underpaint Reveal Brush

Adds back what was on the screen at the end of Underpaint Cycle - (by removing Dry reveal and Detail). This is a good option to make background more painterly and remove distracting details.

Soft Reveal Brush

Adds a full strength of Dry Reveal Layer (by removing Detail brushes). This is a good option for faces or other subjects to remove unwanted Detail brushes.

Note: All this can be also adjusted AFTER you hit stop using the Retouch function. It is available during painting to give you an idea, but you can refine the image in more details after you stop the painting.

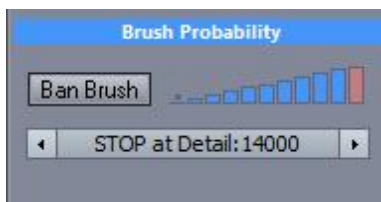
Repaint

Repaint Brush will erase part of the canvas - forcing the auto-painter to repaint it.

Ban Brushes, Brush Probability

You can ban a brush if it turns out to be too disturbing and the autopainter will no longer use this brush until you reload the template.

Or you can lower its probability so the brush will be used less often.



Stop at Detail:

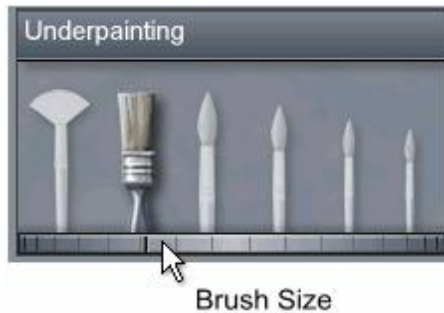
During painting this will let you override the STOP settings. You can choose paint non-stop or Pause at the end brush stroke. The first templates were non-stop. Most new templates are now stopping at certain number of strokes. This setting is accessible only during the paint process and you can change the stop behavior when you feel you still need some time for the detail brushes.

Dynamic Brush size

When Painter is running you can dynamically change the relative size of the brushes.

The brush window will display what size of brush the painter is currently using. (Only when painter is running)

The first four brushes are for underpainting and large areas, the last two are for details.



By default the painter changes the size of brushes in the range set by the Min Brush Size and Max Brush Size. However you can dynamically change it during painting with either the scroll near the Max Brush size or quickly with a dial under the Brush display.

There is special settings that use automatic movement of this control called AutoSize³⁴.

Tip: A good strategy is to set the Non-Stop mode and when painter starts using detail brushes use POI to guide it to important areas. When there is still more details needed, use the dial to move the mark about one brush space right (toward smaller brushes) which will decrease the relative size of the brush.

6.12 Pause Mode

Pause



You can pause the painting process by Right-clicking on the image or from the toolbar. While in pause you can still paint by using left mouse clicks. This is a great way if you need to add a very special detail without disturbing the rest of the image.

To continue, press the Right mouse button again.

Dry Reveal strength:

During the Dry Reveal cycle you can set up the strength of Dry Reveal brush from the pause when you right click on the image and then move the strength bars under the image.



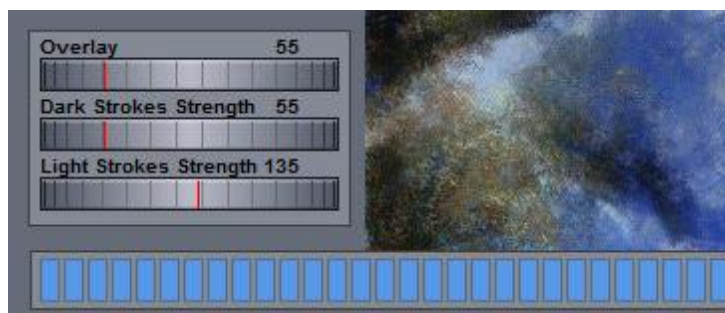
Additionally the PRO version gives you more settings that are attached to the template parameters such as overlay.

When portrait mask is used the settings will affect the part under the portrait mask. (There are two sets of each value in the template)

Overlay - it will deepen the reveal cycle (dark colors will be darker, lights lighter)

Dark/Light Strokes Strength, strength of dark or light strokes from the painted image. The dry reveal cycle will normally soften the harsh brush edges and make the image more realistic and less brushy. However this may not be desirable for all styles where the brush strokes needs to be more pronounced. So increasing Dark Stroke Strength will lessen the softening Dry reveal effect on dark strokes and make them more visible.

When increasing the Dark/light strength it is also usually necessary to increase the overall dry brush strength (the large blue "slider" under the image)



Portrait/Normal Control Set

The template has two sets of values for the Strength, Overlay and Light/Dark. The switch chooses between them. Additionally when a Portrait Mask is used the values from Portrait set will be used where the mask is set and the values from Normal will be used where the mask is empty.



Change Style during Pause (when not in Dry Reveal cycle)

Some of the settings that were disabled during painting will be enabled during pause. Most importantly you can now change the Style. This will allow you to mix various styles during painting. Please refer also

to the Flashback for more tips.

Please note, that some settings will be kept from the master Style, even if they appear to change when selecting new Style (such as Canvas type). Also some simple styles that do not rely on brushes, such as Realism may not have the same effect as if used as master Style (the style you choose during Stop)

Changing Canvas during pause

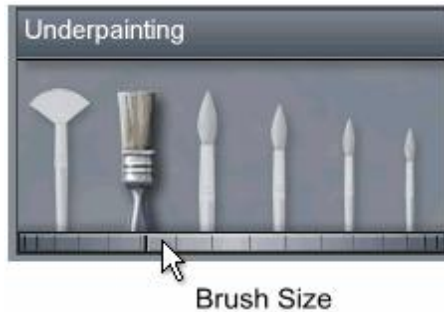
You may decide to change canvas style during the pause, imprint the texture to image or completely remove the canvas texture.

This is done by changing the real Canvas setting during pause. Please note, the look of switching ON canvas during painting may differ from the look of canvas that has been selected from start.

However in the PRO version we added more powerful Canvas Designer, where you can change or remove the canvas **after** the picture is completely painted.

6.13 Dynamic Brush Size

Dynamic Brush Size is a detail refinement process during the painting using the **Brush size dial**.



Moving the dial towards the smaller brushes will decrease the relative brush size, generating more fine details.

An usual process for detail refinement:

- Use the preset defaults
- Set Non-Stop checkbox
- Run the painter
- When the painter reaches the preset number of strokes decrease the brush size with the dial
- Let it run briefly to add small details, eventually using mouse to guide the painter
- Press stop

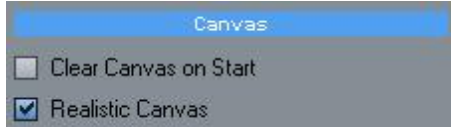
Letting it run for longer period of time with small relative brushes may diminish the painting-like characteristics.

6.14 Multiple Over-paintings

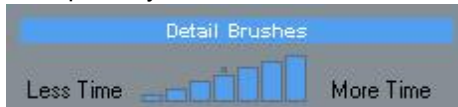
Disabling the **Clear Canvas on Start** will allow over paint the image multiple times, not only with different settings but also with different presets.

A good technique would be as follow:

- choose initial style (for example watercolor)
- process the image as normally
- Uncheck Clear Canvas on Start




- Choose second preset (for example Starry)
- Set the Detail Brushes to maximum - this will start painting right away with detail brushes skipping the underpaint cycle



- Process the image, optionally guide the paint strokes where you want them with a mouse

Using Mask

You can use Detail Brush Mask  to merge two different styles together. More details in the next chapter.

6.15 Paint Masks

Legacy Note: By adding **Retouch**⁹¹ option in version 4, The Detail Brush and Portrait Masks are far less significant (the effect can be now added AFTER the painting is done with the Retouch Brushes, which is the preferred method)

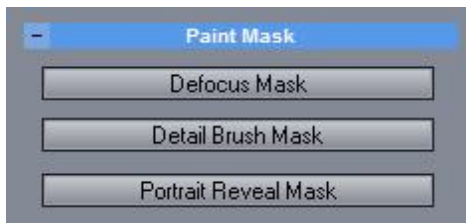


Photo without a mask:

An unedited normal photo usually show too many details in areas outside of interest which can break the illusion of painting or can look disturbing:



Defocus Mask

Defocus Mask will allow you to paint a defocus (blur) mask over disturbing areas of the image. When a real painter paint a scene he would focus his attention to a central object and remove any unnecessary details that do not bring anything of the value and only steal focus from the main subject. A photography is on the other hand full of unnecessary details - that is main reason why a random snapshot seldom has any good paint qualities.



Blurring background will dramatically enhance the painting quality of the scene as this would simulate the process of a real painter.

Detail Brush Mask (Legacy - the manual Retouch⁹¹ option can remove Detail brushes AFTER the painting was done)

This mask specifies the area where detail brushes will be placed.

During the under-painting the image will be painted equally with large brushes so it will keep the shading from the scene. The Detail Brush Mask will affect only the second part of the process when painting with detail brushes.



The result of this is different than the Defocus mask. All details from the image will be painted roughly with large brushes, but they will be detail-painted only in designed area.

This emulates the way when a painter would paint the whole canvas with large brushes, but then later focus his attention only on a central subject to bring out the details.

Detail Brush Strength

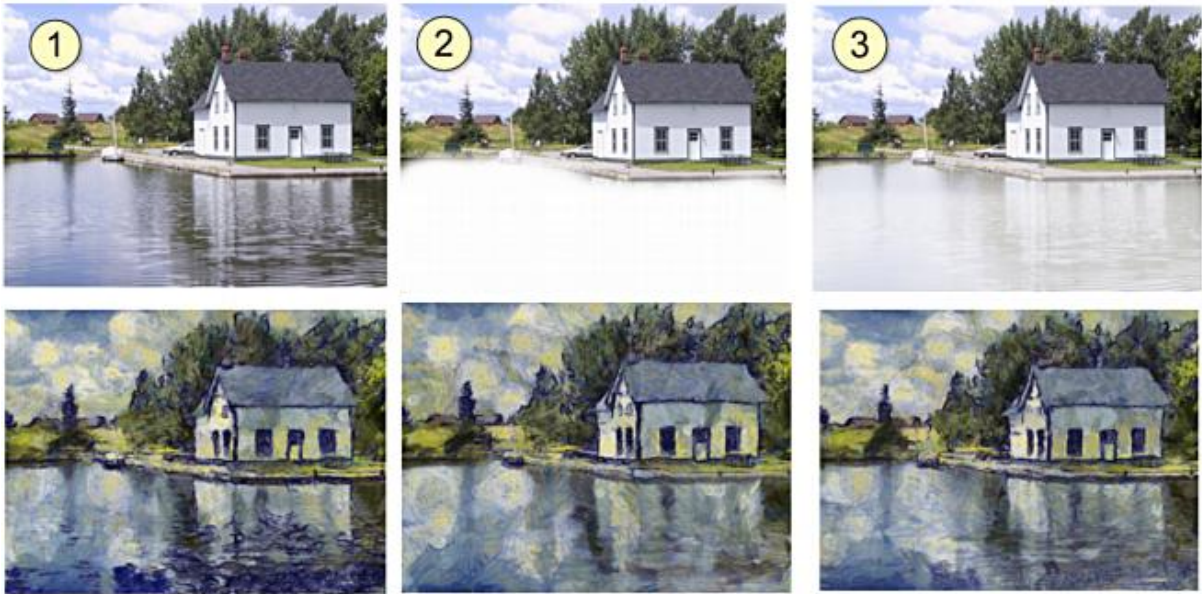
The Strength of the painted brush also determines how the detail brushes will be applied. Instead of completely removing the details from unwanted part we can set for example partial strength. What this will do is to paint the details semi-transparently which is equal to adding more thinning to the paint.

Apply UnderPaint + Detail

This settings will make the mask valid for all brushes - that is for Under-Paint and Detail as well. This is useful for special experiments like multiple under-painting because none of the brushes will be painted outside.

You can combine the Defocus Mask and Detail Brush mask.

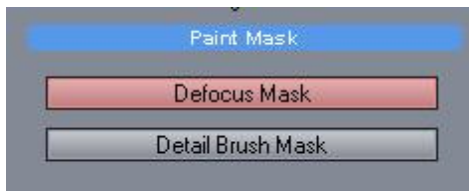
Example: Sometimes we have a good painting only to find out that detail brush will ruin part of the image - this is another good candidate for the Detail Mask, We will paint white (or change strength to semi-transparent) over the part we don't want to be affected by the detail brush.



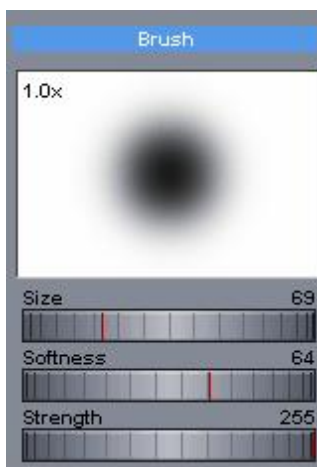
- (1) The detail brush painted details on the water which doesn't look good
(2) Brushing white on the water in detail mask will not paint any details on the water
(3) Setting Strength to half and brushing semitransparent white will make also the details opaque and less pronounced on the water - this probably gives the best effect in our case

Note: There is no need to be very precise in painting any of the masks.

When any of the Mask is active the button is red:

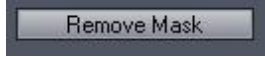


The Brush can be adjusted with the Brush sliders - its Size, Softness and Strength.



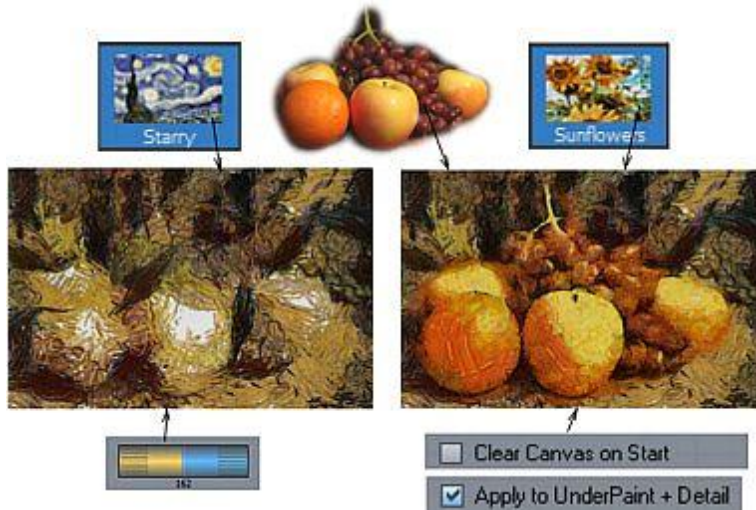
To Remove the Mask:

Open the mask for editing and press Remove Mask in the bottom left corner.



Using Detail Mask for multiple over-painting.

The setting "Apply to UnderPaint + Detail" on the *Detail Brush Mask* can be used to merge two different styles and/or colors together. (Don't forget to switch off Clear Canvas on Start)



Portrait Reveal Mask (Legacy - the manual Retouch⁹⁷ option can add Dry Reveal AFTER the painting was done)

A special type of mask is used for Dry Reveal Cycle mostly in portraits (And also for segmentation cycle in few presets). This mask let user specify the face and any other parts of image that needs special attention (jewelry, garments etc...)

Some presets (like Portraitist) require the Portrait Mask to be defined and it will ask for it before painting. Most other presets can work with or without the mask.

Depending on the image and the style we can paint the mask over the face or over the whole figure.



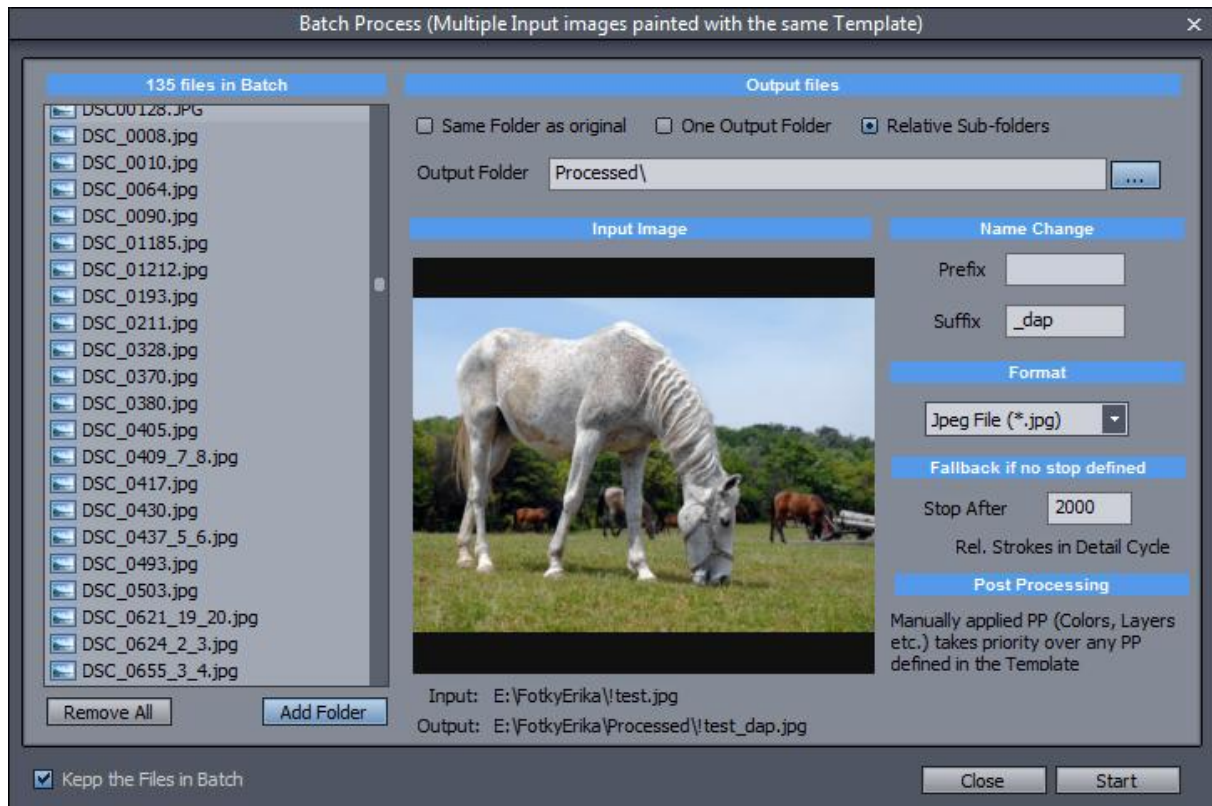


If the image doesn't have portraits or figures (such as still life) and you still require the mask you can paint over the important parts of image (flowers etc...). For landscapes the portrait mask is not desired.

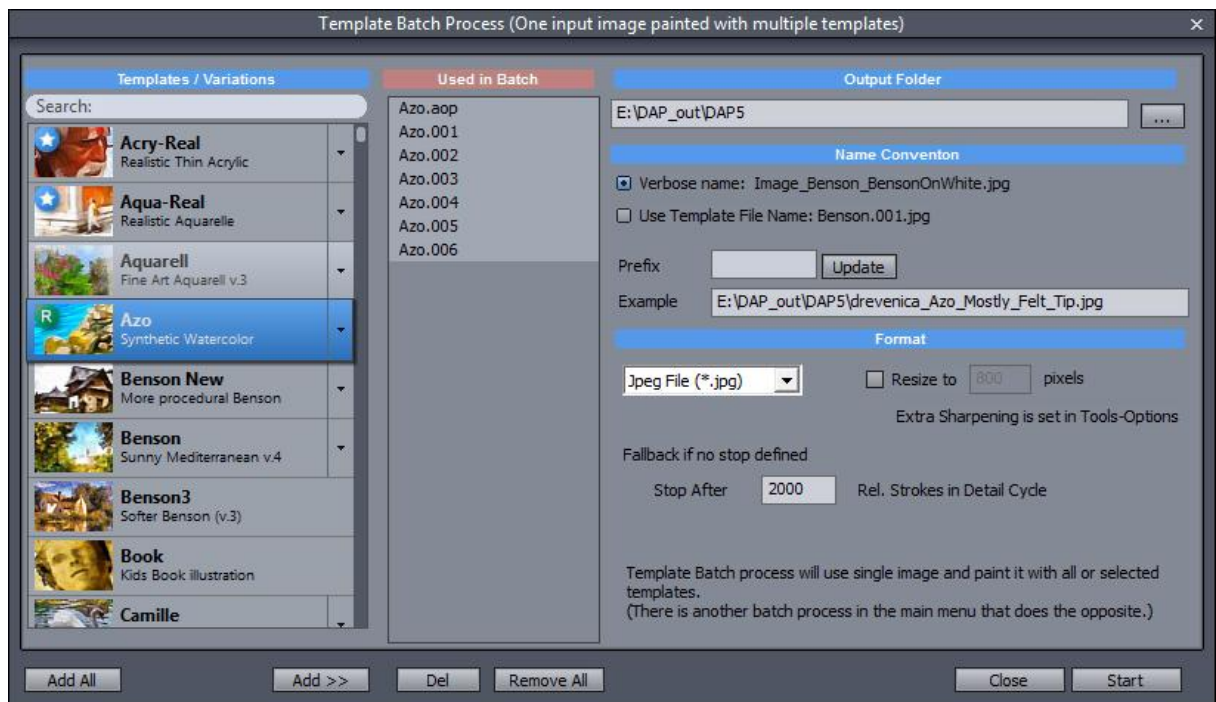
6.16 Batch Processing

There are two ways to paint batch:

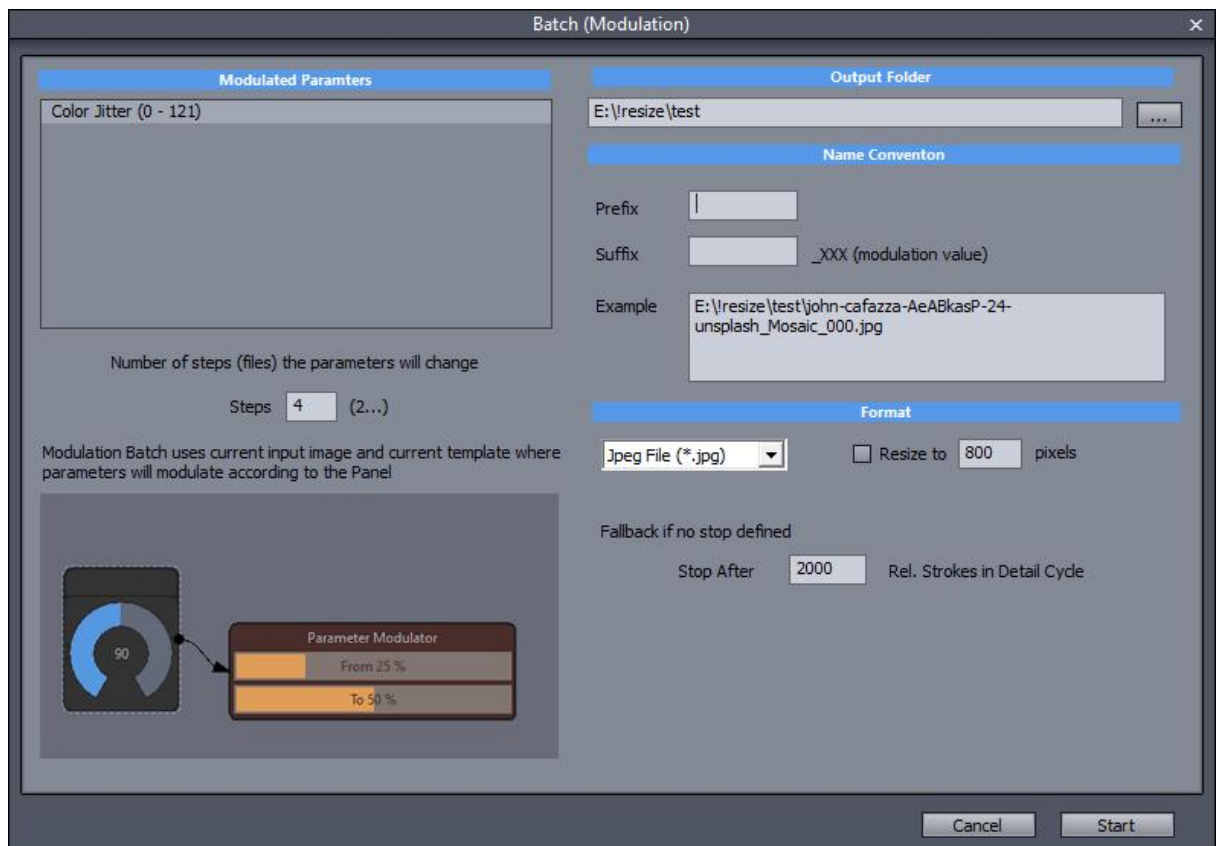
- multiple files with a single template (Batch Processing)



- single file painted with multiple templates (Batch Multiple templates)



- Parameter Modulation Batch (see in Panel-Modulation¹⁹⁹)



The first two dialogs are self explanatory. You need to either add files or select templates to be used in

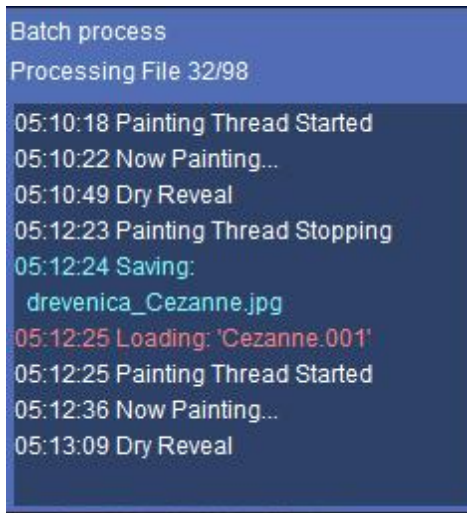
batch then set output folder. Template Batch Process can optionally resize the images. The Modulation Batch allows you to change certain parameters (so it is a Single File with a Single Preset but outputs into multiple results while changing some parameters)

Batch processing will take a significant time!

Since older templates were set to paint to infinity, both dialogs have **"Fallback if no stop defined"** settings which will force such template to stop after certain number of strokes.

Tip: In Template Batch you can add templates by double clicking. If you double-click on contracted template with variations, all variations of that template will be added to the "Used in batch" column.

Batch processing will display a time log during painting:



```
Batch process
Processing File 32/98
05:10:18 Painting Thread Started
05:10:22 Now Painting...
05:10:49 Dry Reveal
05:12:23 Painting Thread Stopping
05:12:24 Saving:
    drevenica_Cezanne.jpg
05:12:25 Loading: 'Cezanne.001'
05:12:25 Painting Thread Started
05:12:36 Now Painting...
05:13:09 Dry Reveal
```

You can stop batch processing same way you stop normal painting.

6.17 Flashback

Legacy function. (it can change in the future)

To enable Flashback go to Advanced Tab and set Enable Flashback in the Misc Global Settings.

Flashback is depreciated in newest version (it still works and is included, but we recommend not to use it as it slows down the painting considerably).



Flashback will add a timeline to the bottom of the image during painting. This timeline will show flashback points (areas of timeline with a blue dot) that represent a certain state of the painting in time.



During painting you can easily rewind the process back in time to previous state and also alternatively go forward in time to the state that was already painted.

Simply move cursor over timeline and click on state you want to return to.



The green flashback point marks the time of Dry Reveal Brush. If you click on it the painting will return to the state just AFTER the Dry reveal brush is complete. If you click on flashback point in front of the green area the painting will return to the state several strokes before the Dry Reveal Brush and will shortly continue with the Dry Reveal Brush.

The last flashback point (which is in about 6000 strokes) is a recycle point, it will cycle over and over if you left the process running. After such number of strokes there is very little continuous change in the picture so the last flashback point will jump to the currently highest painted strokes, while the point in left of it will jump to the finished 6000 stroke.

Tip:

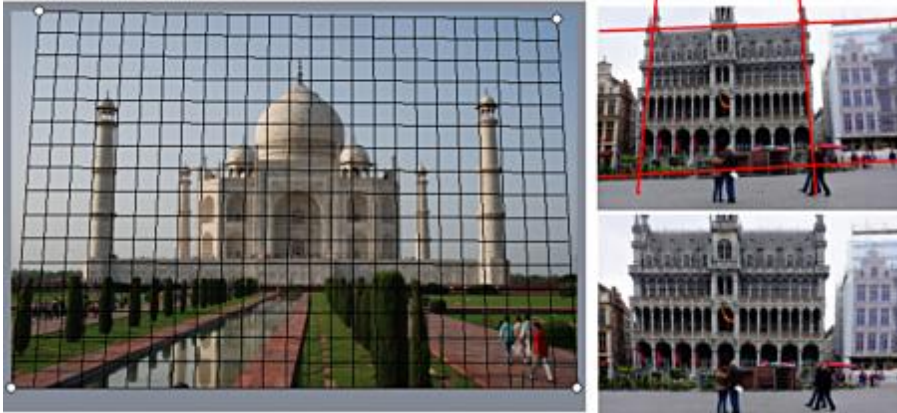
While it is interesting to use the flashback feature on its own on a single style (such as rewind and use mouse to draw attention to some detail) the more important function is when you pause and select different settings or style to mix during the painting process. This way if the mix doesn't appear pleasing you can simply change the style again (during pause) and rewind to previous state. This way you can not only mix various styles and settings, but do it in various times.

6.18 Plug-ins

Plug-ins are extra processes that change the input image.

Perspective Correction

This Plug-in compensates for the perspective projection distortion which is a typical for a snapshot photography where the camera is not parallel to the edges that are required to be parallel in the painting, such as tall buildings.



A snapshot photo with vertical perspective distortion is a giveaway of the origins of the "painting". While painter would obviously use a normal perspective view for horizontal lines, he would (nearly) always paint all the vertical lines parallel. (unless it is for special effect) A building, lampposts or columns would on a photography look like they are falling away from the camera while a real painter would paint all their vertical edges parallel as if looking from a perfectly central position.

Tip 1: Use the Aspect control to stretch the image as needed for the image to look natural..

Tip 2: You can use it also to simply rotate the image for non even horizon

Lens Correction

Lens Correction plug-in corrects typical lens distortion in modern digital cameras: Barrel and Pincushion distortion.



Barrel distortion is visible in wide angles when straight lines appear as an arc, more visible closer to the edges of the image (such as frames, doors, windows, buildings).

It may be not noticeable on the photo as we are all pretty much used to this effect, but on a painted image this become an apparent giveaway that it is a photography source.

Caricature

Caricature plug-in adds set of liquid brushes to DAP to easily distort the source photo into caricature.



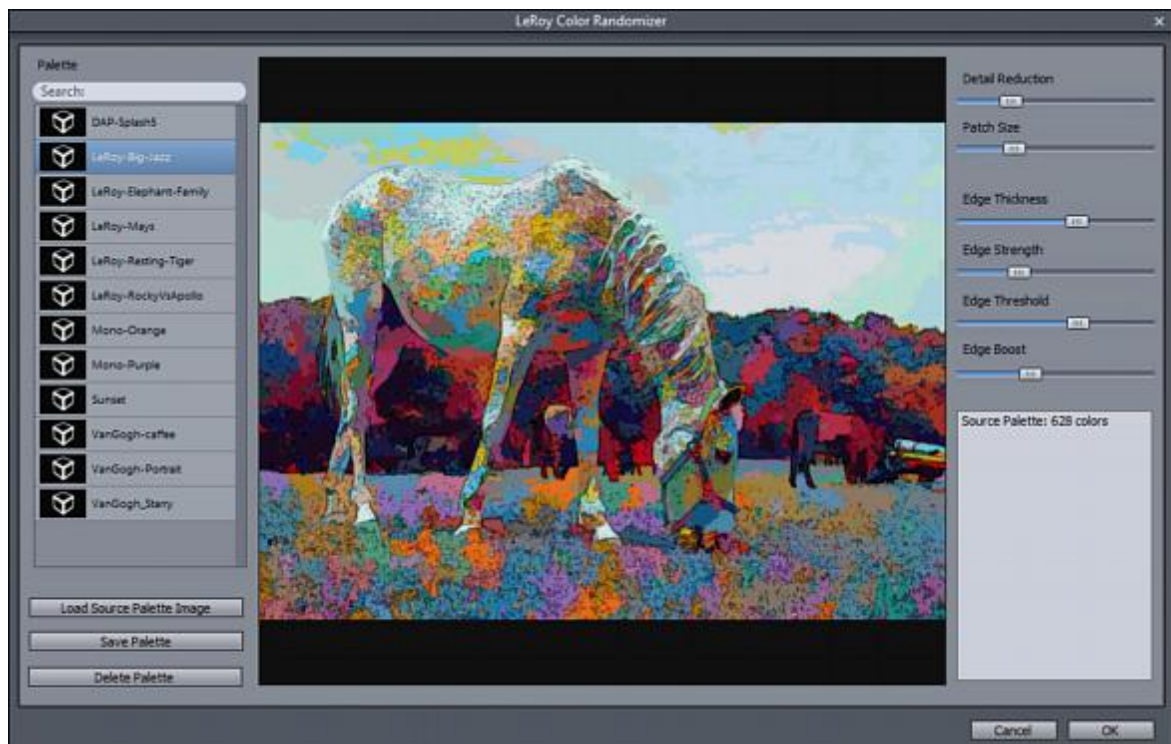
But that's not all! You can also use it for general editing - like adding smile to the portraits, slimming figures or changing their posture. Another example would be adding various deliberate twirls to paintings to experience VanGogh style. Or if you are the adventurous type, use it to create new abstract art by completely twirling and twisting any photo beyond recognition.

New in Version 6:

LeRoy Color Randomizer

This Plug-in simulates the random colors used in for example Leroy Neiman paintings.

There are two uses: Directly changing input image before the painting (when used from within plug-in menu) or use in templates where any of the existing Palette preset can be recalled. When using from within templates¹⁷⁰ there is much more control as you can specify how much the effect applies to underpaint and dry reveal. (Example Presets: Aquarelle Nouveau, Neo Raphaelites, Modern Art) This way you can create spectacular colored images with varying colors.



The output of the LeRoy Randomizer may not look immediately very appealing when applied directly to a photo, but the auto painter uses the input image as a guide and will repaint it using real brushes which

will change its character.



Settings:

Load Source Palette image - this is the image (painting) from which the palette will be created. It will find all unique colors (in hundreds) and then only those colors will be applied to the input image. For example palette from Starry Night will be in blue and yellow colors while for example Monet palette will have light and pastel colors.

Save palette and Delete Palette will save/delete the loaded or currently used Source Palette to the presets - together with the settings on the right side such as segmentation and Edge. You cannot delete factory supplied palettes as they may be used in other templates, you can delete only palettes you created by yourself or changed and saved.

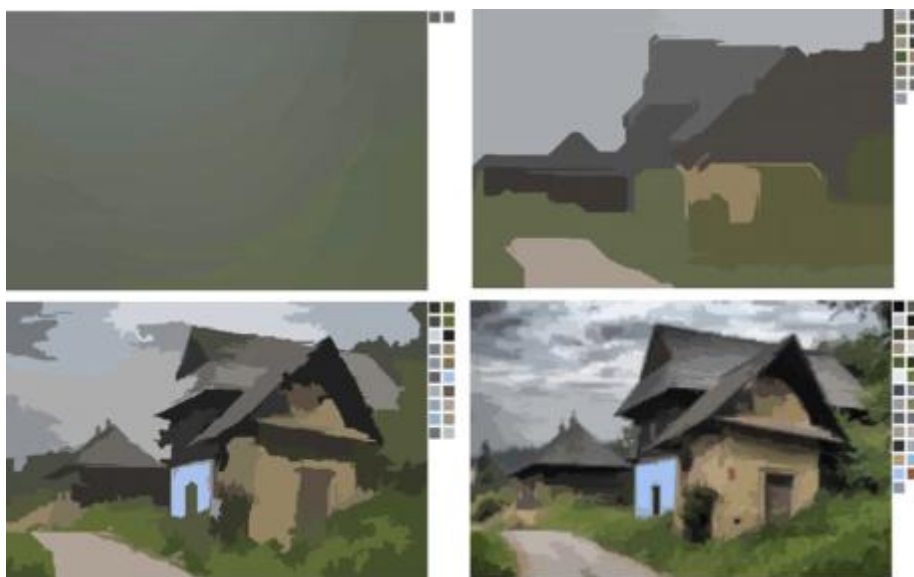
As for the settings on the right side - there are no rules, just find what you like and if you want to save it to presets use Save palette.

The saved presets can be then recalled from Template Editor and it will adjust every image for that template.

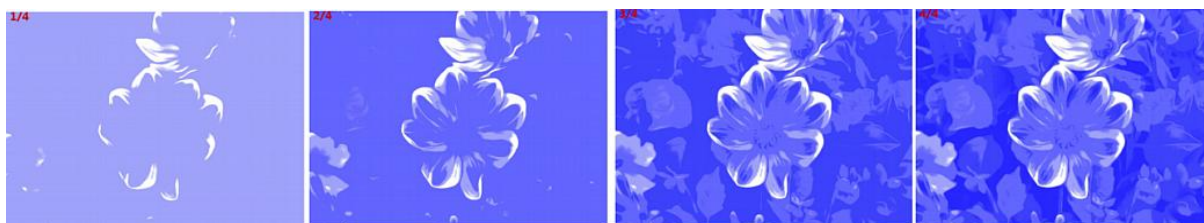
6.19 U-Paint Helper

More and more people are using DAP as a preparation tool for their real paintings. We took this even further with the U-Paint plug-in.

(Menu Plug-ins)



U-Paint will break down the image into various steps that can be then used as a guide to paint it by yourself. It starts from the very basic shapes and "blocking" of large areas then refine it further with additional steps until final image is achieved.



There are few options:

Style: Step-By-Step Layers, Mask Previous Step, Transparent Overlay - this will generate the image in various ways, the first option is a cumulative, each additional step will keep adding to previous steps. The two other options will show only the current step with either Masked areas where you don't paint or those areas will be fully transparent.

The images generated by U-Paint can be of course also used for other purposes than painting. For example exporting Transparent Overlay will create set of images that can be stacked in photo editing software.

Add Color Swatches - this will add the colors used in each steps on the right part of the image

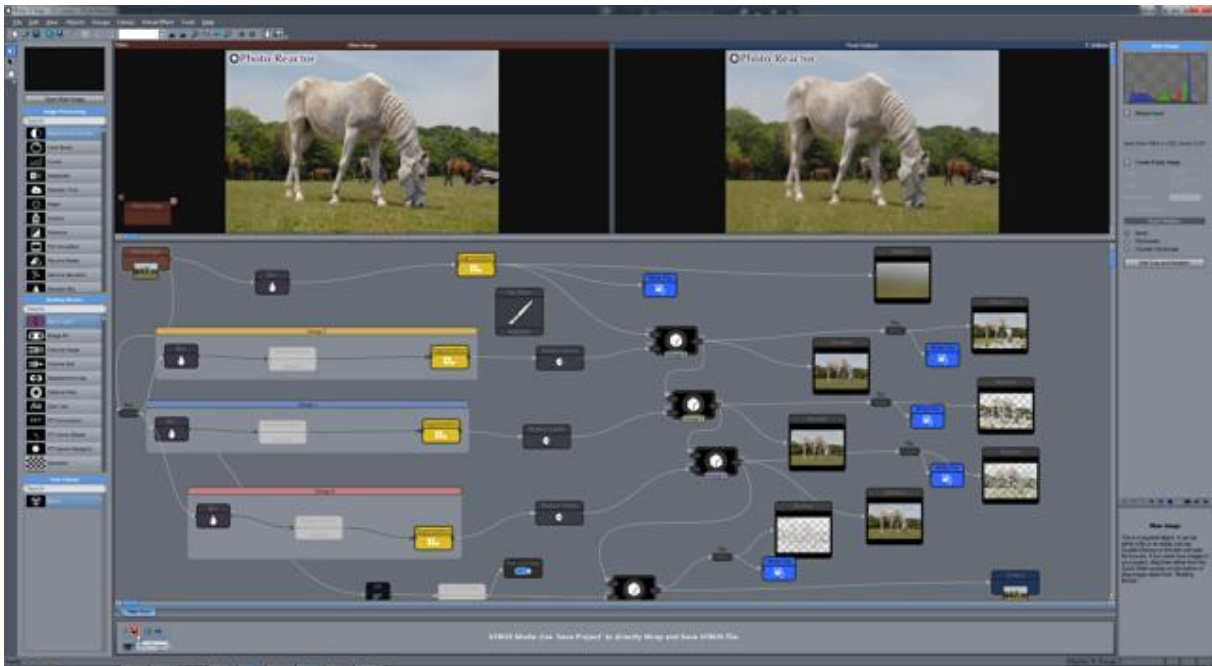
Add Registration marks - this will add registration marks to the images.

Guide for Photo-Reactor users:

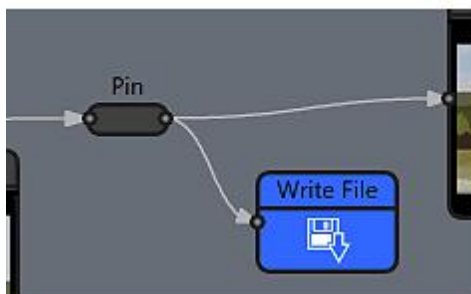
The plug-ins are created in Photo-Reactor. The goal is to create various simplification steps that would ultimately add up into final image. You can edit the supplied presets to see how this is achieved.

Each step is in general a transparent "overlay" that when stacked will produce the final image. (May not be always true - it depends on the reactor project itself)

But it doesn't mean it had to be that way. You can have steps anything you want - they don't need to stack or combine into a picture. The final reactor flow is then saved as vbox file and put into the User Documents\DAP\upaint folder. (When you are editing directly from the DAP interface, this will be all done for you)



Each step is generated by attaching Write File Block where appropriate. The Write Block needs to have Name: "step" and also set "Add Number" which will then become the step number (make sure you don't have gaps in numberings).



File Name

☒ Name

Label

☐ Suffix

Label

☒ Add Number

Start Number

This works only during final Export.
The file will be written to the folder
where you save the Full Output

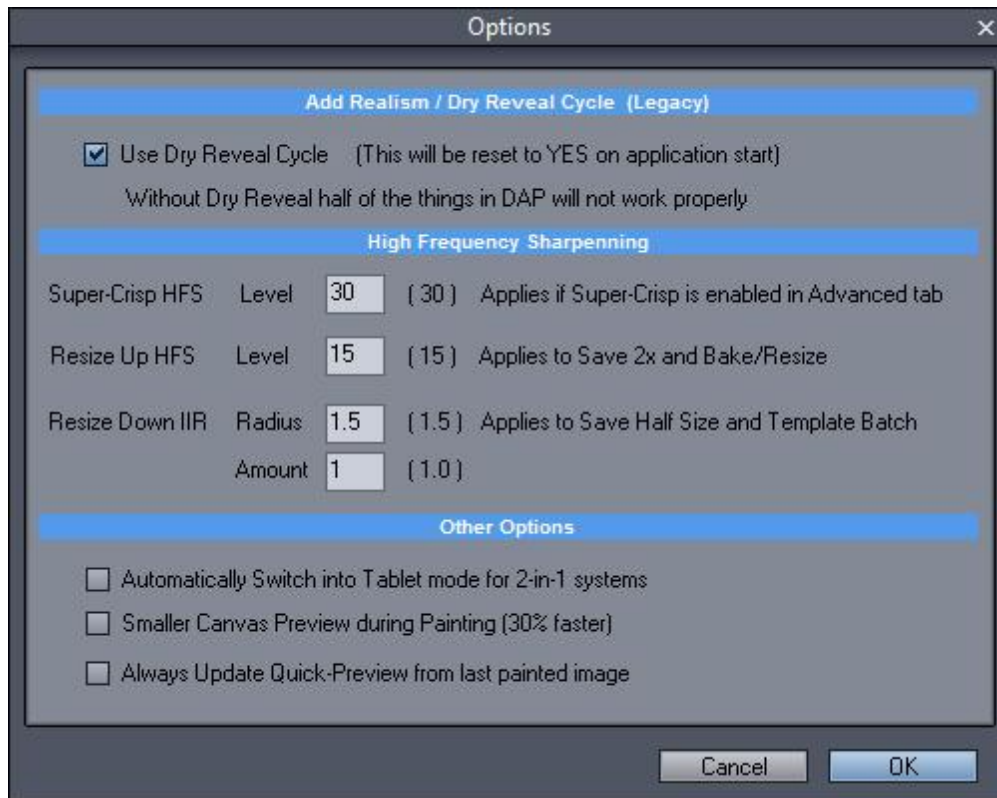
Note: The DAP uses versioning system where the stock presets are always kept as a shadow copy. If you by accident overwrite the stock preset in the User Documents, you can always go back to the stock version by simply deleting it or renaming the file.

6.20 Settings and Options

Menu Tools:

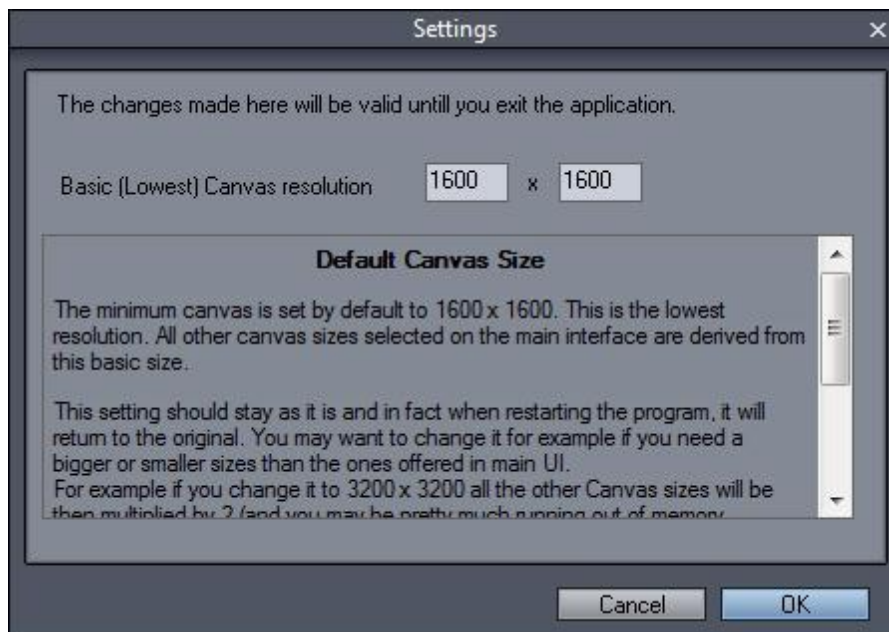
The Options can be reached only when no image is loaded in the software - right after the start.

Here are various sharpening settings and other switches. In general keep this in default (as on the image).



Default Canvas Size

This is to set the Standard Canvas Resolution.
By default it is set to 1600 x 1600.



This is the smallest canvas size that can be selected from the main interface in the Resolution combo box. All other sizes are various 1.5x multiplies of this basic canvas size.

With the basic size is set to 1600x1600 the different canvas resolution will be:

2.5megapixel: 1600x1600 (same as basic size)
6 megapixel: 2400x2400
10 megapixel: 3200x3200
16 megapixel: 4000x4000
24 megapixel: 4800x4800
32 megapixel: 5600x5600

Do not confuse the canvas size with the digital photography size.

A painted canvas uses every pixel in full color while a digital photography uses bayer sensor which is approximation of 4 primary color pixels.

Therefore for digital photography we need a far higher number of pixels (in fact about 4x)

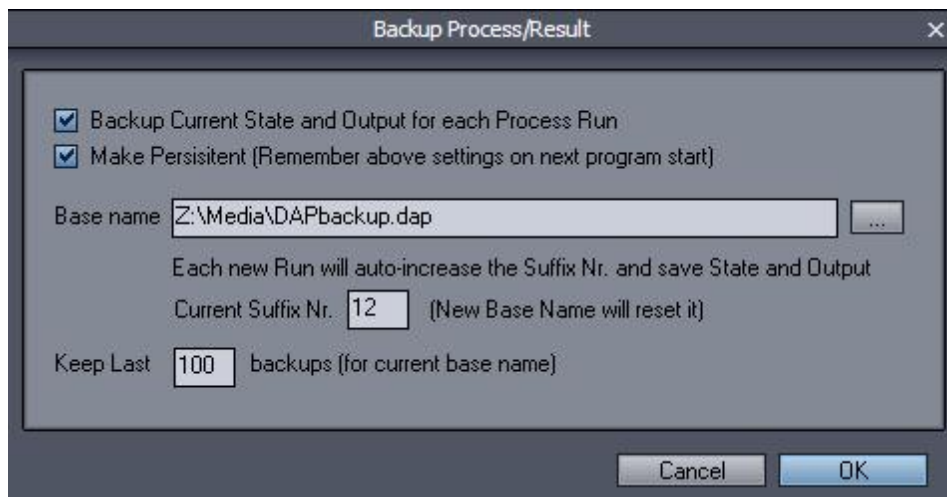
If you increase the canvas size the painted strokes will become finer on the output and you will need to increase number of strokes accordingly. (For example If you double the size you will need to increase the number of strokes at least 4 times.)

For all normal results (web/print) there is no benefit in changing the canvas size. This setting is here only for **special** cases when truly larger canvas is needed, therefore it always resets back to the minimal 1600x1600 when you exit the software to keep everything in best working order.

Auto-Backup

menu: Tools - Auto-Backup

If set, it will incrementally save output and data settings into a backup folder each time the painting is finished/stopped. In case you are experimenting, you can always go back to the previous version.



You just need to select base name in a folder for backup and each time the painting is finished/stopped the data (*.dap) and output (*.jpg) will be saved there as for example DAPbackup1, DAPbackup2... etc.. The *.dap files can be loaded back using File-Load State and contains the name of preset and changed settings.

If you use the Make Persistent, this settings will be remembered on next program start. The system will keep the last 100 (or specified) sets of backup for certain base name.

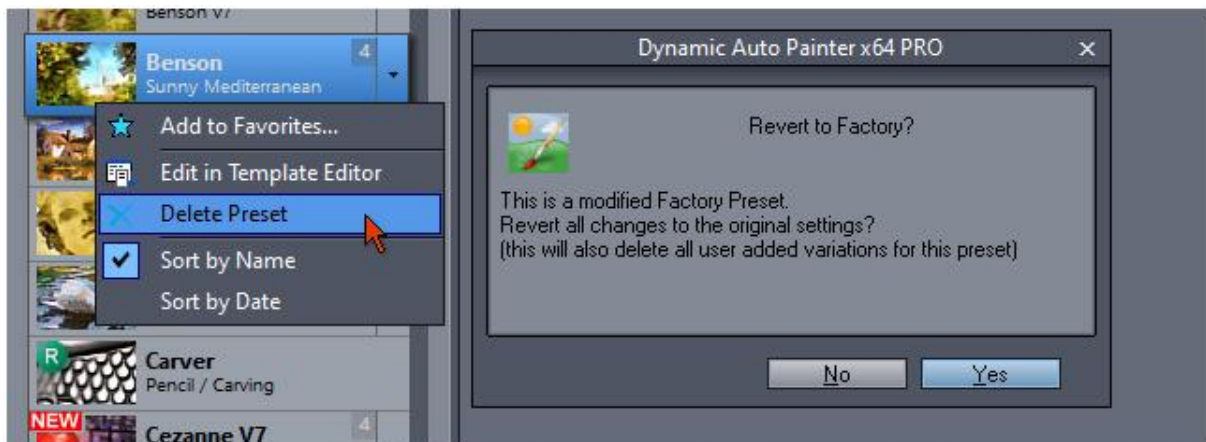
If you want to keep all the previous backups permanently, just set a new base name.

Please note that 100 backups will need at least 200MB and more.

6.21 Organizing Templates

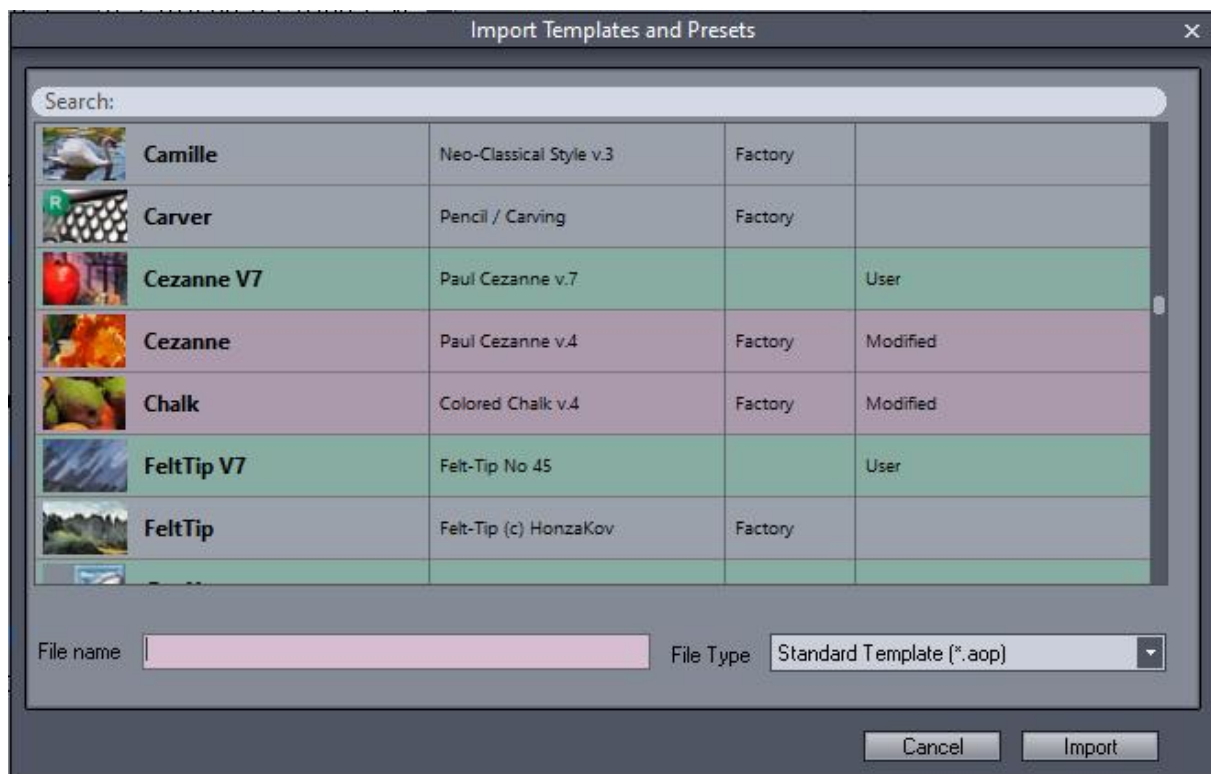
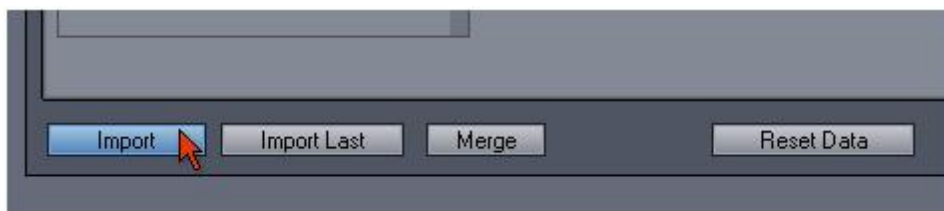
All factory presets are installed within program folder (ex: C:\Program Files\DAPPRO7\objectpacks\) but any changes in the preset you have made are saved in C:\User\<name>\My Documents\DAP\objectpacks. DAP will automatically show only one preset in the Preset Library (the saved files in My Document Files have priority over the ones in Program Files).

This means you will always have a copy of Factory presets and you can revert to original state by simply right clicking on the preset and choosing "Delete Preset" from the interface.



If you create a new preset in editor (or re-save a preset with a new name), it will be created in the My Document Files and deleting it as above will fully delete the preset.

You can see the status of the template if you go to Edit in Template Editor and click on Import button



The preset can be one of three: Factory (pale color), Factory Modified (red color) or User (green color)

Factory is a preset that has never been modified and exist only in C:\Program Files\DAPPRO7\objectpacks

Factory Modified is a preset that has been modified and it exist in C:\User\<name>\My Documents\DAP\objectpacks and in original state in C:\Program Files\DAPPRO7\objectpacks

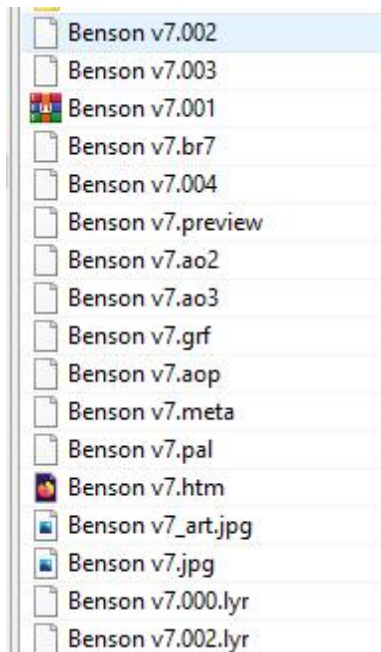
User is a preset that has been created as new and it exists only in C:\User\<name>\My Documents\DAP\objectpacks

Subfolders

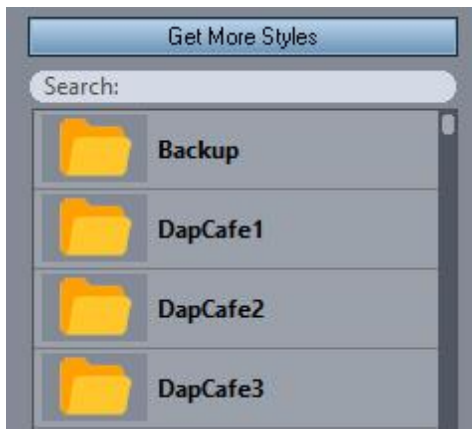
The user space at C:\User\<name>\My Documents\DAP\objectpacks can have subfolders

It is simply a subfolder with any name where you can copy or move some of your presets). This can be done with Windows explorer.

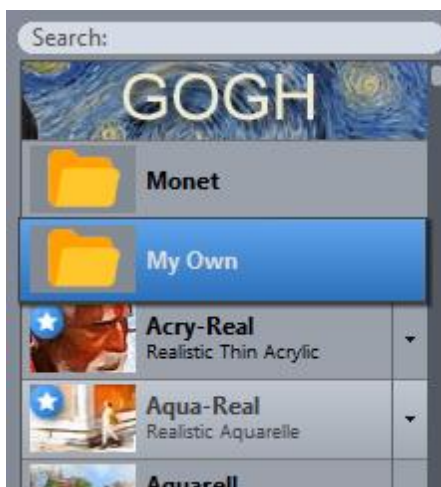
Note: each preset consist of many files and if you want to organize them in subfolders, you will need to move all the files related to that preset name. (this could be 10 or more files)



Subfolders will appear at the very top of the Preset panel



You can create a banner for any subfolder by adding a file banner.jpg inside the subfolder with the dimensions 204x40 and your graphic that will appear instead of the Folder icon and name.



7 External Applications

7.1 Combine images in Photo-Blend

Photo-Blend

<http://www.mediachance.com/photoblend/>

Photo-Blend is a separate software that can quickly combine parts of different photos into a montage that can be then painted into a purposeful art. This rapidly increases the quality of painting from just a snapshots to an art by removing unnecessary parts of images and arranging the objects into a real paint-worthy scene.

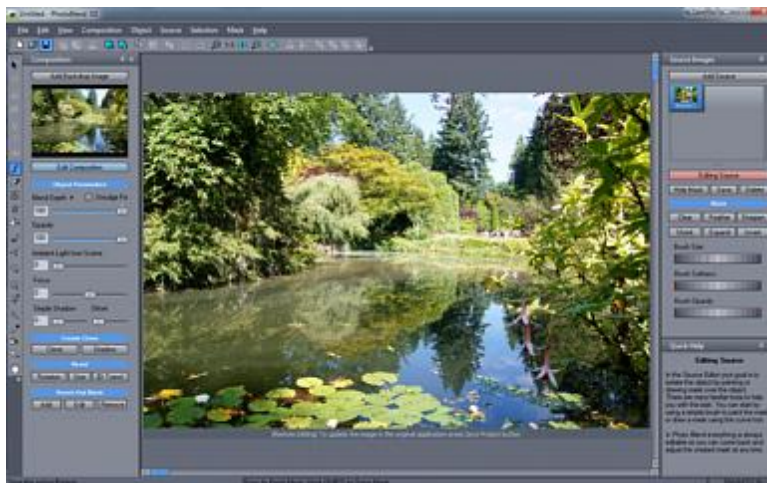
This is a very rough guide of typical steps. there is a whole interactive tutorial in Photo-Blend that will give you teach you more of the basics.

Usual steps:

1. Open image in DAP (You can start new composition in Photo-Blend directly, this just shows the integration with DAP)



2. Use menu Edit - **Edit New Composition in Photo-Blend**. The input image will be opened in Photo-Blend.



Note: the following tutorial is a very simple description of the basic idea behind Photo-Blend. There is much more detailed tutorial in the Photo-Blend software as well as PDF help file.

In Photo-Blend you create objects from source images (right side of photo-blend) and place them on a backdrop image as objects. The integration with DAP will open the input image as a backdrop and also create one source of the same image as a courtesy - this is good if we want to re-arrange things on the image itself or cover some parts of image with other parts of the same image.

In our example we don't want that, we can either delete the source (use Delete on the right side under the list box) or just leave it there as it is because it is not visible until we draw a mask on it..

The Photo-Blend has two modes, the source mode (right side) where we draw mask on the object to define what object is and the composition mode (left side) where we arrange the object on the backdrop.

I want to add a person to the garden backdrop.

3. Click the Add Source and select desired source image of the person.



4. To create mask over the new loaded source, click the Edit Source button on the right side.

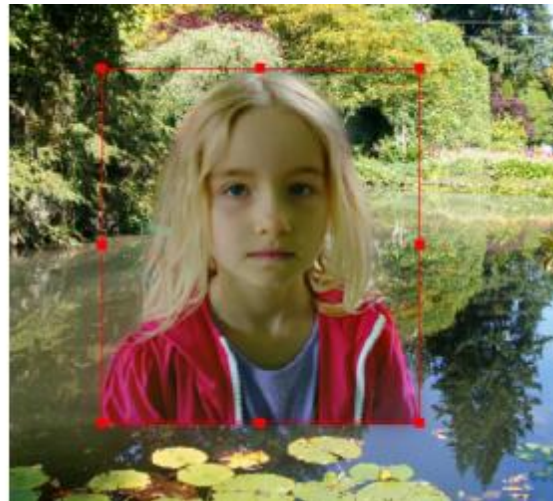
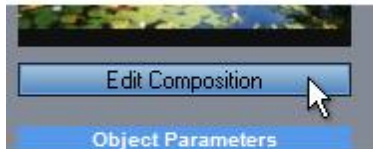


5. Photo-Blend has many great tools to create mask over the object we want, from simple painting to sophisticated automatic and lazy masking. This is described in more detail in the Photo-Blend tutorial. The goal is to create a mask over the object we want to include on our backdrop like this:



6. When the mask is done, press the Edit Composition button on the left side of the program. This will switch to Composition mode where we can resize, rotate and place the object on the backdrop. One of

the strong features of photo-blend is that it will automatically color correct the object so it fits with the color palette of the backdrop and it doesn't look like a cut out.



7. When the composition looks fine, all we need to do is to press **Save Project**. Because we invoked Photo-Blend from inside the DAP, the Save Project will automatically export the image and send it back to DAP without asking anything.

If you use the Photo-Blend separately, you would use menu File - Export Full Resolution instead to save the result to an image file.

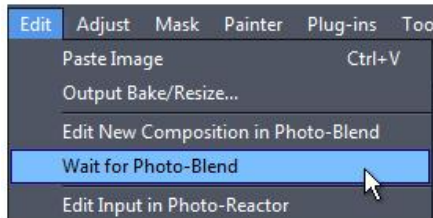


8. Now the composition will appear in DAP and we can use it for our painting.

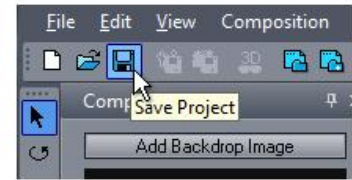
The Photo-Blend application will **not** close automatically, just minimize. This is important if we want to adjust the image later. So **do not** close Photo-Blend yet.

9. In the previous step we didn't close the Photo-Blend completely, it is just minimized. If we need to adjust something in our montage, for example resize the person or add/remove objects, all we need to do is set DAP to **Wait for Photo-Blend** (which will display the *Editing in Photo-Blend* box and wait) and then maximize the Photo-Blend that still has our project. Now change few things in Photo-Blend and re-save exactly as before which will send the newly adjusted image back to DAP.

In DAP



In Photo-Blend change things... ... and hit Save Project again



We can do this for as long as we don't close the the Photo-Blend with our linked project. Remember to successfully "grab" already linked project from the Photo-Blend we have to use the **Wait for Photo-Blend** not the **Edit New Composition in Photo-Blend** function, otherwise it will create new linked file (that means the backdrop will become the previously composed image).

We use **Edit New Composition in Photo-Blend** only when we want to create brand new composition from the input image loaded in DAP.

Note: In general for such image where the main subject is a person we would likely adjust the backdrop as it is too busy and too photographic to be a backdrop of a painting. In the next chapter we will use Photo-Reactor to adjust the backdrop before we compose the final image in the Photo-Blend.

Photo-Blend can be used separately as easily. This will then require to Export Full image to our drive and load it in DAP. Invoking Photo-Blend from DAP interface avoids those few steps and allows for fast changes without intermediate files.

7.2 Adjust images in Photo-Reactor

Photo Reactor

<http://www.mediachance.com/reactor/>

Photo-Reactor is the king of image adjustments and effects. In other parts of this tutorial we describe how the Photo-Reactor is used to modify VFB0X virtual effects. But that is not all, Photo-Reactor can be as easily used as a photo editor to adjust the input or even the output image.

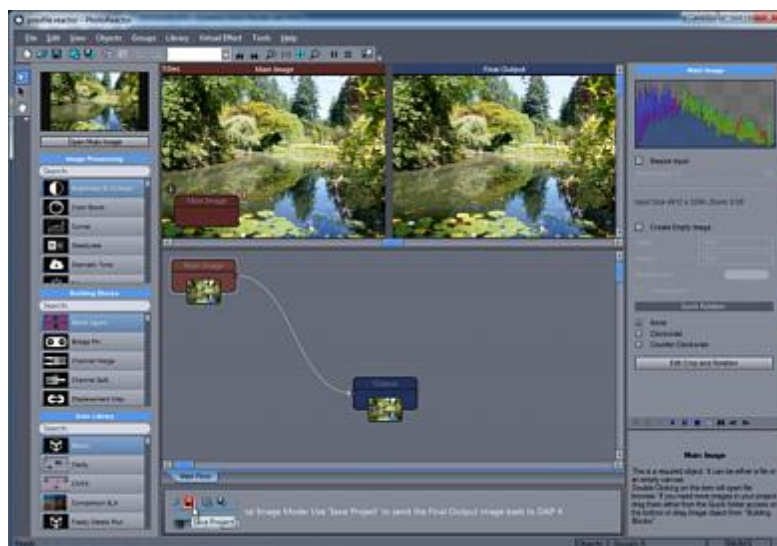
The work-flow is very similar to the work-flow with Photo-Blend. You can send the input image straight from DAP to Photo-Reactor and then use Save Project button in Photo-Reactor to send it back to DAP after adjustments have been made.

Usual steps:

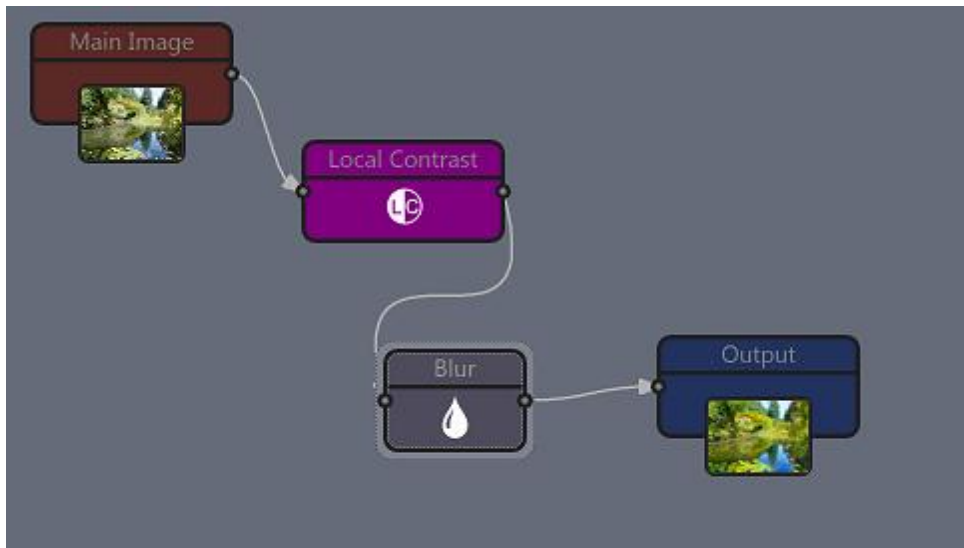
1. Open image in DAP
2. Use menu Edit - Edit Input in Photo-Reactor



3. In Photo Reactor we chain various effects in a flow. You see Input and Output "box" on the design area linked with a line. We can put any effect between those objects. This is done by dragging the effects from the list boxes on the left part of the screen and dropping them on the line.

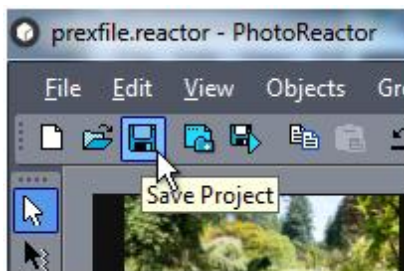


4. In this case we added a local contrast and a blur

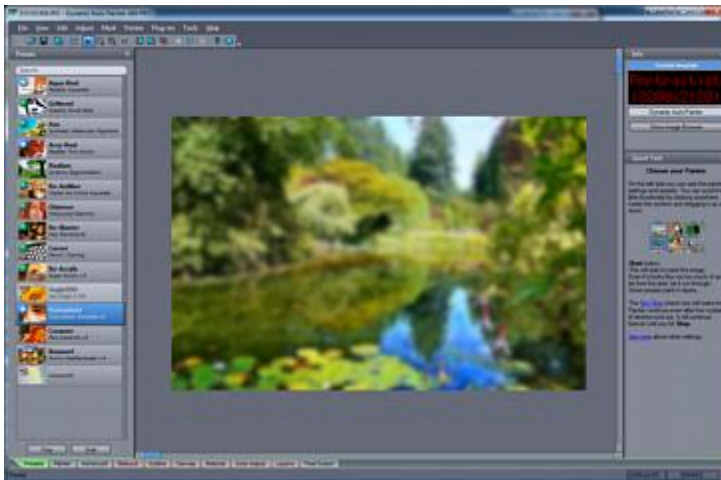


Imagine such effect to be a backdrop for the composition we described in the previous chapter Combine images in Photo-Blend^[66]

5. As with the Photo-Blend, when reactor is invoked from inside Auto-Painter we use Save Project to send the result back. (If used as stand alone, we will use File - Export Output image)



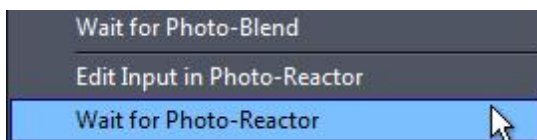
6. The adjusted image will appear in Dynamic Auto Painter.



7. Now we can (for example) continue making a composition exactly as described in the previous chapter by invoking Photo-Blend. using blurred backdrop will create image that is focused on the person instead on the background.

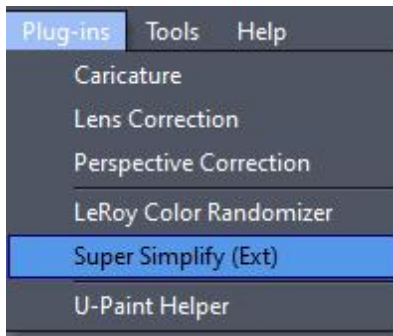


8. As in the chapter before, the Photo-Reactor will not close but continue to hold link to the DAP input image. Any time we can easily make changes in the reactor and send the image to DAP by using **Wait for Photo-Reactor**. (See the previous chapter, the idea is exactly the same)



7.3 Simplify in AIE

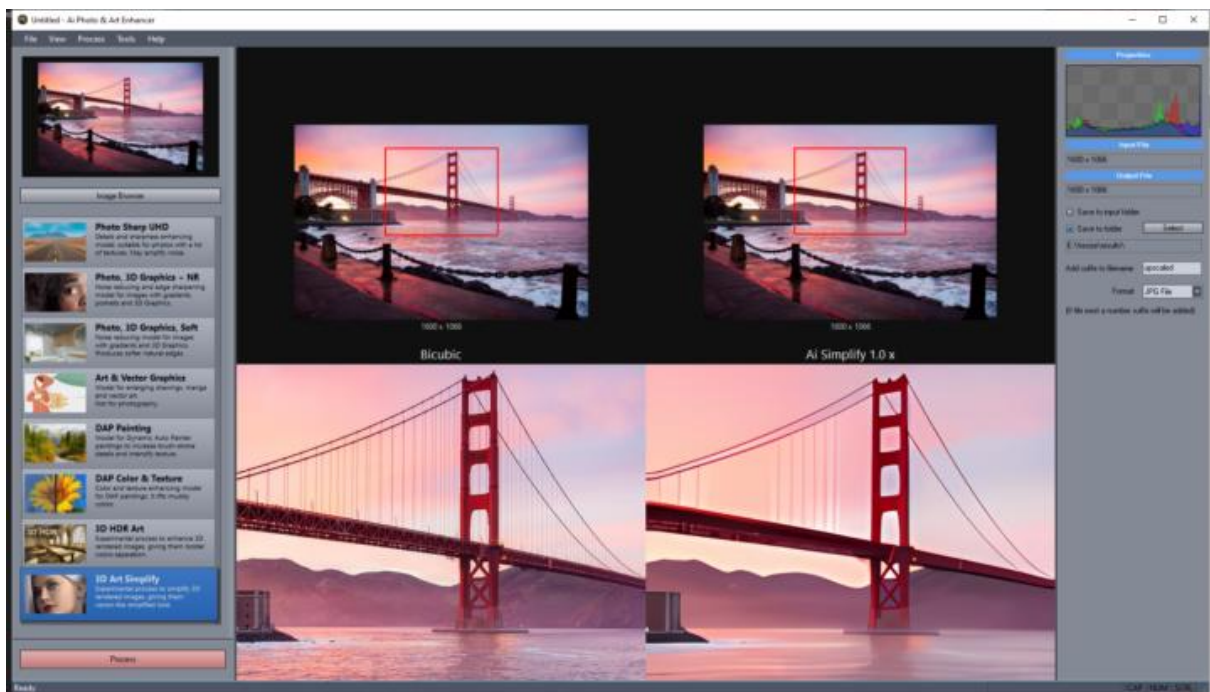
Simplify images in AI Photo & Art Enhancer



To simplify image using AI process, use the Plug-in Super Simplify. This will call external application



<https://www.mediachance.com/aienhancer/index.html>



All you need to do is to press Process.

The simplified image will have a vector-like look with the "essence" of the image that is a great starting point for some painting presets, especially water-color type of presets or presets with no heavy brushstrokes.



7.4 Enhance for Print

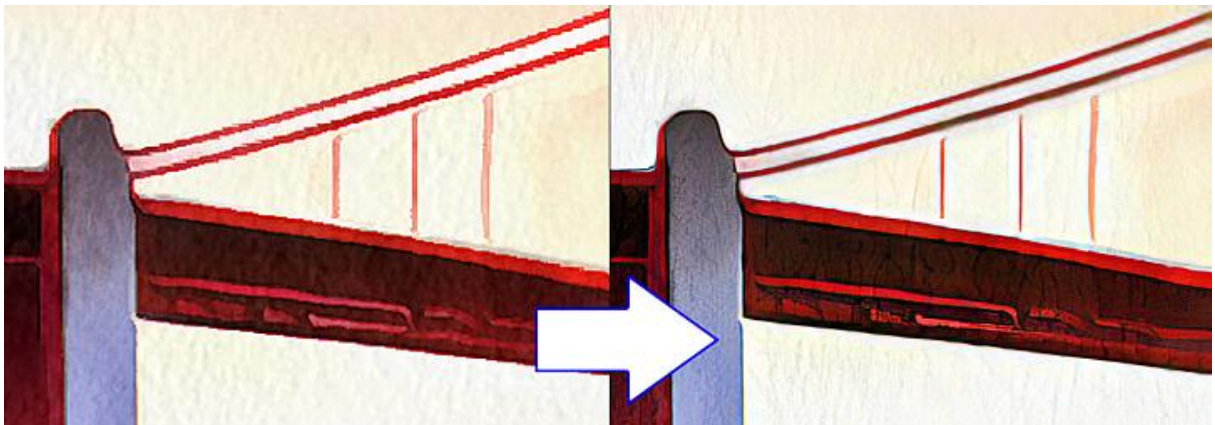
You can enhance the image using AIE (external application) directly from tab Final Output.



<https://www.mediachance.com/aienhancer/index.html>



This process adds more details to the final image and enlarge the file for professional printing.



8 Adjusting Input

Besides using crop, rotate and the basic input adjustments^[15] that were described in previous chapters there are few advanced tabs for input changes.

The tabs for input adjustments (before painting) are pale blue.



The Painter^[28] and Advanced^[37] were described previously in Quick Start.

8.1 Grade

Color Grade is a non destructive way how to change input image colors



Each Shadows, Midtones and Highlights have separate color grade wheel. When you click on the eyedropper icon, you can pick a color from image to compensate. This color will be then used to color correct the particular tone (so if you pick in Shadows a dark color that has red tint, the color wheel will compensate for it by selecting more blue/green color so the particular selected tone will appear more gray).

The bottom graph is a curve graph that allows you to change the intensity and contrast of particular areas. (For example lift dark areas)

8.2 Follow

Follow feature works with Feature Follow ¹⁷³



While feature follow in template would automatically determine the direction of brushes from the image features, Follow tab adds even more refinement by allowing to manually set the direction.

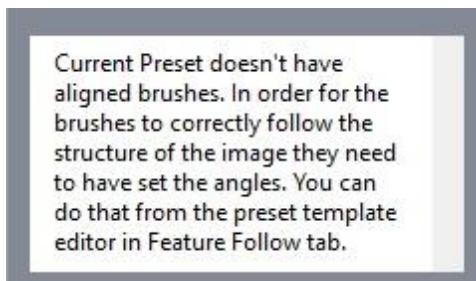


How? Before the painting process paint brush directions with the mouse.

Custom Brush Follow - once enabled this screen would override automatic Feature Follow in template.



The selected template (preset) needs to have bush angles set (Aligned Brushes). If the preset doesn't have set angles (old preset, custom preset, or non-brush preset) a warning will be shown.

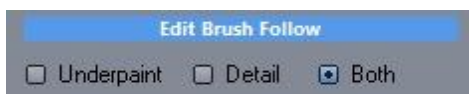


Using Follow with preset with non-aligned brushes might have undesirable effect.

See more in Feature Follow [\[173\]](#) how to create Brush angles.

Edit Brush Follow

The directions can be set separately for Underpaint or Detail. If you use Both, then both underpaint follow and detail follow will be the same.



Brush Size - sets the size of the brush to paint the directions

Preview Density - only sets the density of the displayed lines in the preview window on the right. It doesn't have impact on the actual result.

Brushes:



Directional - draws the brush angles in the direction you drag the mouse

Auto - it will draw the directions under mouse to automatically follow the features (like Feature follow, but only in certain areas)

Random - randomly set angle under the mouse.

Tools - here you can set entire canvas to certain direction

Automatic - sets entire canvas to the same as Feature Follow would be.

Notes: It isn't necessary to try to be super precise. The idea is to draw directions roughly how a painter would logically drag the brushes. You don't have to try to pinpoint an exact corner - the overall painting process adds a bit of randomness anyway.

While in some styles and presets the brush angle may not have too much impact there are some presets with clear brush strokes where it can play a vital role.

One of such example may be mosaic where creating the correct Follow can be the difference between a natural-looking mosaic and a chaotic one.



8.3 Inpaint

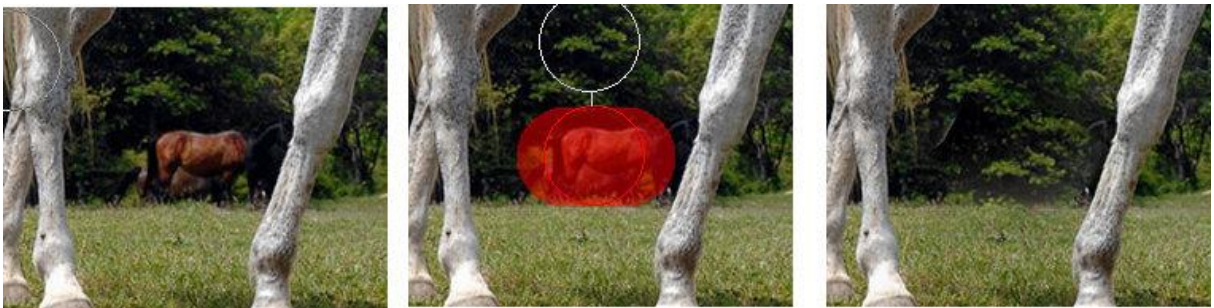
Inpaint is used to remove unwanted objects from image before painting



In older version there used to be "Remove Unwanted Parts" tool that was later removed (the irony!) as it couldn't keep up with any larger size images. This is an ultimate rework of that idea with much more options.

There are in fact 3 new tools:

- the very effective Smart Patch Tools (for large elements) that can seamlessly patch unwanted parts with any other image parts,
- Auto Heal Brush (for small parts) that will replace small blemishes with surrounding patterns
- Clone Brush known from typical image editing programs.



The Smart Patch will not only replace the selected part of image with another part, but also fit it there without obvious seams.



All the tools will use brush and you can change the size of the brush.

The **Soft edge** and **Opacity** parameters are valid only for the Simple Clone Brush and Revert Back Brush.

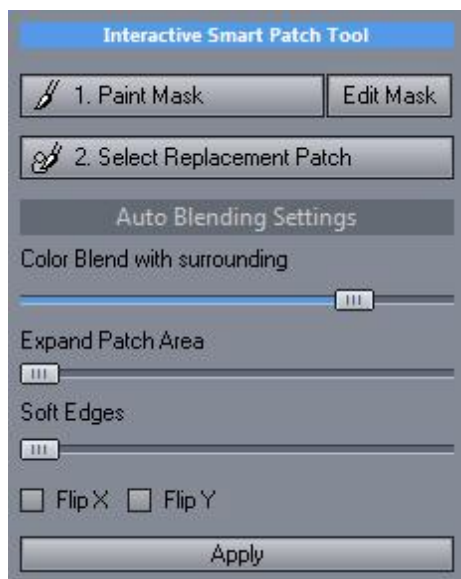
Smart patch and Auto Heal use hard edge full opacity masks and there is no point in changing these parameters of the brush except the size.

Interactive Smart Patch Tool

This is the most powerful tool in the Inpaint tab.

This tool replaces part of the image with another part. Sounds simple but it will also automatically fit the "patch" in terms of color and details to remove seams.

This tool works best on a busy background.



1. First Step is to **paint a mask** over the area we want to remove. The mask doesn't need to be very precise.



2. Then use step 2 - Select Replacement Patch

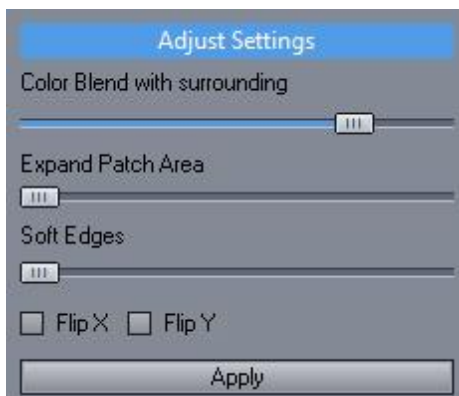


Click somewhere on the image. Then move the cursor so it is over some similar area or area that can be used to cover the patch. The area will not fit perfectly at this moment and it may show seams. That's ok. Click again to confirm.

3. The tool will smartly adjust the patch colors and seams to properly fit within the area. If you click again somewhere on the picture you will get back to step 2 - choosing the patch source.



See the blinking Adjust Settings. If the patch doesn't fit well or shows some seams, you can change the settings and the patch will be recalculated. You can expand the area of patch (without redrawing mask), soften the edges and change blending.



If there is still some visible seams usually the easiest part is to use Expand Patch Area slider which will

enlarge the "mask" having a better chance of proper fit.

Higher the blending the more will the patch look like a part of the picture. However this works best for busy textured parts of the image. For flat and smooth gradient areas - for example sky without clouds this may introduce some darker or lighter "dust bunny" - depending on where you take your source. You may need to lower the Color Blend and increase Soft Edges and or Expand area.

The patch can be also flipped (which may work better in some cases when there is no suitable patch source).

4. You need to press Apply to fully finish the patching.



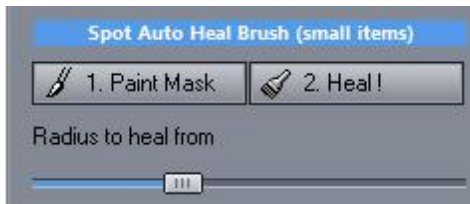
Tip: Right click can be used to move between steps instead of pressing the buttons.

Spot Auto Heal Brush

This tool will automatically choose the texture from the surrounding area of mask. It works best for small areas that are within some single characteristic texture.



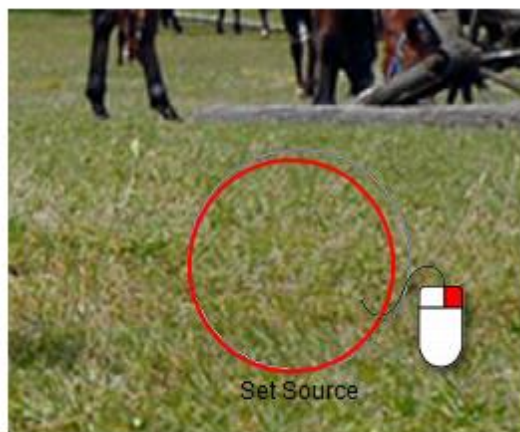
This tool is fully automatic and will not work if there is a distinctive sharp crossing line under the mask.



Use 2 steps - 1. Mask small area, 2. press Heal.

Simple Clone Brush

This tool is similar to the clone brush in Photoshop or other image editing software.



You will select the source by Right Clicking on an area then brush over the unwanted area with Left click.



Revert Back Brush will let you to brush back the original of the image (for all three tools).

8.4 360

With the popularity of various action and 360 cameras such as Ricoh Theta, Samsung Gear etc, we added support for the **equirectangular** panoramas (full 360 degrees) that the cameras produce. This was born as a small idea when we got one of those cameras, but it quickly become a bit more challenging project. It is also important to mention that many 360 images are not necessary the best subject for a painting due to use of wide angles, but we will leave this to users to figure out the art aspect.

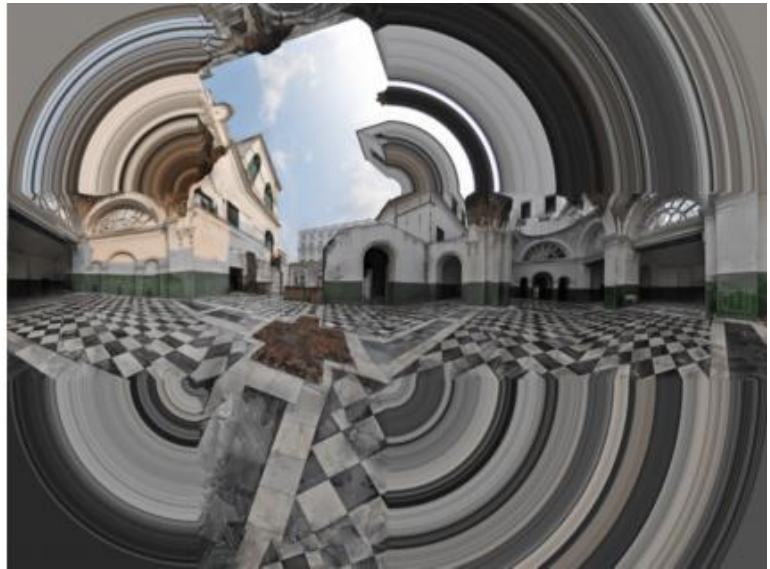
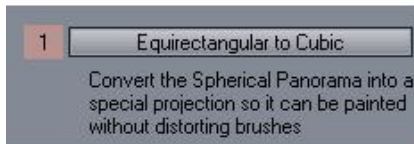


Equirectangular panoramas are full 3D panoramas that they map into a full sphere in a 360 viewer or VR, and you can look also down and up. Very similar to Google Street. There are also a cylindrical panoramas taken for example by stitching series of images when turning around. Th

Trying to paint Equirectangular panorama without any changes would pose a problem due to the way it is projected. When viewed in a panorama viewer or VR the painted brushes would be significantly distorted towards the bottom and top - a pinched in.

The way around this is that we first converted Equirectangular image into a cubic projection, then paint, adjust and at the end convert back to Equirectangular image. This way the brush strokes will be viewed exactly as they should in VR or 360 viewers.

The first step after loading panorama image such as the one on top of this page is to convert it to cubic projection



This peculiar looking image is in fact 6 sides of a cube plus a filled space between. The filling2w, the circles you see around the cube faces are done on purpose as they prevent from dramatic changes during dry reveal and reactor effects (some of the effects may use local functions or can search for edges and this configuration will detract from that)

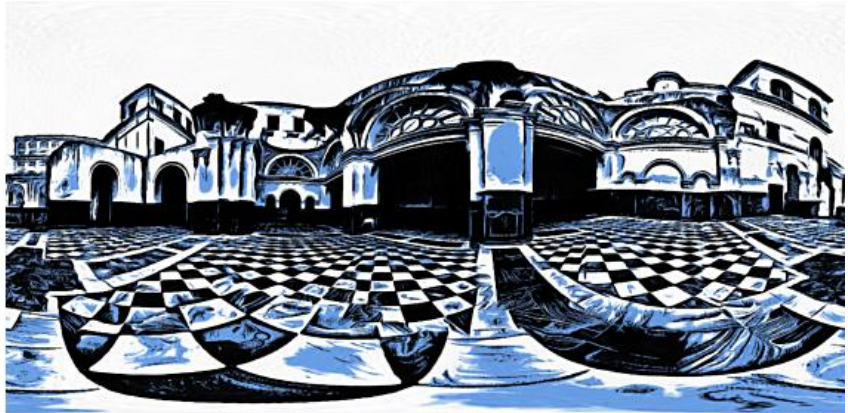
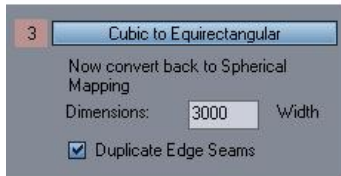
2K or 4K resolution - this is the size of the cubic map created. It doesn't change the resolution of the output as the output resolution is determined by the Canvas Output size in Painter tab, but it slightly affect the fidelity of dry reveal step. However 4K require 3 x more memory so if you are running into memory issue it is safer to use 2K.

After we have Cubic projection, we can use normal painting procedure. As with other painting the input picture size doesn't correspond to the output size, so in order to increase fidelity we can set higher the Canvas Output Size in the Painter Tab.

During 360 painting the image will be painted such way that the brushes will correctly follow the cubic projection.

Post adjusting and retouch - all post adjustments has to be dune on the cubic projection as well.

When all looks ok, you can convert it to Equirectangular image.



Here you can set the final Equirectangular image size (Width only, the Height is automatically 1/2 of the width)

Duplicate Edge Seams - this will run through all the cube edges and duplicate the very edge from next line inwards. This may prevent some rounding errors on the edges that could appear as a very fine line where the cube was folded on the final image.

You can save the Equirectangular image only from 360 tab! If you save from menu you will still save the Cubic projection.

You can reset the Step 3 (Cubic to Equirectangular) if you need to change some image adjustments and create new Equirectangular image.

You can

9 Adjusting Output

After the painting is finished we can use different set of tools to enhance or adjust the Final Output.



Details such as material and lights will change the flat looking digital paint into much more realistic looking "reproduction" of a real art.

Those are very powerful tools that can really change the way a printed art will be perceived by spectators.

Effects tabs

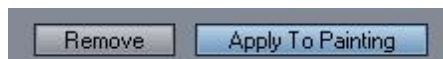
Each of the red effect tab can apply different things to the Final Output.



The effects can be added, removed or modified unlimited number of times.

Important: Many of these steps will let you edit the output image without the other effects applied - that means to see the cumulative changes of all of them you need to check the Final Output.

Apply to painting



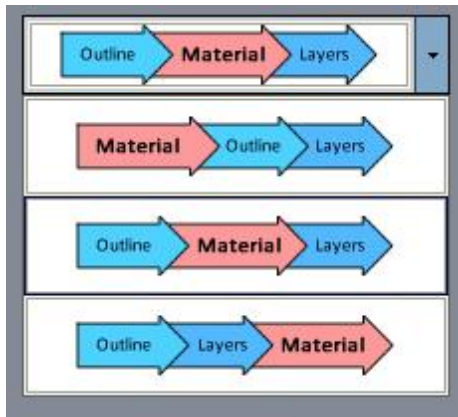
When you make changes in each effects tab, you have to apply it to the painting. You can also remove the effect from the Final Output by hitting Remove in each effects tab.

The functions (except Layers) will preview the effect on the output image that appeared after the painting was stopped without other effects and often even without canvas texture applied. For example after you apply outline, when you switch to Canvas function or Color Adjust, you will still see the preview without the Outline.

The Final Output¹²⁴ tab always shows the final mix of all the effects as it will be saved.



The effects will be applied into the final image in a certain sequence. The different sequence may in some cases produce different outcome (mostly related to the Material tab)
Therefore in the Material tab there is an ability to change the partial sequence of how the effects will be applied.



Retouch

- paint back various steps such as underpaint or dry reveal. This will allow you to significantly refine the look of the image.

Outline

- add various outlines to the final image

Canvas

- adjust the canvas texture so it peeks through certain shades of colors but become invisible under heavy paint. The result is very subtle and only visible when looking at the image in original size (printed in a poster for example)

Material

- changes the flat digital painting into a one that has visible bumps, scratches and light reflections.

Color Adjust

- adjust colors of the final image

Layers

- adding additional adjustments, color textures, borders, signature, frames or watermarks to the image or mix the image with various painting cycles in a whole different way

Final Output

- The final mix of all the steps - what you see in Final Output is what you get when you save the image

It is important to note that adding complex details and then resize the painting a great deal down to use it for example on a web page may be **counterproductive** and could result in an unwanted detail "noise" especially if the scaling down is large.

In such case it may be better to resize the output down to the nearly the final size (menu Edit - Output Bake/Resize, then apply the detail effects).

9.1 Retouch

Retouch mimic the function of mouse assist brushes but it can be applied after the painting finished.

Underpaint Reveal brush

- Paint image as it appeared at the end of Underpaint cycle

Soft Reveal Brush

- Paint full strength of Dry Reveal (as it appears at the end of Dry Reveal cycle)

Input Photo brush

- Paint in input photo

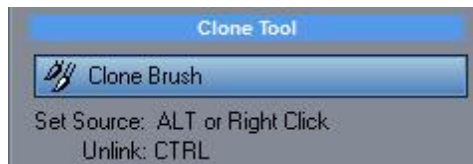
Revert to 'As painted'

- Paint image as it appeared at the end of detail cycle (without any post processing)

A typical example would be to apply Underpaint brush on unimportant or distracting background parts of the image (people on background) and apply Soft Reveal brush on person face. To bring up small details such as eyes, we can use Input Photo brush



Clone Brush



This brush clones one area (source - red circle) to another (destination, black circle). To select source, right click or hold ALT and left click. The source and destination are linked and move together.



Holding CTRL will momentarily unlink destination from the source and allowing you to move to another destination. Clicking down will again link the source and destination circles.

9.2 Outline

Outline allows you to add various complex outlines to the image after the painting.

The Outline tab is itself pretty complex as it allows you to use a bitmap brush that will be following the outline.

As in real life painting, not all painting styles need outlines. A realistic oil painting usually has no outlines, while for example watercolor may have accidental outlines - where a pencil that was used to sketch the image before painting is still visible.

Outline Calculation Source

Sets the source of Outline. The outline can be either calculated from the input image (which will have plenty of small details) or the Dry Reveal stage - which will have less small details and more follow only significant outlines.

From Input



From Dry Reveal



Type

So far two types of outline calculation are provided: Normalized gradient and Connected Curved Lines. Each have slightly different look.

Normalized Gradient



Connected Curved Lines



Simplify: determines the simplification of the outline or how tight or loose the painted outline follows the real image outline. The more we move the slider right, the more the curve will be simplified (lazy) and less follow the real outline.

Effect of Simplify



Density: The density of the outline. Slider towards left will show only few significant outlines, move it toward right will increase the threshold and show more outlines.

Effect of Density



Outline Brush

This is the heart of outline. A selected brush will flow around the calculated outline.

Brush can be a solid color or it can get the color from the image. The color from image can be calculated as Darker (the outline is typically darker than the surrounding image) or Lighter (the outline is lighter than surrounding image)

There are other self-explanatory settings such as Brush Size, Pressure (how hard painter press the brush) or Sharpness.

Layer Color Mixing

Sets how the outline will be mixed into the image. A typical method to apply for dark outline would be Normal or Multiply.

Similarly if we use a light outline (for example a white color) we may use Normal, Screen or Overlay.

Important: If outline seems to have different effect in the Final Image than the preview, check what you have in Layers. There could be a layer that adds the outline back (or change its color).

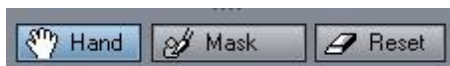


Different style (solid color, from image) give different outcome with various Modes (some would show no outline, for example lighter color with Multiply).

If in doubt, start with Normal Mode (which displays the outline all the time), set the size, sharpness, color, then try different modes.

Mask

Mask allows us to remove outline from certain parts of the image by painting a mask.



For example a real painter would not draw outlines on unimportant parts, such as out of focus background, reflections, only on important subjects.

We can remove the outlines from background by simply drawing a mask there.

The image on the left side has many unnecessary outlines that don't look natural (a painter would not normally put outlines in reflections or clouds) because they are not significant subjects.



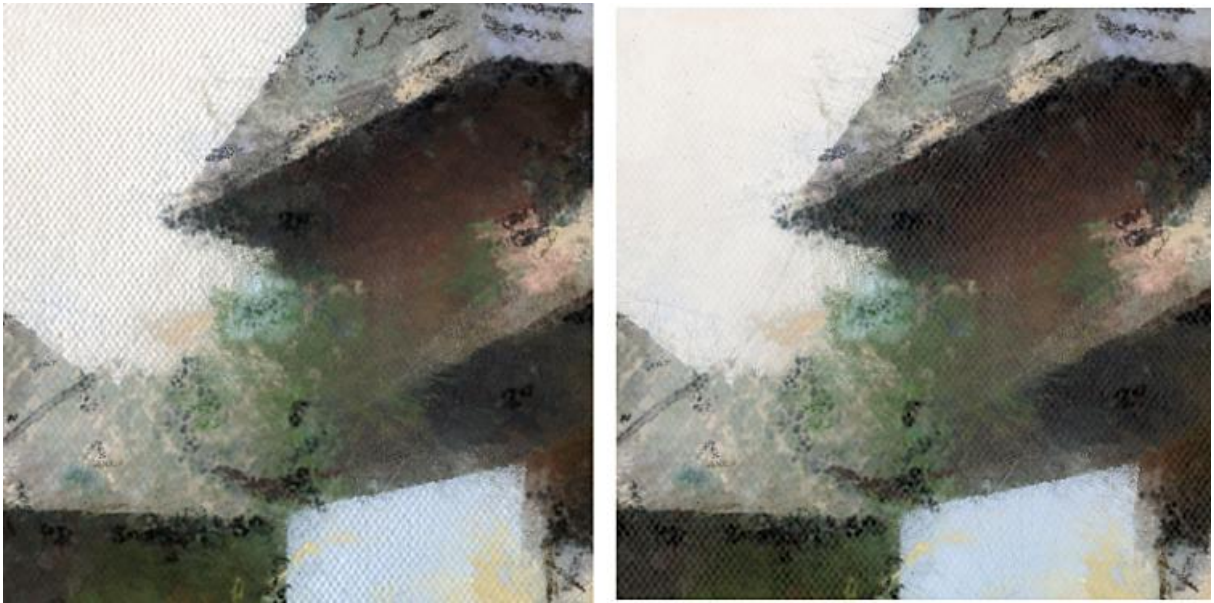
Note: Don't force it, not all painting styles need outline. For example a realistic oil painting would seldom have any outline.

9.3 Canvas Designer

Canvas Designer is used to edit the visibility of canvas under the paint.

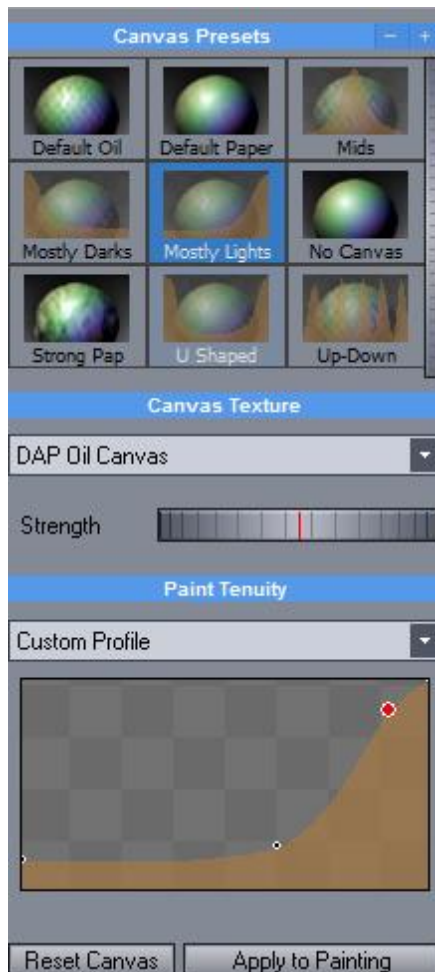
The process is applied AFTER the painting is painted and can be used regardless of what type of canvas was used during painting.

Canvas Designer is non-destructive process so you can apply it, then change or remove it completely.



On a real painting canvas or a paper texture is visible only if all the paint applied is thin, such as texture of paper in watercolor painting.

When using oil or other thick colors the canvas texture may be visible only in some parts.



The using of Canvas Designer is simple - first paint a painting, then click on the canvas tab. You will see few presets and the manual settings.

Apply to Painting - with this you will apply the selected canvas settings to the painting

Reset Canvas - it will return the painting to the state as it was originally painted (with or without canvas)

Canvas Texture - list of DAP canvas textures and user canvas textures (placed in the Canvas folder, must be jpg).

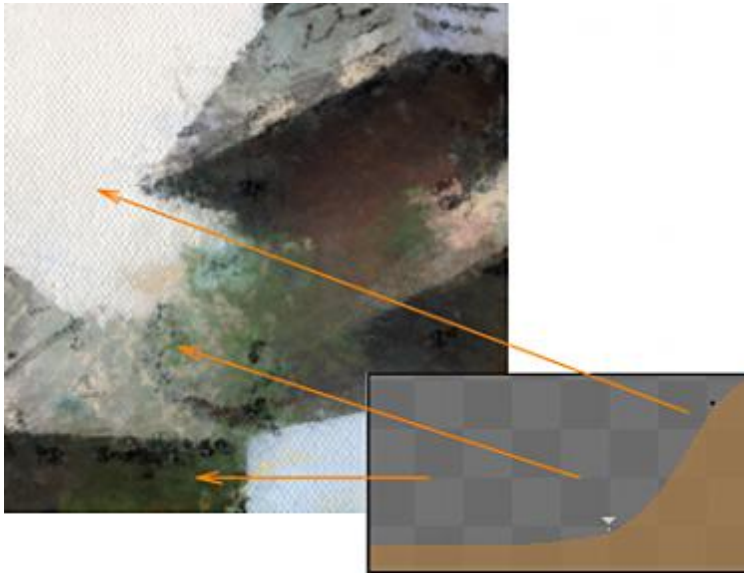
Tip: To remove canvas select **No Canvas**

Paint Tenuity

This will determine how the canvas is visible through the paint. By default it is visible in light shades (thin light) of colors and masked by dark shades.

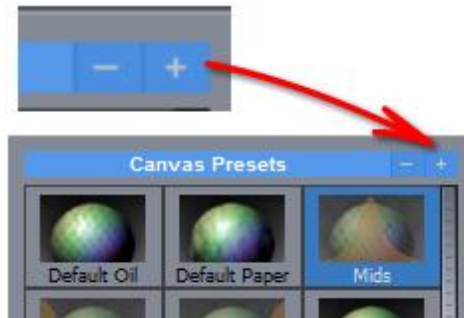
A custom profile will allow to build your own way of adding canvas.

The custom profile displays a graph from darks to lights and how the canvas is visible for the particular shades.



Canvas adds a very subtle "flavor" to the painting and it is mostly for the up close observation such as on printed material.

To add current settings as a new preset use the plus sign on the preset bar



Custom Canvas textures

To add your own textures, add them to the Canvas folder in the DAP installation directory. For example
C:\Program Files\DAPx64\Canvas

The supported files are jpg files only. Canvases do not use color information.

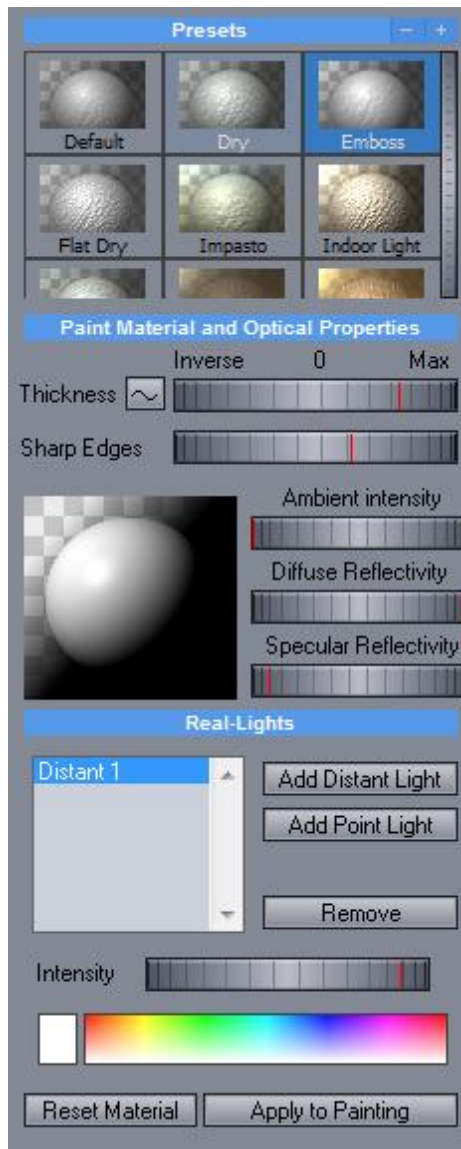
9.4 Material and Light

The process is applied AFTER the painting is painted.

Material and Light is non-destructive process so you can apply it, then change or remove it completely.



Material and light is used to enhance the realism of the digital painting by setting up how the dried paint reflect light and allowing to also add various lights simulating real environment.



Material and optical properties

Sets how the dried paint and pigment reflects light.

Thickness - the thickness of the paint, it can go to inverse, which will the reverse the paint relief

Sharp Edges - a paint can dry into brush strokes with smooth edges (like some acrylic or thick oil paint) or sharp edges like tempera or dried old oil paint.

Ambient Intensity - intensity of ambient light, also the base light of environment.

Diffuse reflectivity - light is reflected at many angles, it creates soft reflection that best carry the color information, typical of matte object

Specular reflectivity - light is reflected in one direction only, creates the highlights, typical of glossy object



By mixing the properties you can create different kind of paint from matte to reflective.

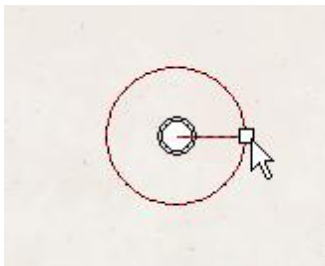
Real-Lights

The material optical properties will apply only when using an light.

Distant light - a light that is far from object, such as sun where we can assume the light rays are parallel. Creates more soft and equal light.

Point Light - a light like light bulb that is close to the object. Creates a more harsh light with higher reflections.

You can add up to 10 lights and change its properties like color and intensity on the interface and its position or size directly on the painting window.

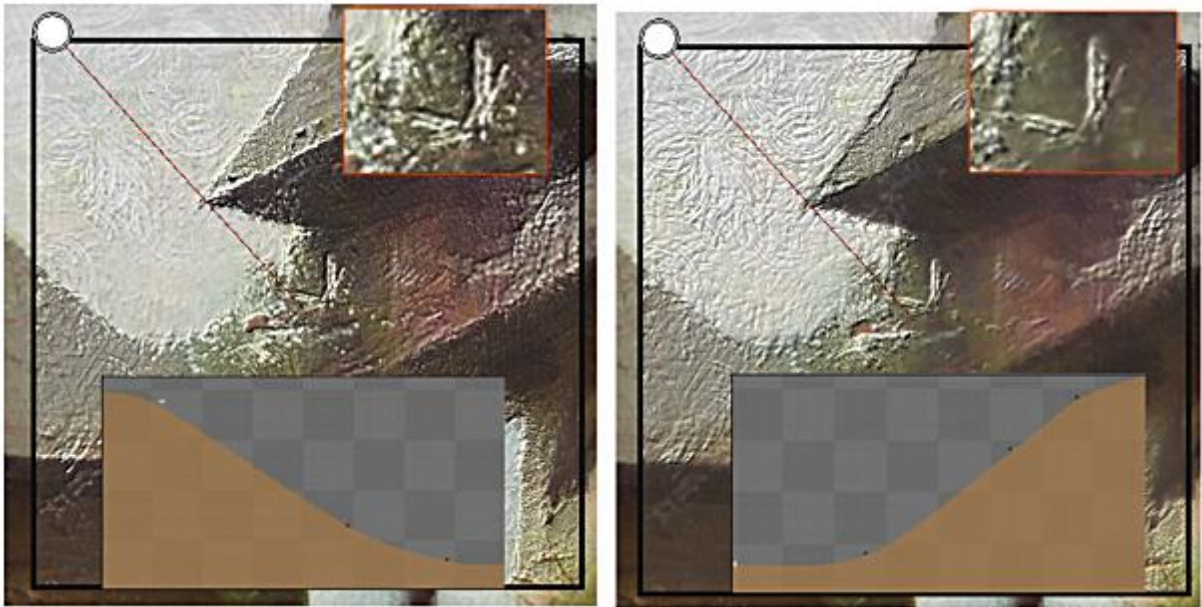


When you like the settings, you can press **Apply to painting** to apply it to the painting. this is non-destructive so you can go back to material tab and adjust or remove the settings.

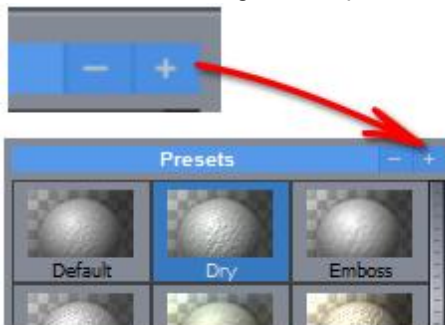
Reset material - this will completely remove the material and light effect from the painting

Custom thickness

You can set up a custom thickness graph which will determine which shades are higher and which are lower on the canvas.



To add current settings to the presets use the plus sign on the Preset bar:



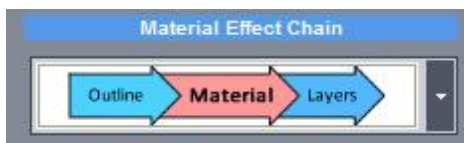
Where to use it and where not:

A thick large brushed paint will benefit far more from added Material and Light than a small, thin strokes (which may give more dusty and scratchy look).

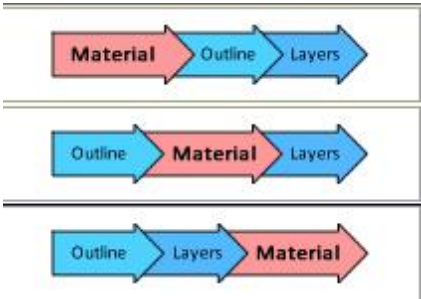
Styles that are with thin paint like watercolors or pen drawing would look confusing if a bevel is applied to the thin paint.

If you plan to resize the image down (for web), do not apply the Material and Lights as the final resized image will have too much small details and look "sandy". The proper way would be to resize the output (menu Edit - Resize output) to the correct size, then apply the Materials and Lights.

Material Effect Chain



This option will determine the effect chain. In the example above the painted image the material is applied after Outline but still before Layers. The settings of the chain will determine the final look. Obviously it applies only if Material is actually used.



9.5 Color Adjust

Color Adjust allows to change the color tone and sharpness of the Final Output. It offers the typical tools for adjusting the image:

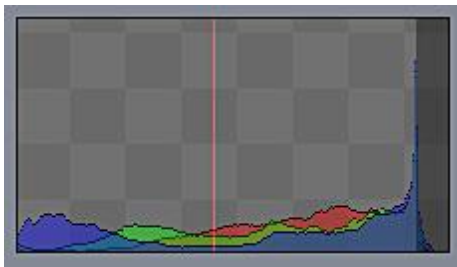
Levels
Hue, Saturation
Sharpness

Levels

Unlike photography where camera may leave some safe space in dynamic range (it may not stretch the image to have completely dark and completely light color to avoid clipping) a real painter would often use the full dynamic range available to him/herself. That is, he may not stay shy from using black or white colors.

Therefore it is often beneficial to stretch the dynamic range by clipping unused areas from left and right with Shadows and Highlights sliders.

In the graph below we removed the unused space on the right side by moving the Highlights slider left to about 235. This would make the image look brighter as the highlights would become true white.



Hue Shift

Colors can have significant impact on how the image is perceived.

In the image below we changed the Micro hue Shift to about -8 to create slightly false colors which is a great trick to make the image look more "painted".

Real painter colors would very often differ from a photo-graphic natural colors (for example painting under artificial colors will automatically shift colors and change how the painted image will look to other people under normal daylight)

**Pigment Brilliance**

This is to increase saturation of the colors. Unlike normal saturation that could easily destroy the colors (saturation clipping) this uses different weighting for color pigments with red being the strongest one.

Note: you can de-saturate image in Layers.

9.6 Layers

Note: Layers significantly changed in version 5

With Layers tab we can add dynamic effects, frames, borders and textures to the final painting or other overlays (such as signature or watermark).

But not only that, Layers allows you to mix various steps of the painting so we can completely overhaul the look of the image.

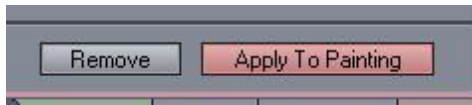


The screen is divided as such:

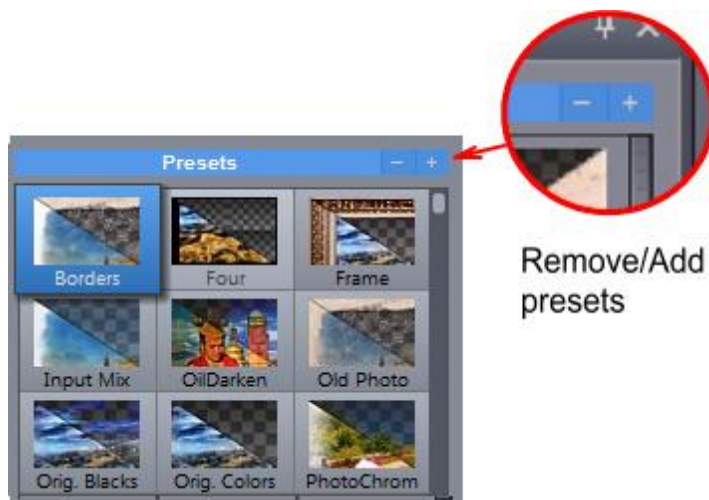


Important:

As with other adjustments, you need to use Apply to painting once you are satisfied with the effects.

**Presets:**

The layer "recipe" can be saved as presets so they can be quickly recalled.



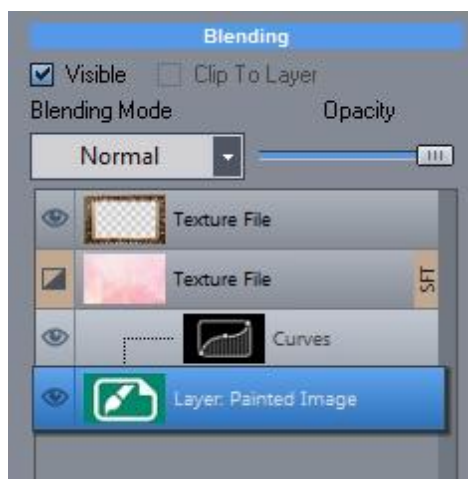
To add preset, press the + button on the top corner of preset window.
In Version 5 the presets are stored in My Documents\DAP\Layers\

Effect Library

This list all available effects or special layers. You need to drag and drop the effects from the library to the Layers.

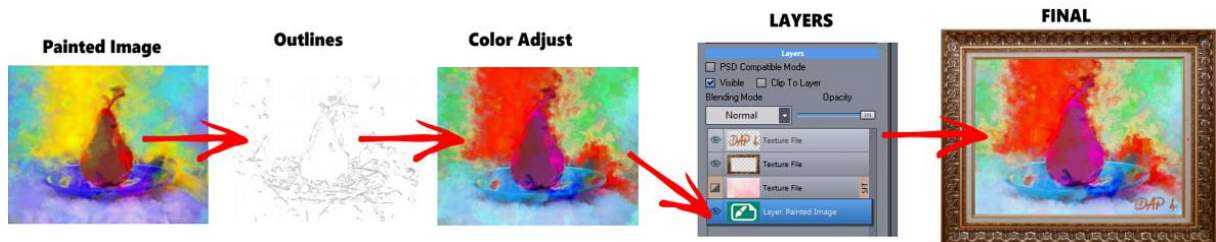
The Layers

The layers window work very similar to any advanced image editor. You add new layer then set its texture and set the blending mode and opacity.

**Layer: Painted Image**

There is always one layer that cannot be deleted. This is the final painting. You can move the **Painted Image** layer around, resize it but you are not able to delete it or change its texture.

Important info: Final Image is a cumulative result of all the output effects. Layers effects are one of these output effects. When you apply the Layers the Final Output will become the mixture of all these output effects such as Material, Canvas, Color Adjust and Layers. Editing each step may appear different than the Final Image will, especially if extreme changes are made.

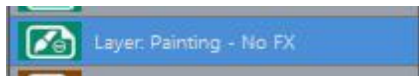


New in v.6: Tighter relationship between Color Adjust, Outlines and Layers. The combination of Color Adjust and Outline will become the **Layer: Painted Image** in Layers. In previous version this wasn't always true making it a bit more difficult to judge the final image while editing Layers.

Layer: Painting - No FX

(previously Painting - no canvas)

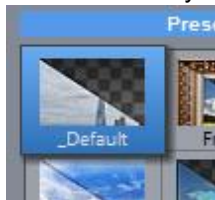
This layer is a Painted Image but without any output effects, outline or canvas texture.



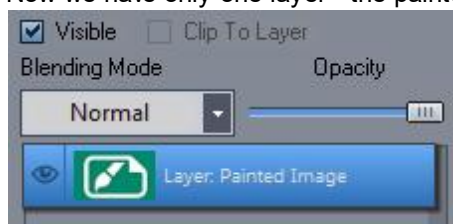
Quick guide:

Let's start from the beginning.

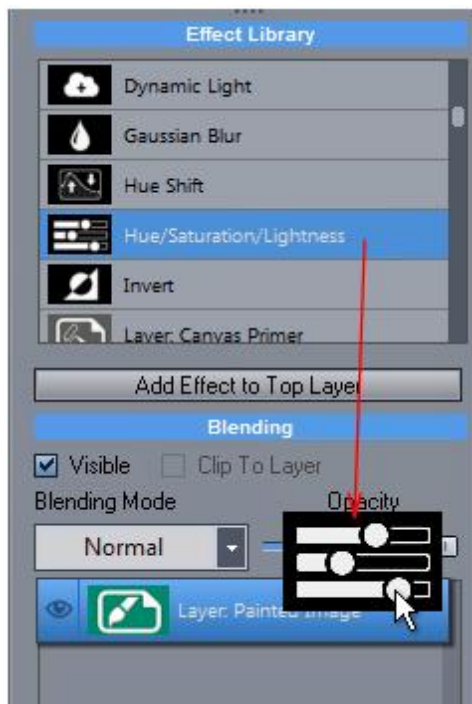
To remove all layers click on the Default preset



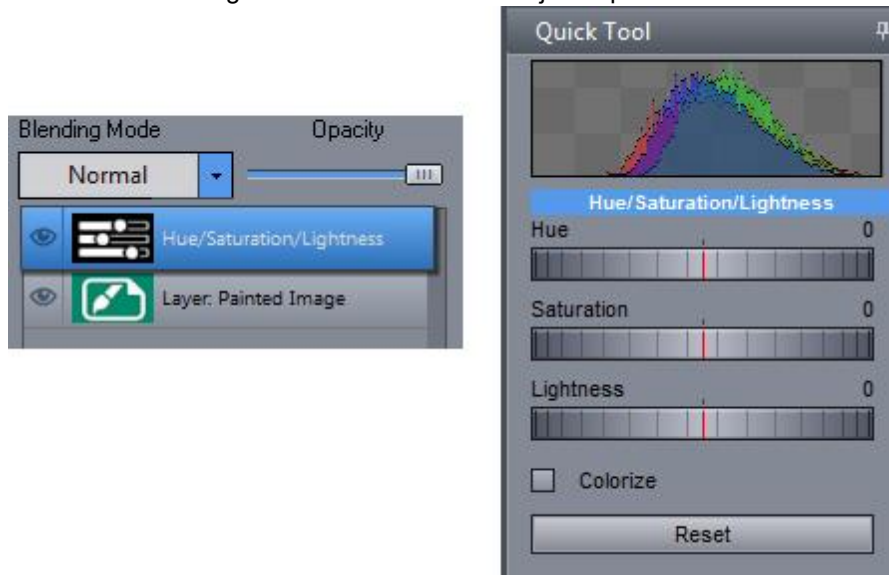
Now we have only one layer - the painted image.



Drag an effect from the Effect Library to the layers list:

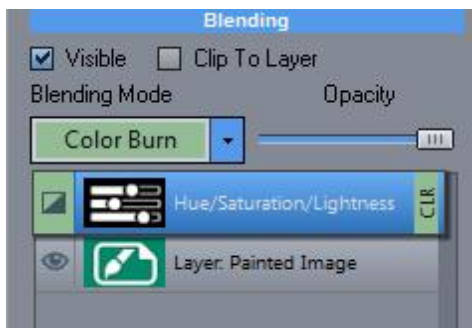


In this case we added HSL effect above the Painted Image. When you select the newly added HSL effect layer, look on the right side of the application: A specific controls will appear in a Quick Tool window which we can change. We call it the Effect/Object Options.



This is basically the whole idea: The effect layer on the top will apply to the layers below. Each layer, including the Effect layers can have its own opacity and blending mode which obviously opens a whole area of experimentation.

For example we can set the HSL effect as **Color Burn**, which means - apply HSL adjustments (for example changing HUE) and then blend it with bottom layers using Color Burn method.

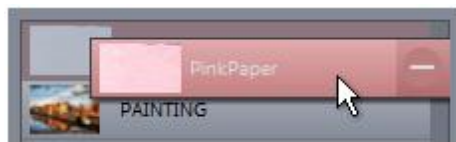


Which will result in something like this:



Remove layer

Use "Del" button or simply drag layer to the right until the minus sign appears and then release.



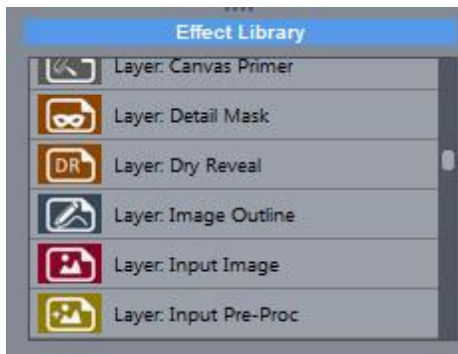
Rearrange Layers

You can rearrange layers by drag and drop or use the Up/Down buttons.



Painting Layers

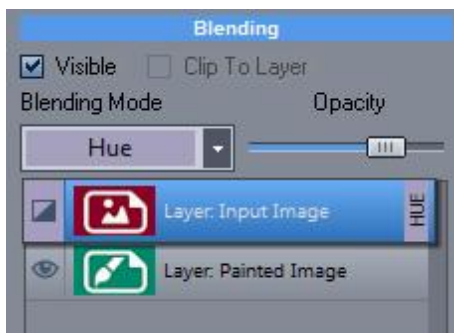
Not all layers in the library are dynamic effects. There are many Painting layers (which is the whole painting process broken into its single steps)



You can combine those layers as you wish. For example you may add more Dry Reveal to the mix by simply adding Dry Reveal layer and set some opacity and/or Blend mode.

Note: In version 6 "Layer Painting - no canvas" has been renamed to Layer: Painting No FX, because that layer has no canvas and no other effects (like outline, color correction etc...)

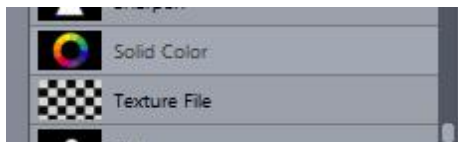
For example we can look how the preset Orig.Colors is build:



It mixes the HUE from input (photo) image back to the painted image and has set opacity to regulate its strength. This will simply shift the painting more towards the photo original colors. There are many tricks how to combine various steps, and you are free to experiment and invent your own things.

Texture File and Solid Color

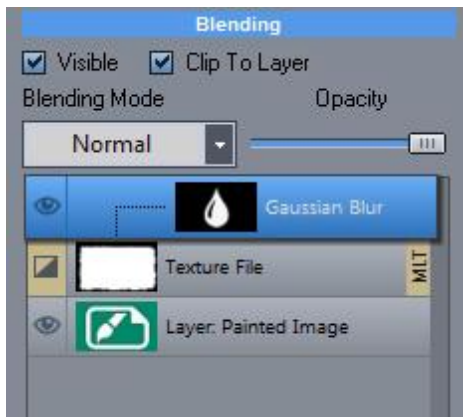
There are also two other special effects: Texture File and Solid color.



They work like the painting layers, except the texture can use a new texture image loaded from disk which could be different masks, papers etc. The solid color is just that a simple solid color that can be mixed with the layers below it.

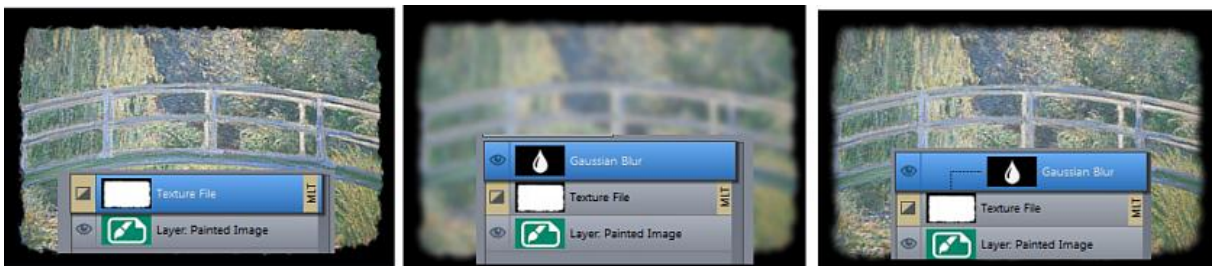
Clip To Layer

This special setting will make the effect apply **only** to the layer below exclusively and not to the whole stack of layers.



In this example we used a texture file with a mask image (and set it as Multiply) then applied Gaussian Blur as "Clip to layer". This way the Blur is applied ONLY to the layer immediately below (the texture mask file) not to the whole stack of layers.

Here are the differences:



Special Blending Mode: Mask Layer

The last option in the Blending box allows for a layer to become an Alpha Mask of the layer above it. Masks are usually grayscale images, but you can use anything for a special effect (even layers such as Underpaint etc.). Just remember, only the Intensity applies to the mask. By adding Alpha Mask you can create a "hole" or "frame" in the texture depending on the mask.



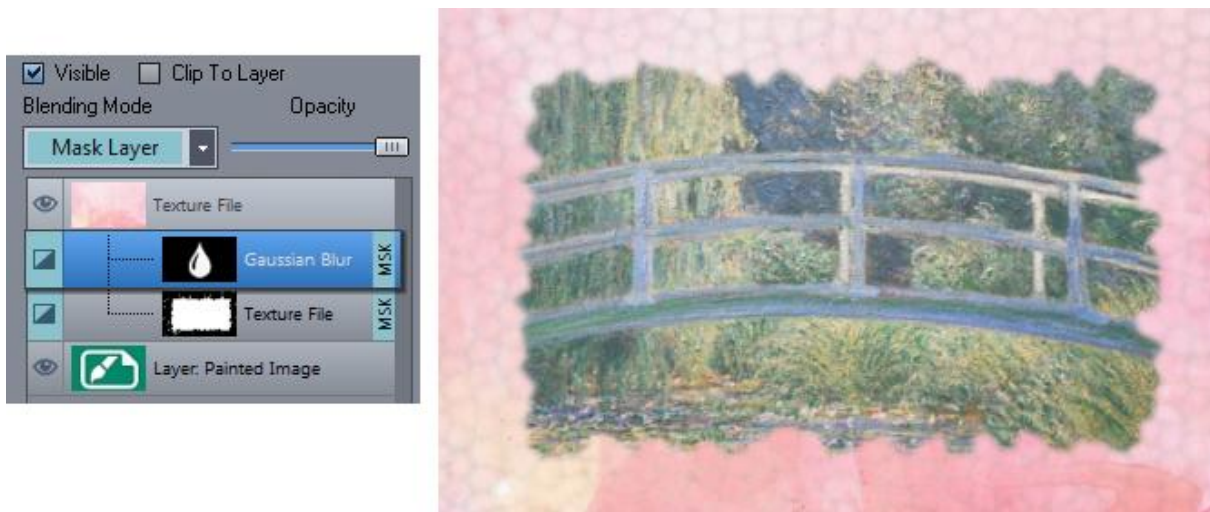
What we created is a mask by using a b/w frame texture file on a Pink paper Texture file. The result frame is however wrong way around (transparent on the borders, opaque in the middle). To invert the

mask: with the mask selected, look at the Options of the Texture File object on the right side, there is a checkbox to Invert.



Combine Mask Layer with Dynamic Effects.

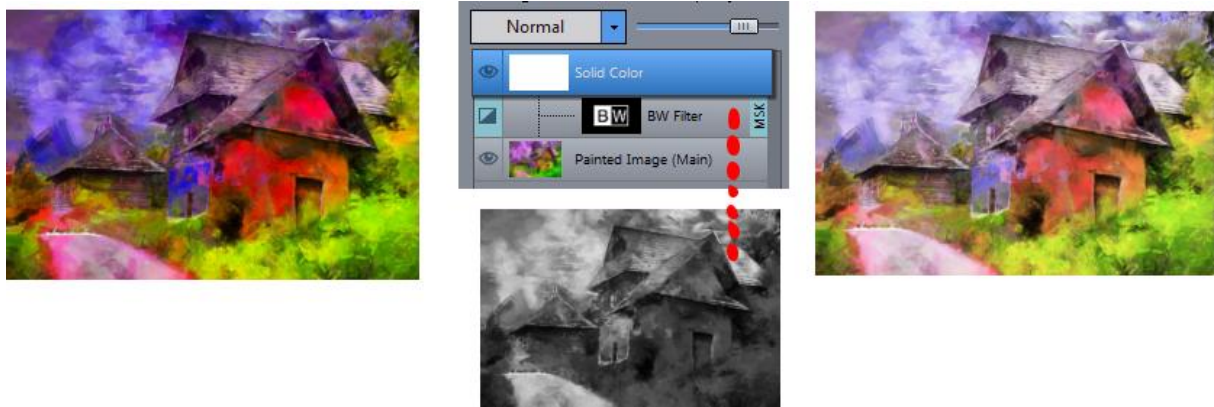
The Mask Layer can be combined with other effects as well, we simply add an effect between the Mask layer and the layer above to which the mask applies, but, and this is important, **the effect also has to be set as Mask Layer**. This way the effect will be grouped only to the mask layer itself, not to the whole image. This is in sort of like the "clip to layer" described above, but it applies only to the masks.



Start Mask with a Dynamic effect

So far we started the masking stack with a texture then applied another dynamic effects on top. But what will happen if we start the mask stack with a dynamic effect?

In that case the source of the mask is the intensity image coming from the layers just below the mask then the Filter applied to it.



In this case we can lighten up the image by adding a solid color then creating a mask that is just a BW Filter. The BW filter will actually generate mask that is the intensity of the layer below (which is the painted image). You can change color of the Solid Color layer to tone highlights of the image and change the opacity to lower the effect. You can experiment by adding Blur or other effects as the mask for some very clever enhancements.

Transparent Textures

If a transparent texture is desired in a layer, you have to use 32bit PNG file.

Auto Rotate for Best Fit

This option will rotate the texture to best fit for the painting - for example a portrait texture will be rotated 90 degrees if the painting is in landscape.

Resizing and moving Layers around the image

A Texture layer can be resized on the screen and moved around. This is all done by simply unclicking **Stretch to Whole Frame** option in the Texture option screen.



This way you can add signatures etc.

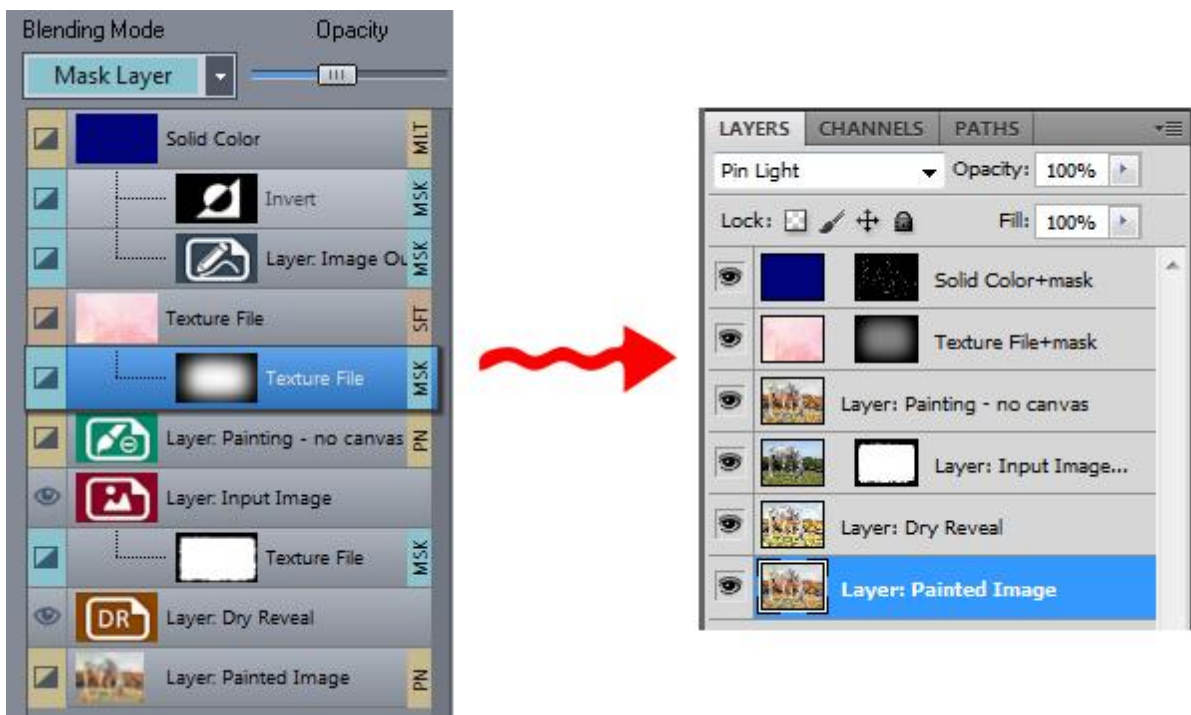
The Painting Layers can be also resized (they have its own "Enable Resizing" checkbox in their options. This way you can have a real picture frame and smaller painting layer below it. This is in essence what Frame preset does.



Save to PSD (New in version 6)



Unlike the Save Special in menu *File* that saves the painting steps itself as layers in Photoshop(tm) file the newly added Save PSD saves each of the layers and masks into PSD file.

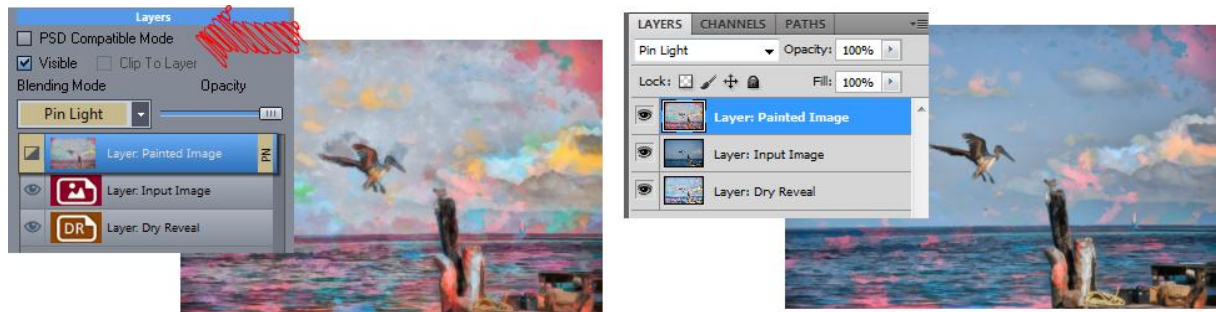


PSD Compatible Mode

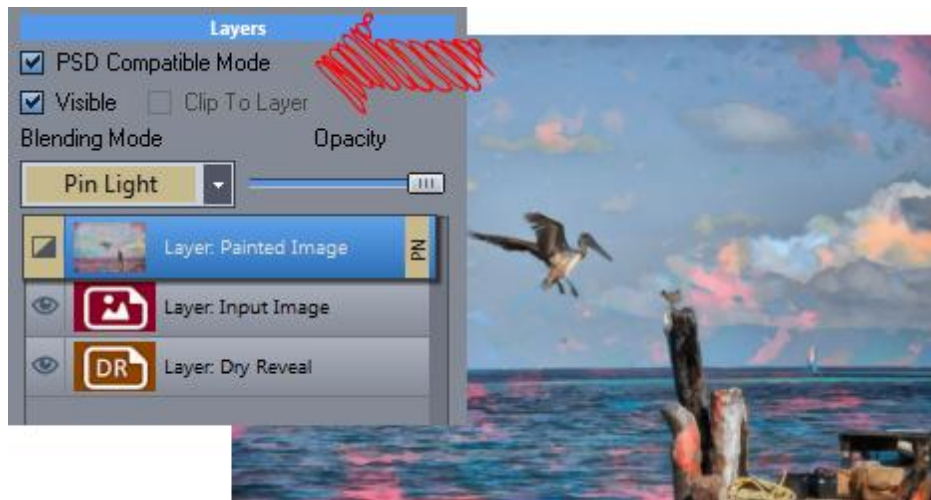
Originally when we build layers for version 5 some of the blending effects in DAP layers got (by author's

mistake - being tired and everything) reversed from how they behave in Photoshop. This wasn't big deal until now when we added PSD export and the disparity actually manifested. If PSD Compatible Mode is OFF (like it was in version 5) what you see on the screen may not appear the same way in Photoshop if certain blending modes are used. The affected blending modes are mainly: ColorDodge, ColorBurn, VividLight, LinearLight and Pin Light.

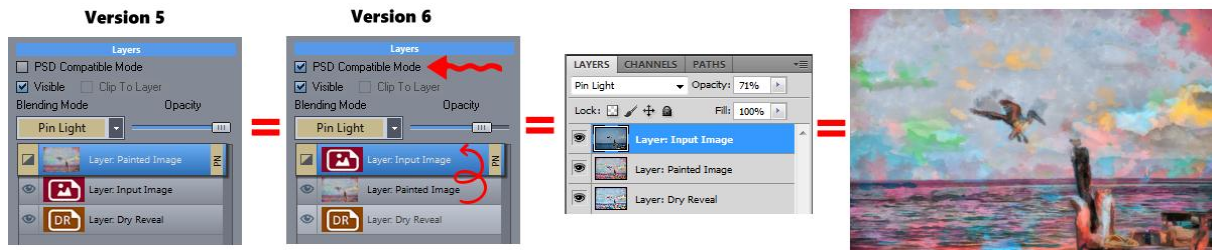
To better illustrate the issue, we use "Reasure" layer preset from version 5. This preset uses Painted Image on the top and blend it with Input image below it using Pin Light mode to get subtle color effect from the input image. All is fine, until we export it to PSD as it will appear rather very different in Photoshop. Instead of input image lightly affecting the painted image it is the other way around, the painted image lightly affect the input image.



When you set the **PSD Compatible Mode** in version 6 to ON, DAP will mimic the Photoshop style blending and the image in DAP will then appear the same as in Photoshop.



The DAP layers and PSD exported layers have now the same effect but sadly it isn't actually the effect we originally wanted - it is reversed. In order to change version 5 preset into PSD Compatible version 6 you need to not only set PSD Compatible Mode but also swap the two affected layers - the Blending layer and the layer below it. However just swapping them is not enough, you also need to switch their blending modes (so the Input Image will be now on top and have set Pin Light mode and the Painted Image will be below it with Normal Blending)



It is important to note that DAP has more blending modes than Photoshop, such as Negation or Glow, those modes will not be correctly translated regardless if Compatibility is ON or OFF. Some similar blending mode will be used instead.

Tip: A Real Picture Frame

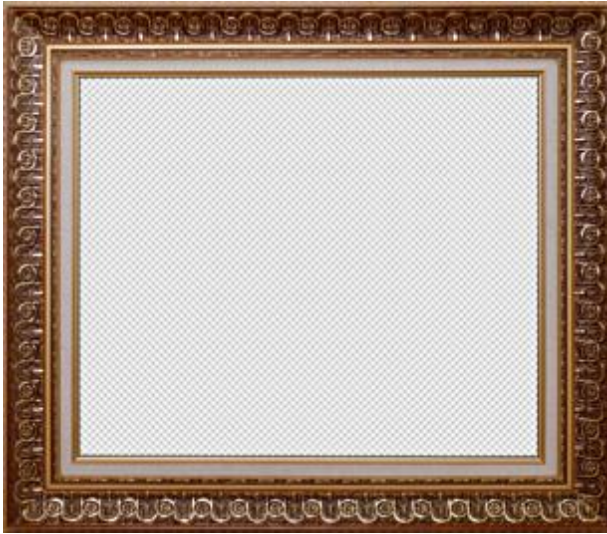
Creating a good picture frame is a bit more involved because you would like to correct all the distortion you and the camera lens will add to the photo. It requires a photo manipulation software such as Photoshop (c) Adobe.

- take a picture of a real frame, make sure you are as parallel as you can be to the wall and make sure there is enough light (That is probably most crucial as not enough light will make it noisy). You want the light mostly from left top but even any natural light direction is fine. It has to be sharp and noise free so use your best camera and best lens. Keep the shutter no less than 1/60 to avoid shake blur.
- open the file in your favorite photo editor (which supports layers)
- correct lens distortion (usually barrel). CS5 has already tool in Filters called Lens Correction, but there are also many third party plugins that do the same (some free some not). Our own PhotoBrush software has also Barrel distortion filter. In other words, you want straight lines straight and not bended into an arc due to the lens distortion.
- Fix a perspective distortion and crop the frame. Because you didn't stand perfectly parallel to the wall you will need to correct the perspective distortion and then crop it to the frame. In Photoshop you have a nifty tool called perspective crop which does it all at once. How it works is first select crop and draw crop around the whole picture frame, now look in the top toolbar there is now a checkbox Perspective. Mark it On and then you can drag each corners of the crop separately to align with the corners in your frame. Then just press enter to apply. If you don't have perspective crop you will probably need to fix the perspective other ways, our own PhotoBrush has a perspective correction tool that works somehow similarly to this.
- now you need to create transparent opening. Duplicate the layer so it become a normal layer and then hide the background layer. With the Polygonal lasso cut the opening and press delete key to make it transparent. Try to fix any edges that are not cut close enough. You don't want to see the original painting, or any thin line where the frame meets the painting, you just want a frame.
- to make it look natural you want to add a very faint drop shadow under the opening for the new image to better "sit" in, so select the opening with the Magic wand. Create new layer below the current one or simply create new layer and move it down. We want to blur it little the selection.



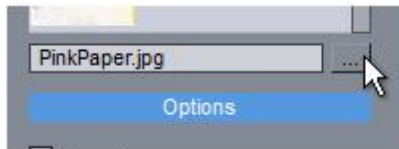
- With the selection on the empty layer, (you may also hide the top layer for now), use menu Select-

Modify - Contract (maybe a 1 pixel), then Select - Modify - Feather, just few pixels (like 3). Now invert the selection (Select - Inverse) and select paint bucket tool, select a dark color (perhaps pick one of the very dark shades from the frame itself as it is not a pitch black) and fill it outside the opening to create shadow with a smooth edge. Now Show the top layer. This should create a little shadow around the opening. You can play little with the Opacity of the shadow layer. Save as transparent PNG file.



Add Custom Textures

To add your custom frame to the DAP, add a Texture File and use the browse button on its option

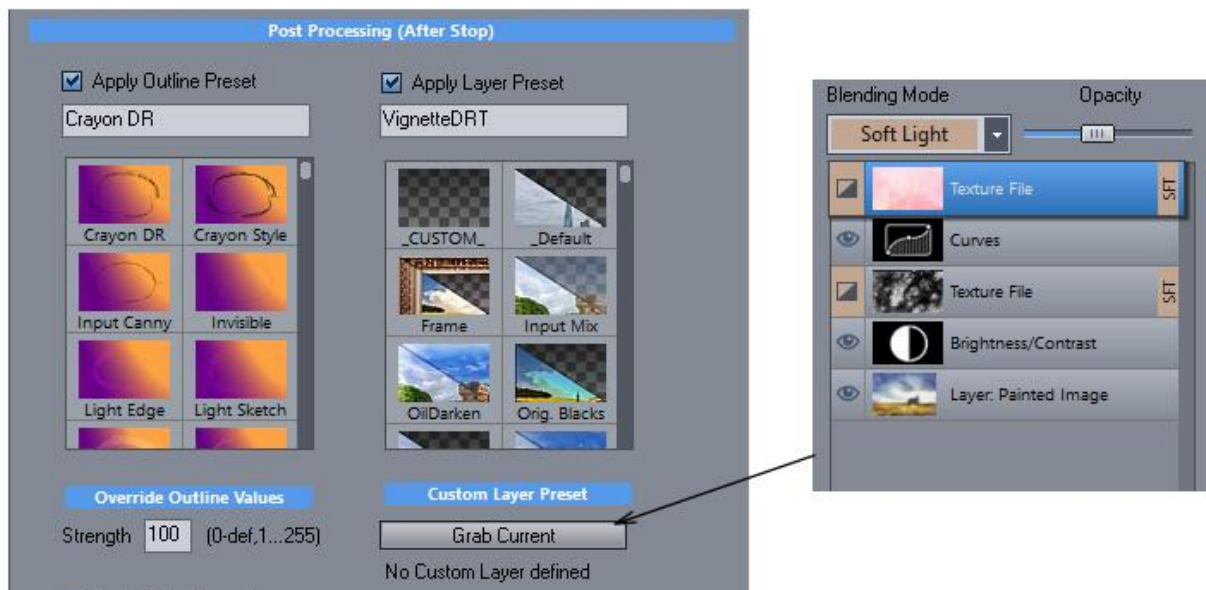


You will be asked if you want to add the file permanently to DAP.

Unlike in previous versions the custom textures will be stored in the \My Documents\DAP\Textures\

Addition in Version 7

Layers can be saved into the template itself (previously the template could only recall existing preset). When you use Grab Current - whatever is currently created in layers will be saved internally to the painter template and will be applied after the painting finishes.

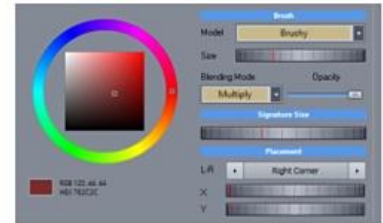


9.7 Signature

The signature tab allows you to quickly sign your masterpieces with a personalized signature. A variety of customizable brushes lets you choose the perfect signature style to complement each painting's aesthetic.

You don't need a graphics tablet or stylus to add your distinctive signature. You can simply draw it using mouse which is then rendered with smooth, natural-looking curves.

Signature



Draw Signature



This is the most important part that allows you to create your own signatures.



Simply draw your signature using mouse. If you made mistake you can remove the last stroke with Undo.

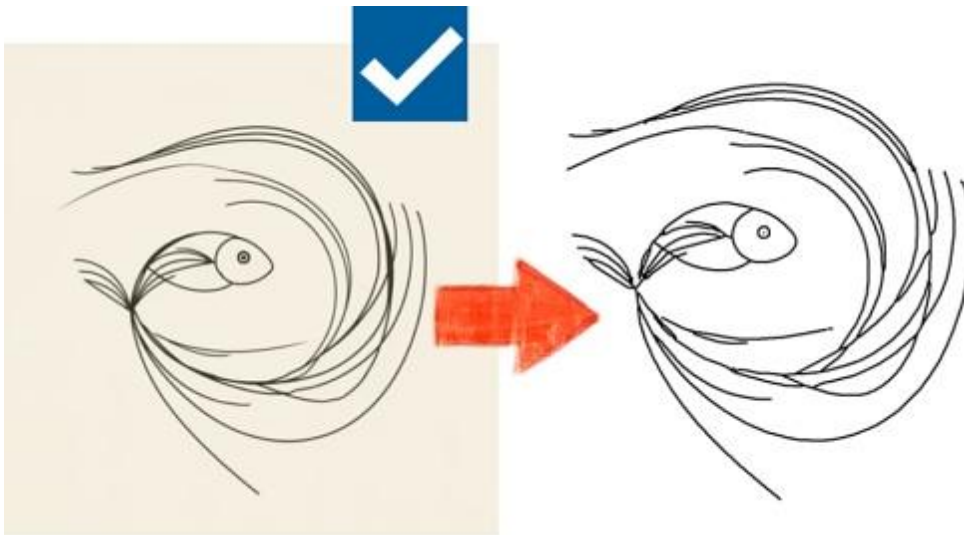
Auto Smoothing

After you draw the signature, it will be automatically smoothed. The smoothing is determined with the

Slider. Additionally you can click Relax button to smooth the drawing even more (you can do it multiple times)

Trace Line Drawing

You can trace the signature from line drawing (bitmap image with black line on light colored background). Remember the drawing must be line - drawing (for example scanned signature) not an image with flat areas.



Remove Orphans will remove small disconnected shapes.

After you create a signature it will be placed in either right or left bottom corner.



You can reposition the signature with the X, Y sliders (or dragging on the screen)

There are various ways the signature can be drawn on the canvas. The Model will use different brush strokes.

When you chose Basic, the signature will be drawn in a smooth vector style.



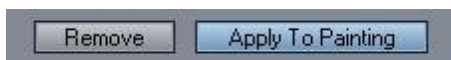
All the other models will draw the signature using a natural style.



Choose proper Blending and color, depending on the background and the effect you want to achieve.

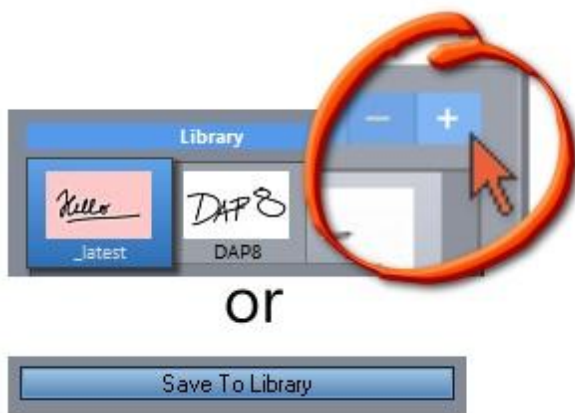


When you see something you like, use Apply to Painting.



Save Signature to Library

To save current signature to presets, use the + button or Save To Library button



The latest signature you created with Draw Signature will be always shown under the _latest (reddish tile)

9.8 Final Output

Finally we get to save the result!

What you see in Final Output is what will be saved to image.

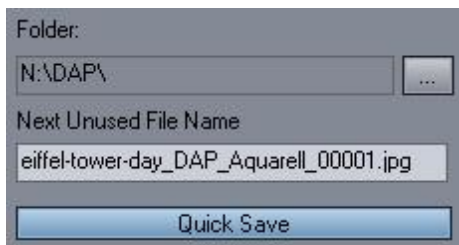


There are few resizing options available as a courtesy. For example it is best to save half size to use on Forums or web image galleries.

Auto Incremental Quick Save

This not only works when the painting is stopped but also during painting when we hit pause.

The quick Save will quickly save the image under the set folder and with the name as indicated.



Each pressing Quick Save will then generate, next file name to be used by adding numerical suffix. This is a very simple way to save various versions of the painting.

Save Half Size/Save 2x Size

A quick way to save resized or upscaled image. (this all assumes that Save As... is 1x size). The upscaling 2x method can be used for example for printing to supply more resolution. Note; this doesn't generate more details, it uses a reasonable well tuned upscaling.

Bake / Resize

This is more advanced method for upscaling and/or allowing you to apply more effect using "baking"

What is Baking?

The output effects (for example Outline or Layer are dynamic - you can add them, change them or remove them after the painting is done.

Baking will permanently apply all these effects from all the Effect Tabs to the image. The benefit is that now we can apply another round of effects on top. For example in the image below we first applied black outline, then use bake function and subsequently applied a different white outline. This can be repeated multiple times.

**Example: Simple Baking**

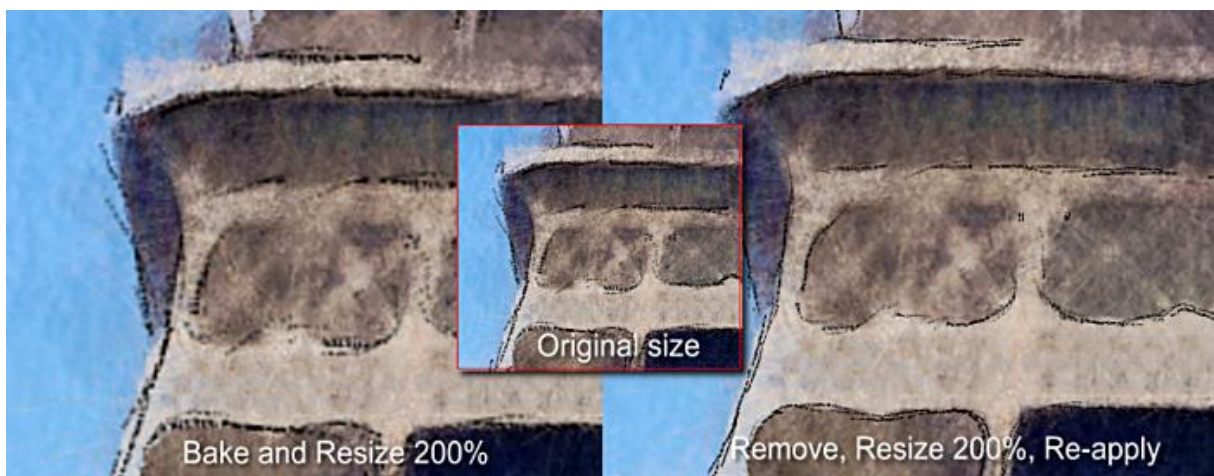
Select "Bake Post Processing and Resize" option, but keep the new size unchanged (100%). Keep the upscale method on Optimal Smooth.

Upscaling

There are two methods of upscaling to choose from: Optimal Smooth and Art Upscale.

You have to also choose if you want to **bake** the applied post processing (see above) or **remove** the post processing (and then manually apply it back on the larger image). The second option may be a best bet when you are resizing the image for printing. By removing the Post processing first and then resizing, we can manually apply the best quality post processing back to the larger image. (that is: relatively finer outline).

Difference between **Bake and Resize** and **Remove and Resize** then applying the Outline back.

**Art Upscale**

This method of resizing was specially developed for Dynamic Auto Painter for use on painted graphics that has generally sharp edges and large flat areas (like watercolor, or brushy oils) and it produces great results most of the time. However Art Upscale may not be suitable where smooth gradients are desired.

(anything close to photography) as it will inevitably make look gradients "granulated".

Art Upscale on watercolor (200% upscale)

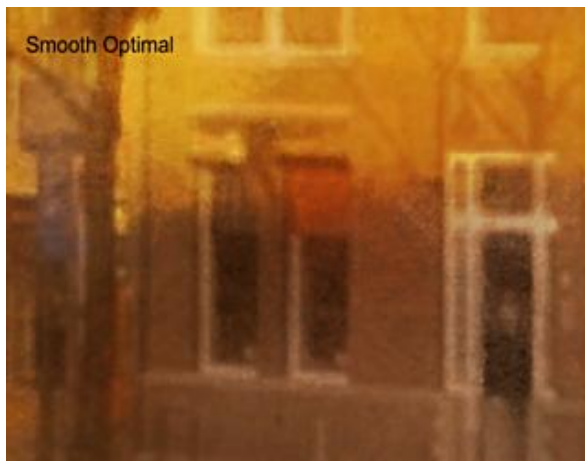


Art Upscale on Oils (200% upscale)



Art Upscale on smooth oil painting (200% upscale)

The Art Upscale may not work if we desire smooth color changes (like in a realistic photo painting) as it will "paint in" the color gradients.

**Example: Simple Upscaling for Printing:**

Select "Remove Post Processing", choose final size (for example hit 200% or just type new size), select Art Upscale. Press OK, now go back to post processing effect tabs (ex. Outline) and apply what you want to the now resized image in best possible quality.

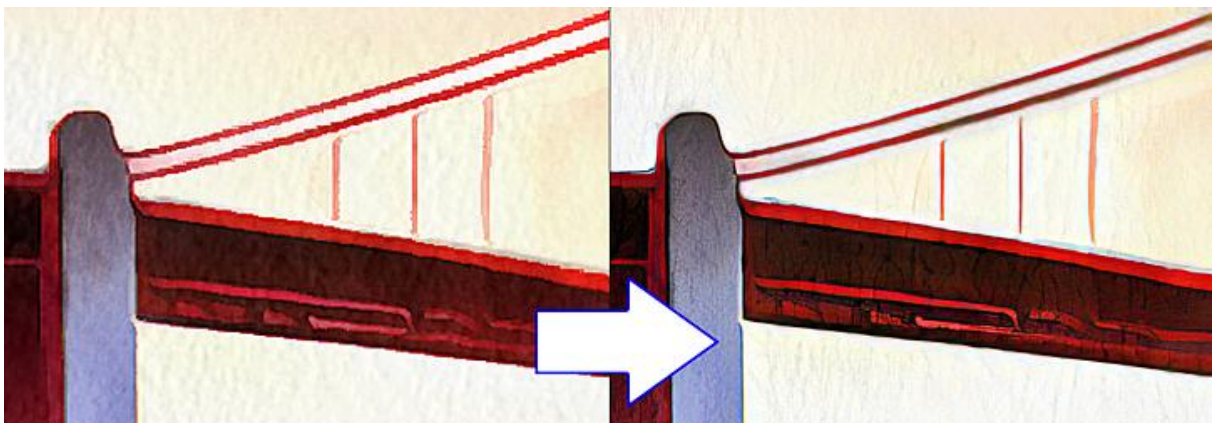
AI Upscale for print

This process offers much higher quality upscaling than Art Upscale (up to 16 the amount of pixels), but it requires additional application called AI Photo & Art Enhancer




<https://www.mediachance.com/aienhancer/index.html>

If you have the AI Enhancer installed, you can call it directly from DAP:



Save Video


If you enabled capturing frames  during the painting you can also save video of painting.

10 Advanced Techniques

The following chapters are meant to be a reference of the numerous template parameters and advanced settings. With every new version, more parameters were added so if you feel overwhelmed, please be assured it is not just you. It isn't meant to be understood all at once.

You can fully enjoy the software or even modify the included templates with on-screen sliders without knowing anything about the template parameters.

All this is necessary only if you want to create your own template or significantly modify an existing template. It is still a complex system and the nature of the random painting makes it hard to imagine the outcome.

In version 7 you can also directly access the parameters using Panel  ¹⁹⁴.

Modifying and creating new template takes a lot of time as various painting effects are applied during different cycles - that means you will need to always run the full painting process to see how your modification affect the output.

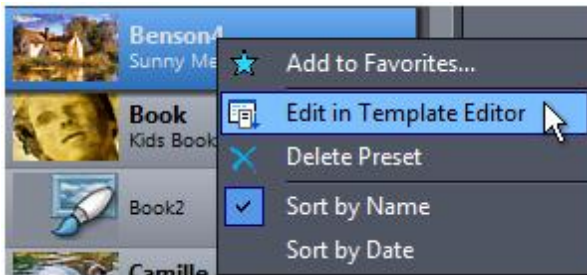
Don't expect that changing a single parameter will always have a big impact. In many cases the changes may be minute, so it is important to at least roughly understand what each part of the template parameters does when you making changes.

Version 5 and onward has a template management that will keep track of changes without actually changing the stock templates. All user data are stored in user documents.

10.1 Template Editor Basics

Warning: Making a good template is hard as it depends on a large set of parameters and many other factors. Each preset goes through a long period of refinement.

Edit preset in Template Editor (right click on preset and use menu) or Template Editor command in the Tools Menu



Template Editing:

The Painters are created with what is called **AOP templates**. You can create your own template if you wish. Each template consist of many files where the *.AOP and *.HDAOP are the primary files, representing the template.

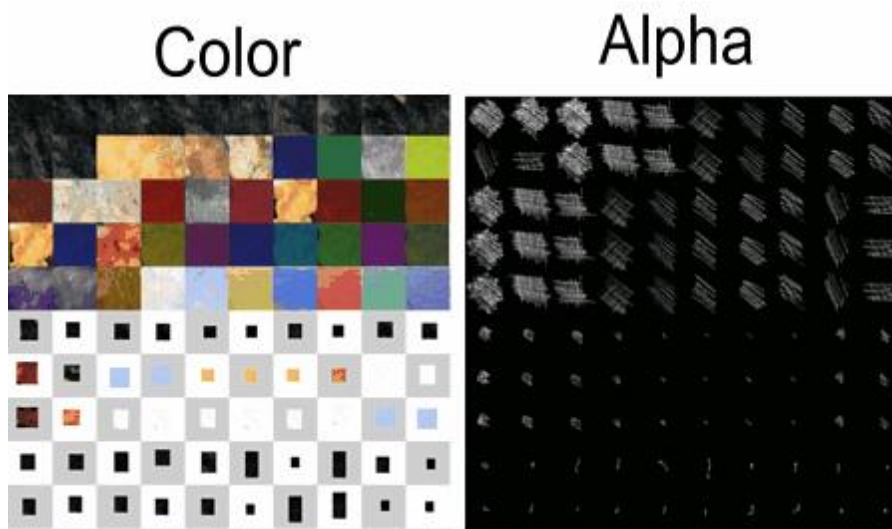
The AOP templates can be both simple and complex, it is a good idea to start from the default values (Reset button).

It is not easy to describe exactly the result of each parameter as they often work together and the result is a complex cumulative addition of the parameters over the time of painting.

The AOP template allows you to build your own custom painter strokes. These strokes needs to be set in a two jpg template files (Maps), each must be: 3000x3000 pixels or for HD templates that can be 6000x6000 pixels

The 3000x3000 for AOP (or 6000x6000, for HDAOP) pixel image is divided into 100 rectangles 300x300 (600x600) and each can have one brush.

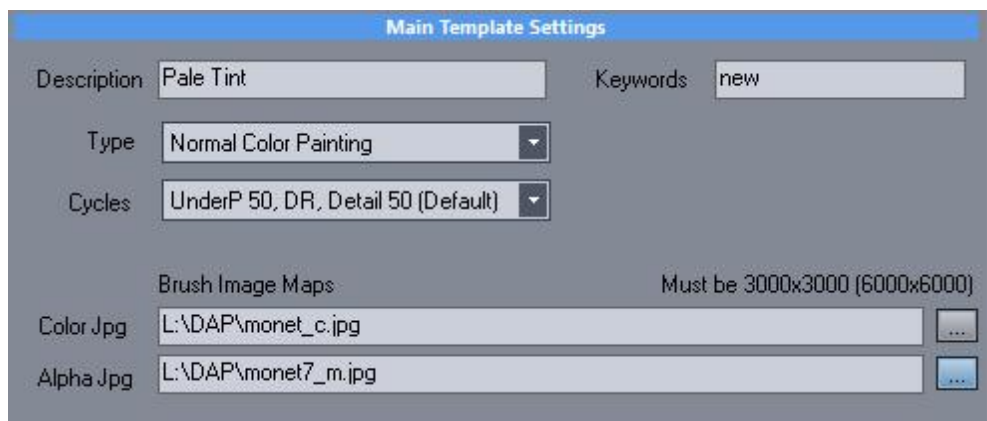
Here is example of the two maps:



The example above is for previously called Rez-Smart template (now they are standard for most DAP templates) which means first 50 brushes will be used as an underpaint and next 50 brushes (or less) will be used for details.

In this case we will set the template using Cycles: **UnderP 50, DR, Detail 50 (Default)**

As you guessed, the color can be anything, it doesn't have to be a solid color, it can be a texture, paint stroke or even an object and its corresponding alpha mask. This allows for great deal of experimentation.

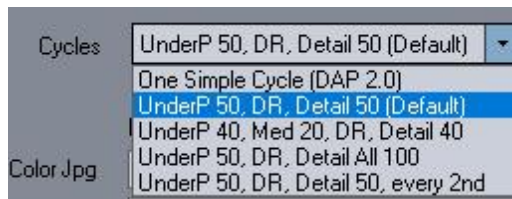


The Cycles describe how the template brushes will be used. In old version 2, there was only one cycle where all brushes would be used.

Normally most templates use **UnderP 50, DR, Detail 50 (Default)**

That is using first 50 brushes for Underpaint, applying Dry Reveal, then using the second set of 50 brushes for detail.

There are other Cycles selectable and they describe what they do. They are seldom used.



List of types:

Normal Color Painting - normal brush strokes - most templates use this type

Grayscale painting - paint only in grayscale, regardless of palette color

Watercolor - the brush strokes are semitransparent and also blend into paper over time

Expressive Color Style - this style dynamically mixes Expressive and Realistic settings during painting brush strokes. The result is a wider, more colorful palette than Normal Color Painting but also less pronounced details.

Portrait with Simplify (A and B) - a Simplify cycle will be performed before the painting, the style requires Dry reveal mask.

Portrait with Segmentation - a Segmentation cycle will be performed first. It require Dry reveal mask

Dry Reveal Only - There will be no ordinary painting done - only the Dry Reveal cycle.

Many of the above types are now more or less Legacy as they come from the older versions that didn't have many other options and effects. Most of the presets will use Normal Color Painting and various processes will be applied during the painting to get desired effect.

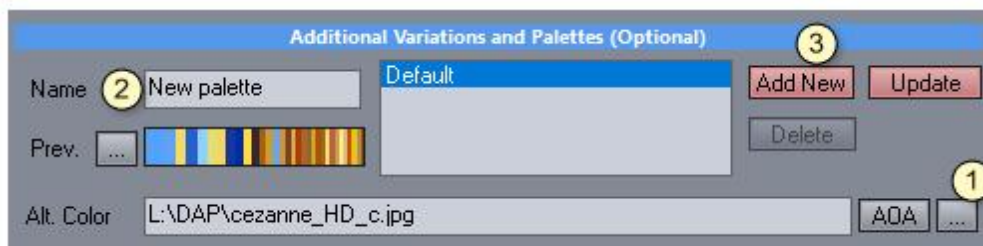
Preview - see visually the preview of each brush

Palette options.

The template can have optional palette styles.

Each palette style is an alternative Color template JPG file (the Alpha remains same for all Palettes)

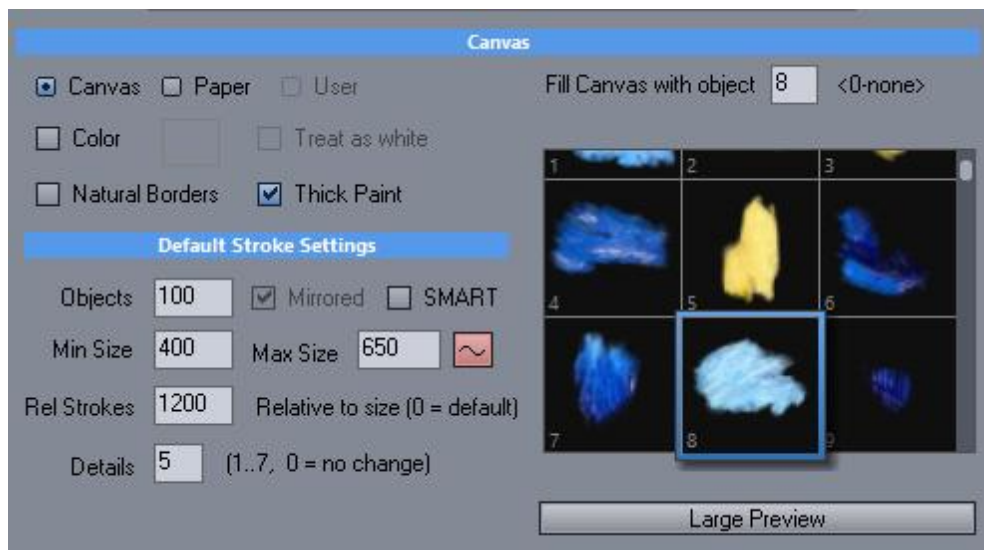
(1) Load alternative color jpg file, (2) set name and press (3) Add New.



(Deprecated) AOA - *.aoa are full alternative templates that can be used. Instead of just different color - a whole template can be offered as an alternative in the palette option. Creating AOA template is exactly the same as creating Normal (AOP) template, just when saving, select Alternative (embedded) Template in the Save dialog box.

AOA are deprecated - we recommend simply creating a new template, instead of using different color/alpha as a palette (it clearly is confusing approach)

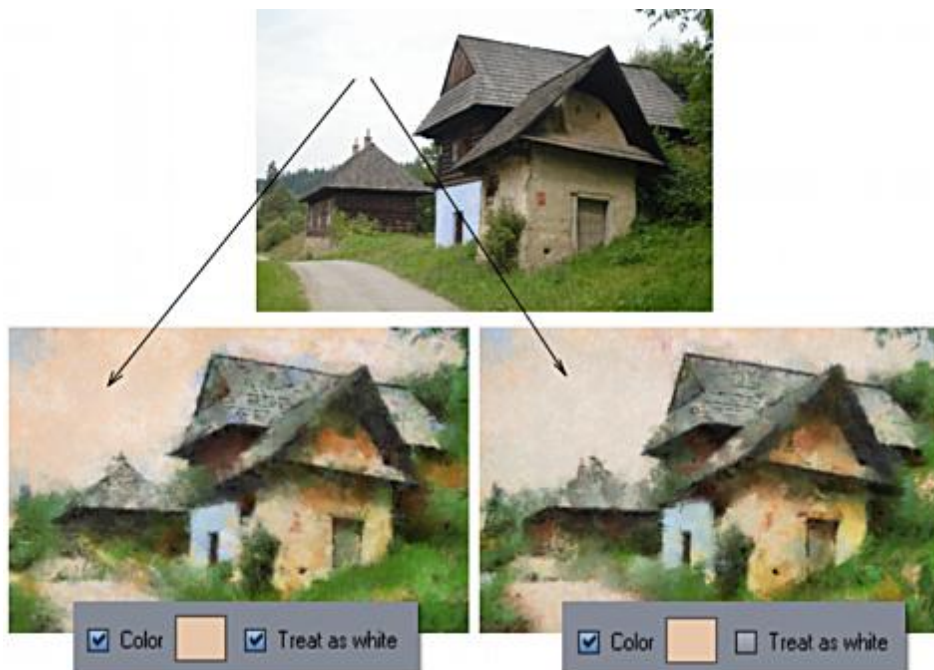
Canvas and Stoke Settings



Fill Canvas with object - Fills the canvas with a single brush on the very beginning. 0 means it will not be used. Everything above 0 designate a single brush that will be used to cover the whole canvas.

Color - initial background color of the canvas before the Fill Canvas brushes

Treat as White - the specified bg color will be treated as white by the painter - that is even if we paint the canvas with for example red color, DAP will think it actually paints on the white canvas - that means some parts of the red may be visible where there is a white color on source image. This is good for mostly off white colors to give a more character to the painting where the original canvas color will peek through in white areas.



In many of the oil type templates in v.3 the **BG color** is now set to dark colors to invoke "negative" paint where we let light colors to over paint and dark colors to peek through from canvas.

Stroke:

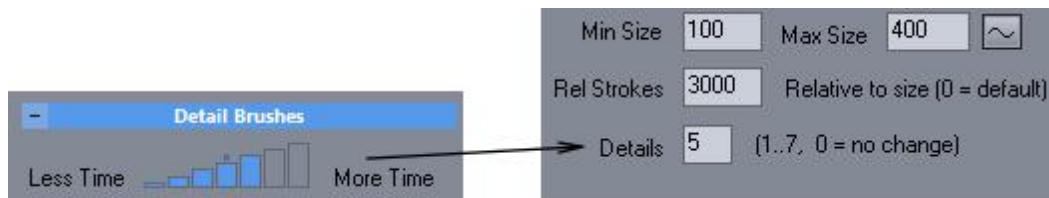
Objects - reflects the number of brushes defined by Color and Alpha JPG files - usually 100, unless less is used.

Min/Max size of Brush - this is the actual range of the brushes resizing during painting.

AutoSize¹⁶³ can be also set as a default.

NEW in v.7: **SMART** size - when enabled the Brush will autosize depending on the complexity of the image (less complex parts will use larger brush than more complex parts)

Relative Stroke - relative amount of strokes that determines when the cycles will switch from Underpaint to Detail. This number is affected by the Canvas Size as well as Detail Brushes slider (also same as Details inside the template)



Because of the way the actual number of strokes is affected by other parameters, this is simply relative and should not be expected to be a real number. Making it bigger will also make the Underpaint cycle last longer.

The Details (also Detail Brushes on main interface) sets the amount of Underpaint vs Detail Brushes time. Setting larger number will make the Underpaint cycle last less.

However since a few version back the actual amount of Detail brush strokes is now fully controlled in Continuity tab¹⁶³ in the Template Editor - making both Rel Strokes and Details setting affecting the Underpaint cycle only and incidentally making the Detail Brushes slider confusingly named.

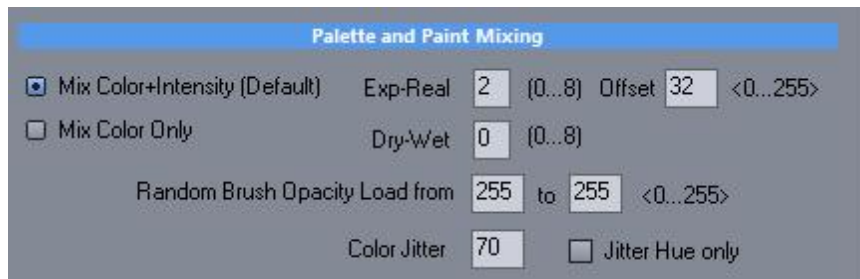
Palette and Paint Mixing

Palette settings determine how the template is mixed with the colors from the actual photo. The **Exp-Real** sets the default value of the Expressive Realistic slider (ERS) on main "Painter" interface.

The Offset sets the default offset of this ERS control relative to 0. Together with the slider a higher value determines the image will use more real colors, lower value it will use more template colors. The internal relation of those two parameters are $\text{RealColors}(0,255) = \text{Offset} + (\text{ERS} \times 16)$;

Dry-Wet will set the default value of the Dry-Wet slider (DWS). The Dry-Wet will determine how the brushes will blend to the canvas. Dry (0) will put the stroke sharply there while Wet(8) will blend part of it. $\text{DryWet}(0,255) = \text{DWS} \times 32$

Random Brush Opacity Load - if different values than 255 the opacity of brushes will be randomly chosen from minimum to maximum value (for example: 128 to 255 but also valid: 128 to 128). Default is 255 to 255 which means the brushes will be painted with full opacity



Color Jitter

Adds jitter of the colors to the brushes (changing the colors and intensity slightly). If Jitter Hue only, only the HUE component will randomly change from brush to brush.

0 - no effect, around 30 - small-to-medium effect, 60 - more noticeable jitter, above 100 - very noticeable

Segmentation and Simplify steps - Legacy Input Prep

Those optional steps will be performed very first before any painting. They are switched off by setting 0 in the Detail. Time determines the relative % of the time used for those steps (100% default). Smooth will remove the photographic texture, smaller number will keep more of the texture.

Segmentation will simplify the image where almost nothing will be recognizable. This is used to remove background and create abstract texture and work with Portrait mask to omit the simplification of portrait figure.

Simplify will omit small photographic details.

Any Type can use those steps by entering Detail > 0, but the Portrait with Simplify/Segmentation types will always use those settings.



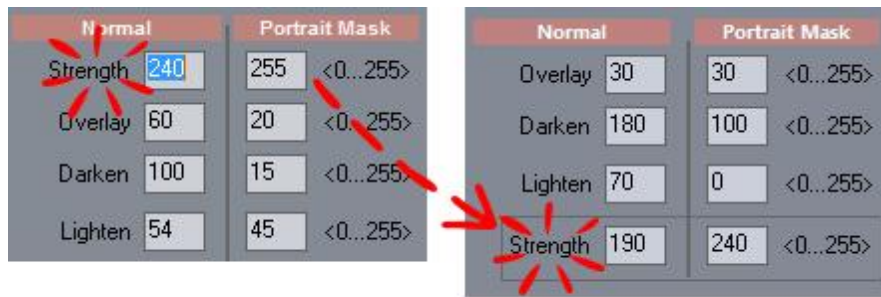
The settings are legacy due to their limitations - it is now better to use various Reactor effects instead in the Prep cycles for segmentation or simplification

Dry Reveal Step

This step is inserted between Underpaint and Detail brush step. It is to reveal the features of the photography using a hair thin dry brushes, softening underpaint brush strokes.



Note: The look changed little in the version 6 to visually correspond with the Right-Click pause sliders.



The look changed in version 6

The dry reveal can be used as one of:

- only when a mask is defined, if not defined this step is skipped
- require mask and always ask for it if not defined
- use this step always regardless if mask is defined or not (many templates use this option)

Omit border - the dry reveal will omit borders and apply only to center of image (0 switch off = whole image, 255 - fully omit borders)

Normal/Lighten/Darken Borders - works with the omit borders above and set if the borders should be lightened or darkened.

Strength/Overlay/Darken/Lighten without mask and with Portrait Mask

First column specify the Dry reveal settings without mask and the second number specify values used where the Portrait mask is defined.



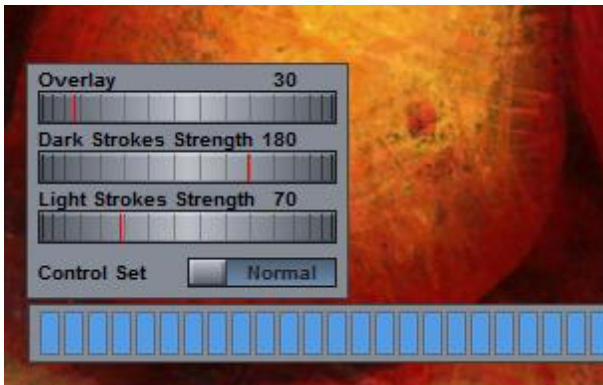
Last Used / Visual Adjust



Helper Functions: Last Used will enter the last used Dry Reveal settings (that may have been changed during painting through Right-click pause). It will apply the settings to Normal part.

Visual Adjust

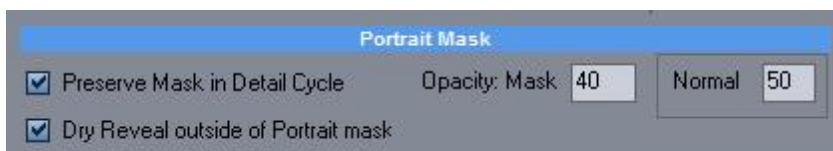
If you previously run the input image through painting process, you can visually adjust the dry reveal coefficients with this function. It mimics the settings during right-click Pause where you can see the changes. It always uses the last run painting.



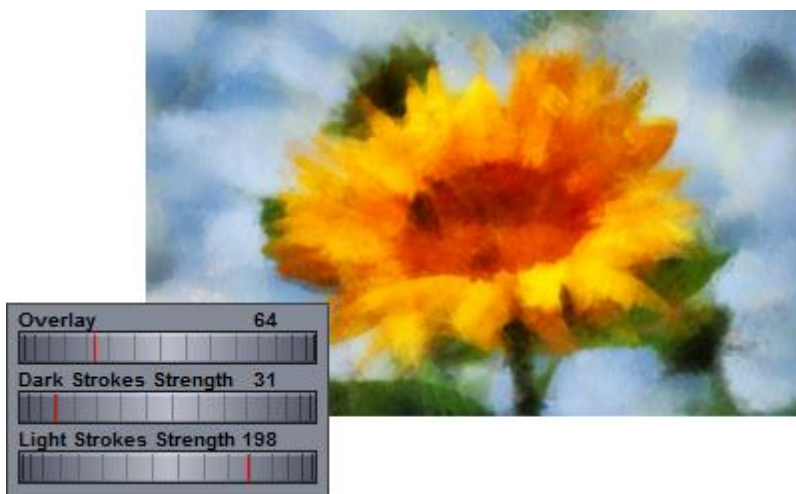
Preserve Mask in Detail Cycle Opacity Mask Min-Max (Works if Portrait Mask Set)

If set, the Dry reveal part will be preserved under the mask during the detail paint - that means the detail paint will paint less over the masked portrait area and more over the unmasked area (background). The Max specify how strong will be the detail brush outside Portrait mask area and the Min will specify how strong will be painted inside the mask.

If mask is not set the Normal value can be set to specify the opacity of detail cycle across whole image

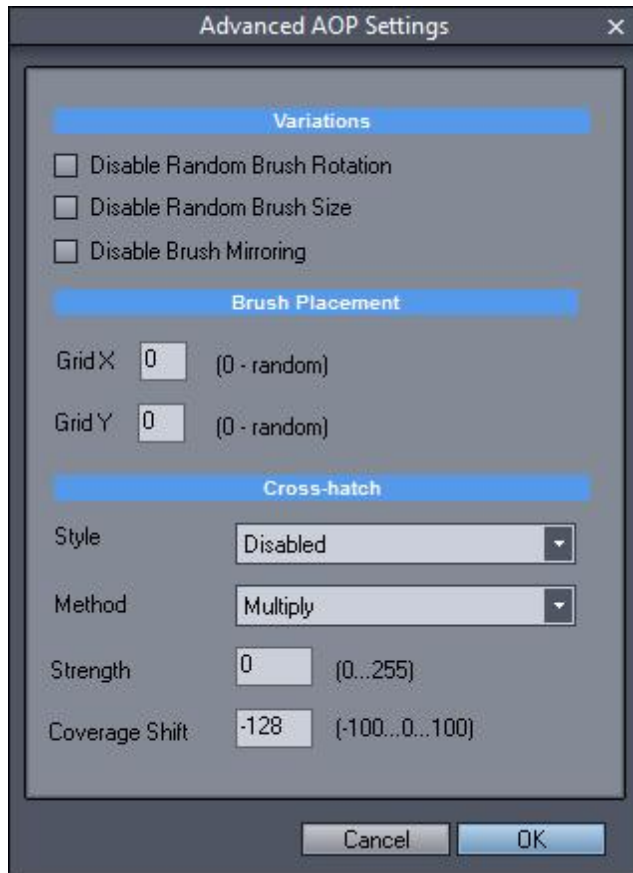


If Dry Reveal outside of portrait mask - if the Portrait mask is defined the Dry reveal will be also applied outside the mask using the first column of numbers. (usually Yes on most templates) That means the Dry reveal will be partially applied outside mask and more strongly applied inside the mask. If unchecked the Dry reveal will be applied only under the mask.



The parameters will be visible during pause on Dry reveal cycle where we can interactively change them. if a mask is defined the pause values will affect the values in Portrait Mask column, if no mask is defined, they will affect the values in Normal column.

Advanced AOP Settings



Variations - disable random variations (for example you require your AOP don't rotate the brush strokes)

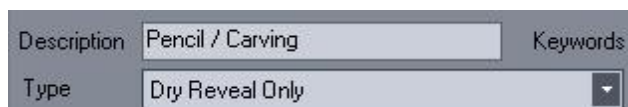
Brush placement - alternatively you can instruct to place brush strokes only in predefined grid (such as 10 by 10 for example) not randomly.

Cross-hatch

This settings is to add subtle cross-hatch shading to the style.

Dry Reveal Only type

Some of the recent templates may not always go through the process of brush paintings. Such template have set Dry Reveal only type and are entirely based on a **Reactor** process as the main process (instead of being just a secondary process to brush painting)



The templates will also display "Reactor" instead of any brush template images or can have only few basic brushes. (the brushes are there for compatibility reasons but will not be painted)



This type of template will pre-process the input then go directly to the Dry Reveal Stage where it will apply some complex Reactor process and then quit. The templates that work this way will be also marked with an R in their thumbnail (this was set as a courtesy by the author and may not apply to all templates or to third party templates)

For an example, see the "Glamour" preset.

10.2 Reactor Files

There are Reactor entries at many places in the Template editor. You may think about reactor files as a sort of plug-ins (which are editable)

Reactor is a virtual effect system developed by mediachance. A reactor file called VFBOX is created by using Photo-Reactor software, then it can be run inside host application such as DAP.

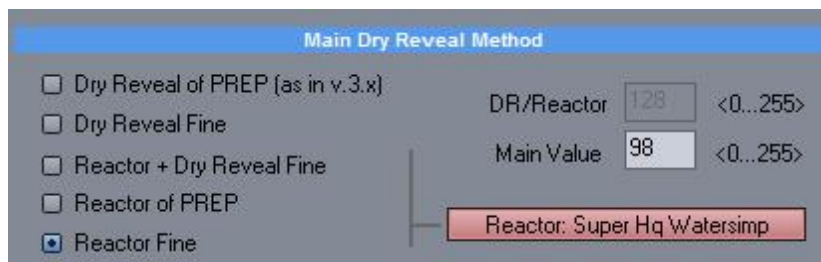
It is not required to have Photo-Reactor installed in order to **run** pre-made VFBOX files but it is necessary if you want to edit them in depth, modify them or create new ones.

Note: Reactor files are part of the versioning system since version 5.

Important:

It is advisable when you modify the factory VFBOX files to always save them under different names since the original templates may rely on many of them.

If you accidentally modify the factory templates you can reinstall them back using menu Tools->**Reinstall Factory VFBOX** files which will simply delete your made copies from the user folder. A normal software reinstall will not overwrite the VFBOX files that are in the user folder as they take priority.



Reactor effects can be inserted at many places in the template editor and do have various inputs and affect various parts of the process flow (see later).

Reactor Browser

Reactor files (VFBOX) can be accessed using the reactor browser (click on any reactor button in the Edit Template).



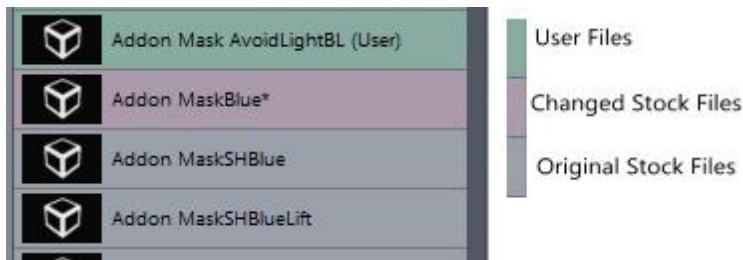
Each reactor entry has associated a search parameter to show the effect most suitable for that particular part but that is only a guidance to organize the large number of files. You can type in your own search command or remove the search altogether and use any reactor effect in any place if it does what you want.



If you have **Photo Reactor** installed, you can also edit the reactor files.

Versioning System

DAP will keep track of changes and it will display them on a color coded background. The Grey are stock Reactor files, Red are changed files and Green are User files.



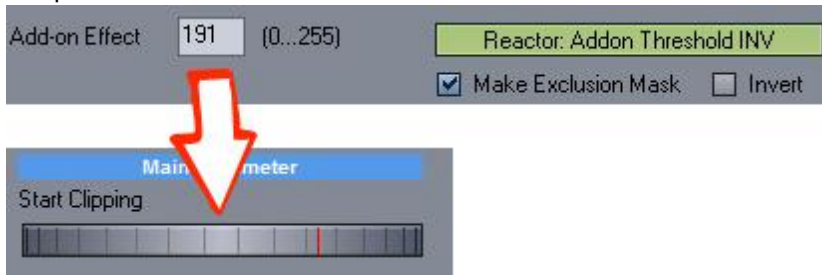
It is important to note that the Red - changed files may not actually be different from the original stock Reactor files! DAP noted that at some point **in a previous version** you may have attempted to edit the vbox file with "Edit in reactor" button, which then created a local copy in the user documents for editing that has been kept since then.

It is best idea to always save reactor files with different names.

You can remove the duplicates with menu Tools - Reinstall Stock VFBOX files. This will turn all red backgrounds into grey - indicating that you are using stock reactor files.

Main Parameter

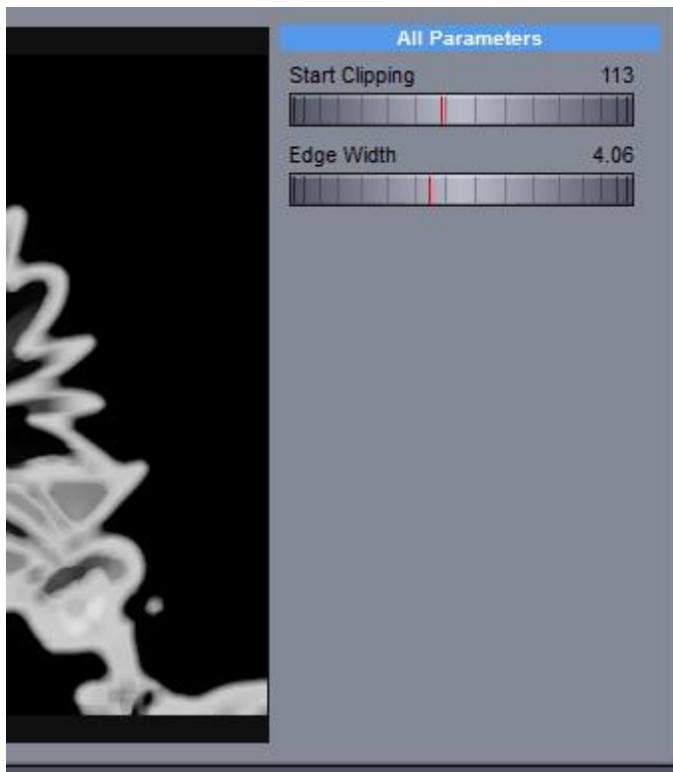
The first parameter in VFBOX is considered the "Main Parameter" and it is also exported out back in the Template Editor as an edit box value near the reactor effect.



In v.4, Reactor preset had only one parameter that could be tweaked in the DAP - the first parameter from the VFBOX parameter group.

In v.5 many more parameters can be tweaked (if the VFBOX has them exported, still many VFBOXes that are carried from previous version will have only one parameter)

All Parameters (added in v.5)



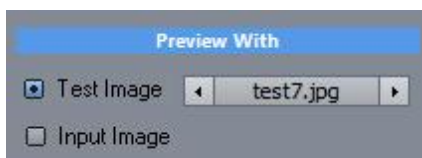
All VFBX exported parameters are shown on the right side and they can be used to fully tweak the effects. Please note, for backward compatibility the first parameter is always the same as Main Parameter on the left side.

Please note: when you edit the files, save them under different names to avoid breaking down presets that may use it. You can for example put a prefix with your name, so it will become easy to search.

Note: Editing VFBX files may be rather a complex job. Reactor offers an unsurpassed flexibility but many effects are build with large number of objects sometimes 50 or more.

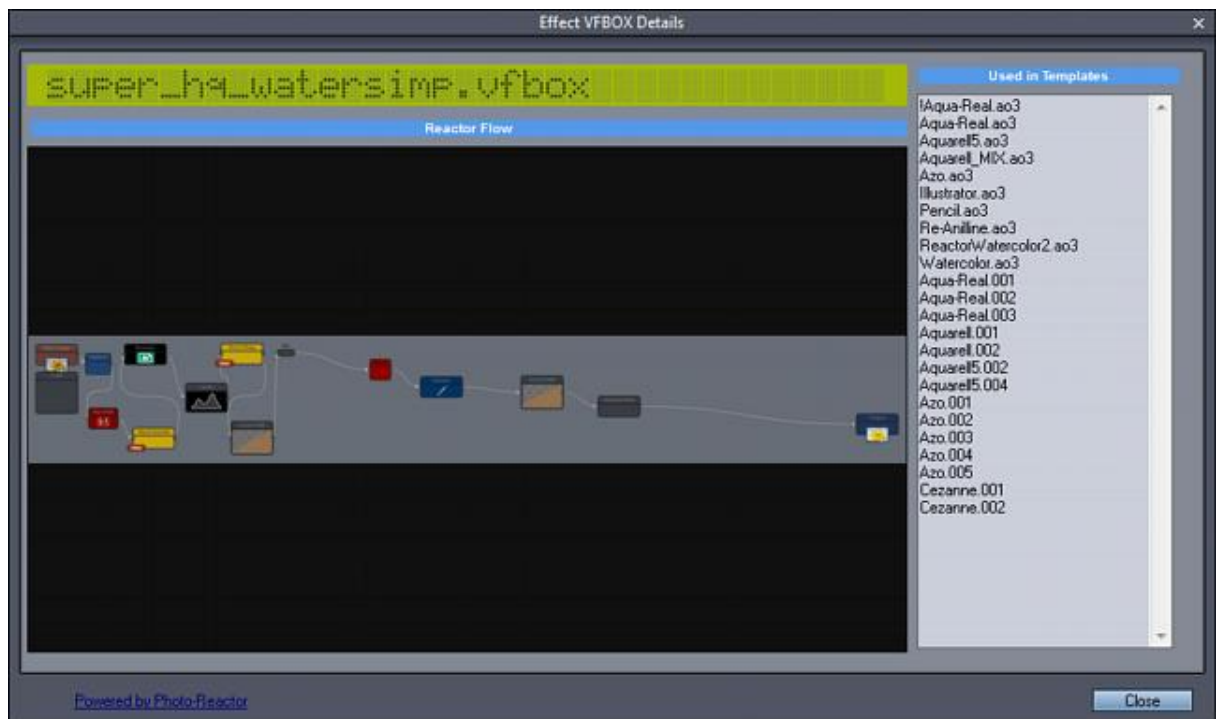
Test Images

In version 6 Reactor Browser adds numerous preview images in various styles as well as input image preview to see the effect of the reactor process on different scenarios. You can add your own numbered test images as jpg files named test<NR>.jpg to sub-folder \Reactor in the main application folder.



Effect Details

Renders Reactor Flow chart and shows in which templates and variations this effect is used. (templates end with .ao3, variations have number extension such as .002)



Limitation of Effect Details: In the version 6 that allows user subfolders, the search will not be recursive - it will show only templates from current folder.

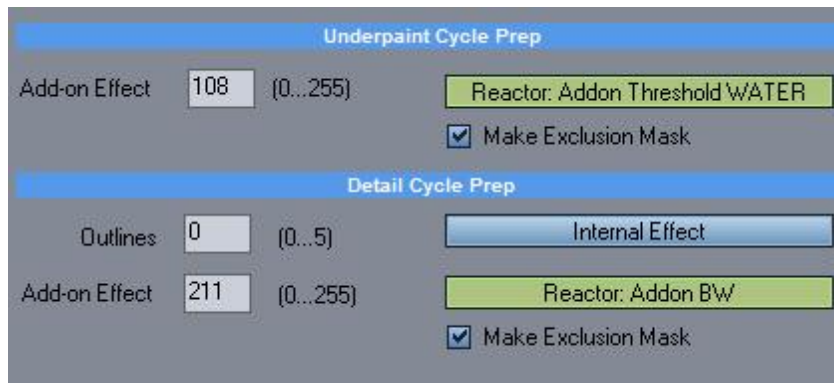
10.3 Exclusion Masks

Some of the reactor effects can be turned into an Exclusion mask. Exclusion masks excludes areas from painting.

Please note, the exclusion mask is **inverted** from the actual mask that will be displayed in the Panel.



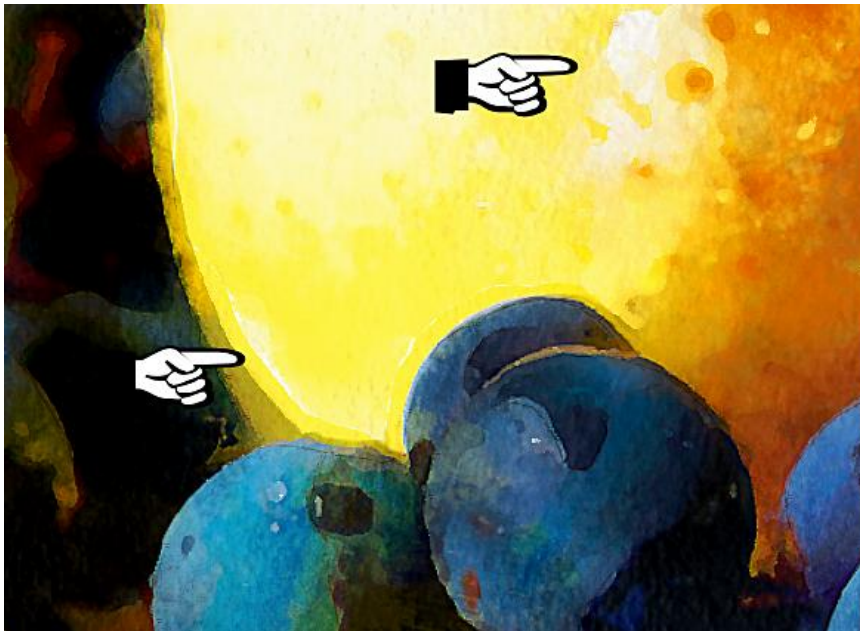
The exclusion masks are grayscale filters where the **white is the exclusion** (or avoidance - think of it as a masking fluid) and black is where the brushes will be placed. If you display Detail or Detail Addon Mask in the Panel, this would display all the combined masks together in "alpha channel" notation and it will be therefore the opposite of Exclusion Mask.



For example you may avoid painting light colors during one cycle or paint only shades under or over certain threshold limit in different cycle. Then you may set up a different mask for next cycle so for example an underpaint would paint only in dark areas while detail cycle would paint only in light areas. Since the masks itself can be processed with any of the internal reactor effects it really depend on your imagination how you going to use it.

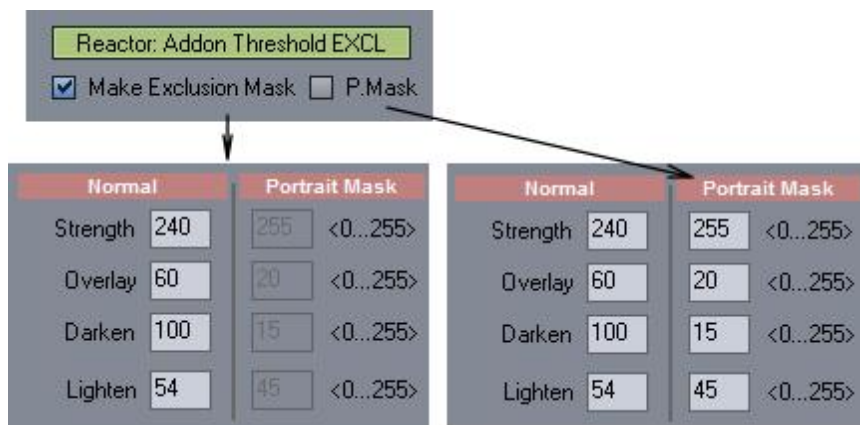
The preset Aqua-Real shows a good example of exclusion mask for various cycles - first in underpaint it avoids painting lights to let the canvas show, then in dry reveal it creates a hill function where the mask

will exclude a thin slice of mid tones thus creating a gap in what would be otherwise smooth gradient giving the strong illusion of real painting with watercolors.



Dry Reveal - Exclusion Mask

It becomes a bit more complex with the Dry Reveal and Exclusion masks because we may also have portrait mask (a mask user manually paints over faces).



The rules are as following:

When Make Exclusion mask is used the Dry reveal strength depends only on the Normal settings. So in this case the Dry Reveal will be used between zero and the value set in the Normal Settings.

When Make Exclusion mask with P.Mask is used the Portrait Mask is created or modified from the exclusion mask. That means the dry reveal will be used in the range between Normal and Portrait settings.

It is quite difficult to imagine all the dependencies.

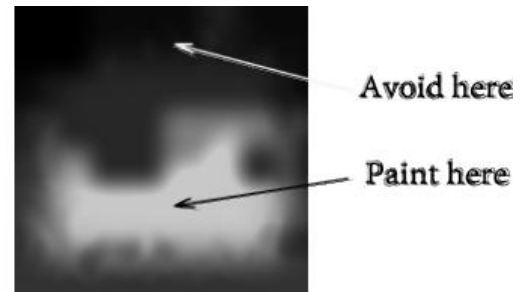
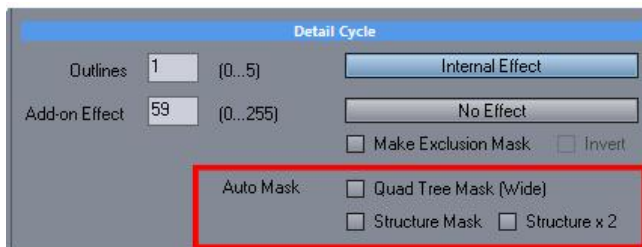
10.4 Auto Mask

A new (since v. 7) automatic masks for detail cycle can be generated using Quad Tree Mask or Structure Mask. Quad Tree mask is based on masking out flat areas with less details, Structure Mask will mask out areas outside the edges.

They can be combined together.

The Structure x 2 applies wider Structure Mask.

Note: The mask displayed in Panel ²⁰¹ is not the same as exclusion mask described before; it is the cumulative from all the masks and follows traditional "alpha channel" where the white determines where the brush strokes will be applied and black is where they will be avoided.



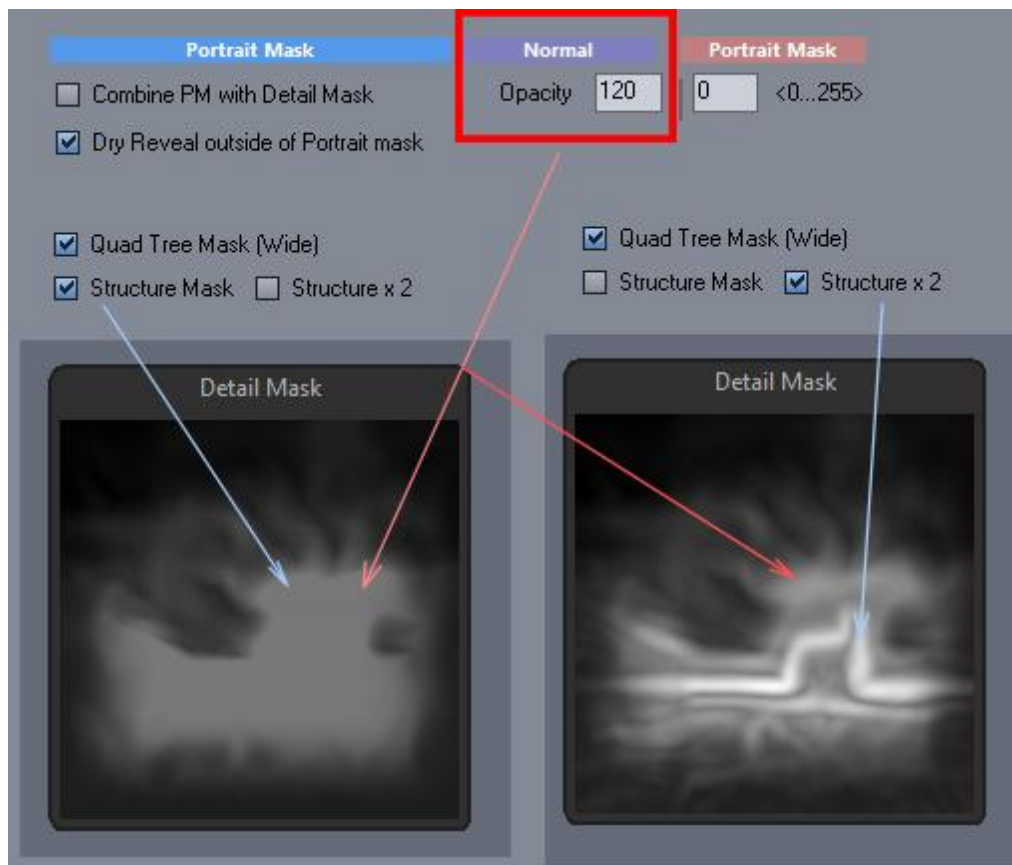
Please see the difference between the auto-generated masks:



Note: in version 8 The Invert checkbox above the Auto Masks will be enabled if either of the Auto Mask is selected and can be used to invert the Auto Mask

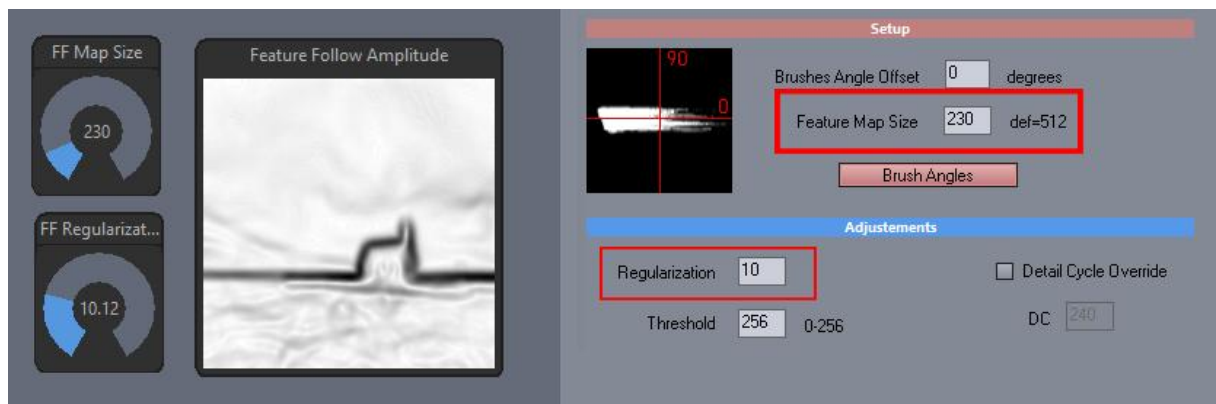
Note: There is also a special relationship with Portrait Mask Opacity - see Portrait Mask in Dry Reveal tab ¹⁵¹.

The opacity set in the Normal opacity (less than 255) will both apply to Quad Tree mask and Structure Mask, but not to Structure x 2, allowing you to create transparent large mask with strong edge superimposed on top.



Structure Mask fine-tuning

Structure Mask is derived from the Feature Follow¹⁷³ Amplitude and so it depends on the Map Size and Regularization. Increasing Map size and Decreasing Regularization will make the mask thinner and sharper.



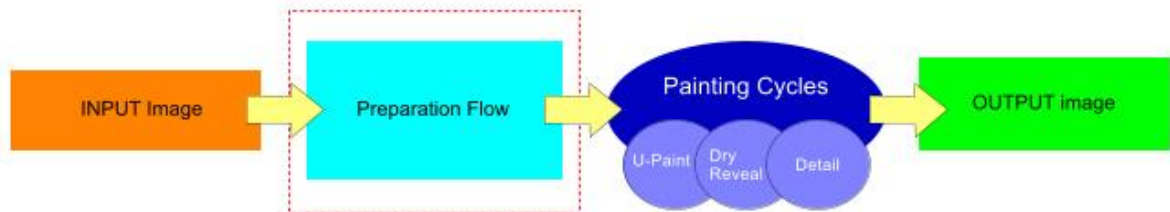
You can preview masks during painting in the Panel¹⁹⁴.

10.5 Preparation Flow

Tools - Template editor - Preparation Tab

A crucial part of the painting process is the automatic preparation of the input image before painting starts.

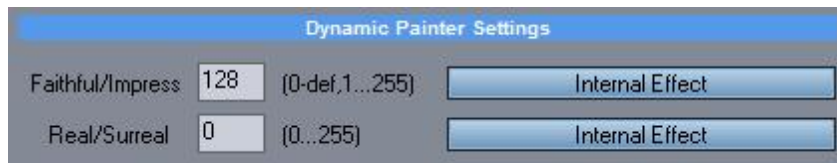
Note: All effect and Reactor filters in this section are applied to the INPUT image which is then used by the painting process as a guide for the actual painting. The effects will therefore not affect the output image directly but through other cycles (underpaint, Dry Reveal, Detail)



Many default effect can be now changed or augmented using the Reactor vbox files. It is not necessary that you need to replace the default effect with a similar effect. You can put practically any other effect in place.

First Round - Dynamic Painter Settings

- this effect will apply to underpaint, dry reveal and detail paint cycles

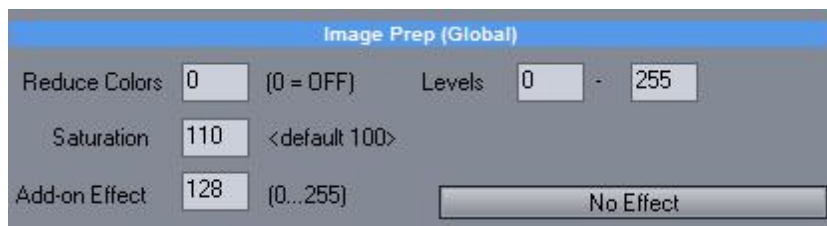


Faithful/Impress - by default it applies a local contrast-like function (similar to Dramatic Tone in Reactor)

Real/Surreal - by default it apply turbulence-like setting for simulating hand drawn shapes

Second Round - Image Prep (Global)

- this effect will apply to underpaint, dry reveal and detail paint cycles



Reduce Colors - reduce number of colors (no dithering), similar to Reduce Colors in Reactor

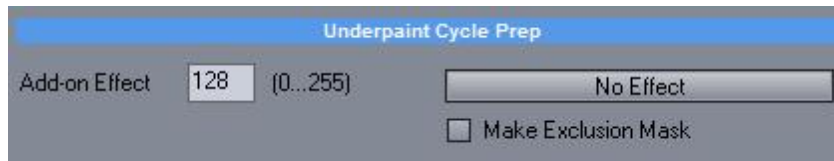
Saturation - simple saturation adjustment

Levels - simple levels adjustment

Add-on Effect - add custom reactor effect

Third Round - Underpaint Cycle Prep

- this effect will apply to input image only during underpaint cycle

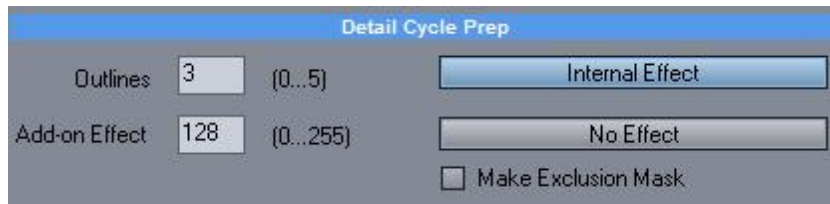


Add-on Effect - add custom reactor effect

Make Exclusion mask - instead of applying it as an effect to input file, the vbox filter will be used as an exclusion mask^[145] (see previous chapter) during Underpaint cycle

Fourth Round - Detail Cycle Prep

- this effect will apply to input image only during detail cycle



Outlines - by default apply outline to the input image, similar to outlines using difference of gaussians (DoG)

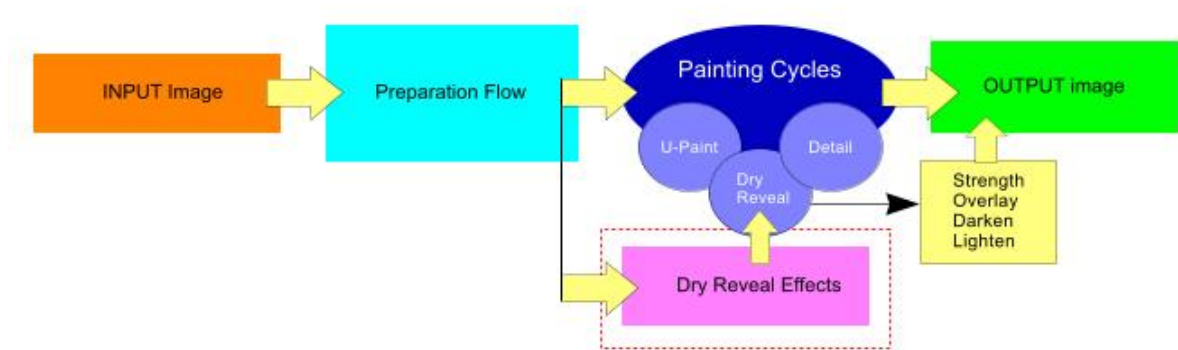
Add-on Effect - add custom reactor effect

Make Exclusion mask - instead of applying it as an effect to input file, the vbox filter will be used as an exclusion mask^[145] (see previous chapter) during detail cycle

10.6 Dry Reveal Flow

Dry Reveal flow has been expanded in the version 4.

Dry reveal effects are hybrid effects. Similarly to the Preparation Flow they are applied to the INPUT image (After preparation), but they directly affect OUTPUT image using the Dry Reveal parameters. Dry Reveal was originally added to increase fidelity of the final results.



Dry Reveal (Before Detail Step)			Normal	Portrait Mask		
Detail	6 <1...8>	Smooth	100	Overlay	140	50 <0...255>
<input type="checkbox"/> Only If Mask		Time	100	Darken	200	70 <0...255>
<input type="checkbox"/> Require Mask		Omit Border	130	Lighten	150	90 <0...255>
<input checked="" type="checkbox"/> Always		Normal Border		Strength	160	240 <0...255>
			Last Used		Visual Adjust	

For the basic settings of the Dry Reveal from above image see the Template Editor Basics¹³⁰

We will be often referring to Portrait masks and Detail masks.

Detail masks determine where Detail Brushes will be painted. Most often this is not a painted mask by hand but automatically generated (for example by Reactor) and combined through the process.

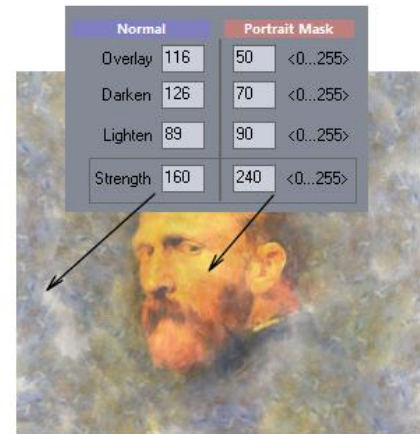
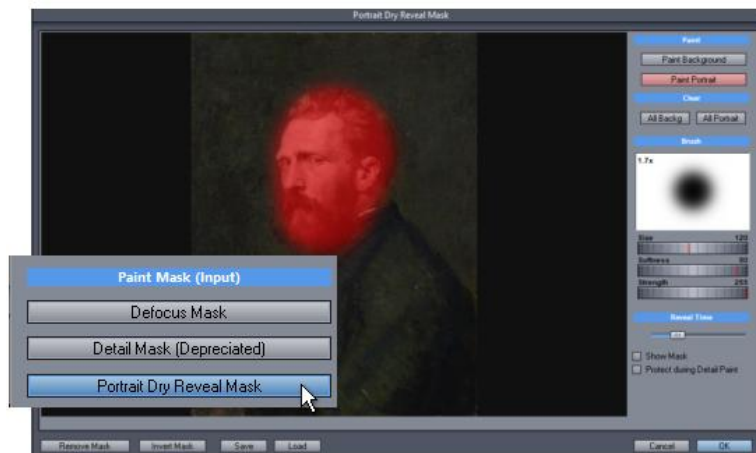
Portrait Mask determine when a special process should be applied over face - and it would be a mask that is hand painted over the image before the painting starts (using Advanced tab - Portrait Dry Reveal Mask)

If we are not going to use Portrait Mask then the Values under Normal column apply and the values under Portrait Mask column are ignored.

Normal/Portrait Mask columns

When Portrait Mask⁴⁶ is defined before painting then the settings under Normal column will be applied outside of the defined portrait mask and the settings under Portrait Mask column will be applied where the mask was hand painted.

This applies regardless of the Main Dry Reveal method.

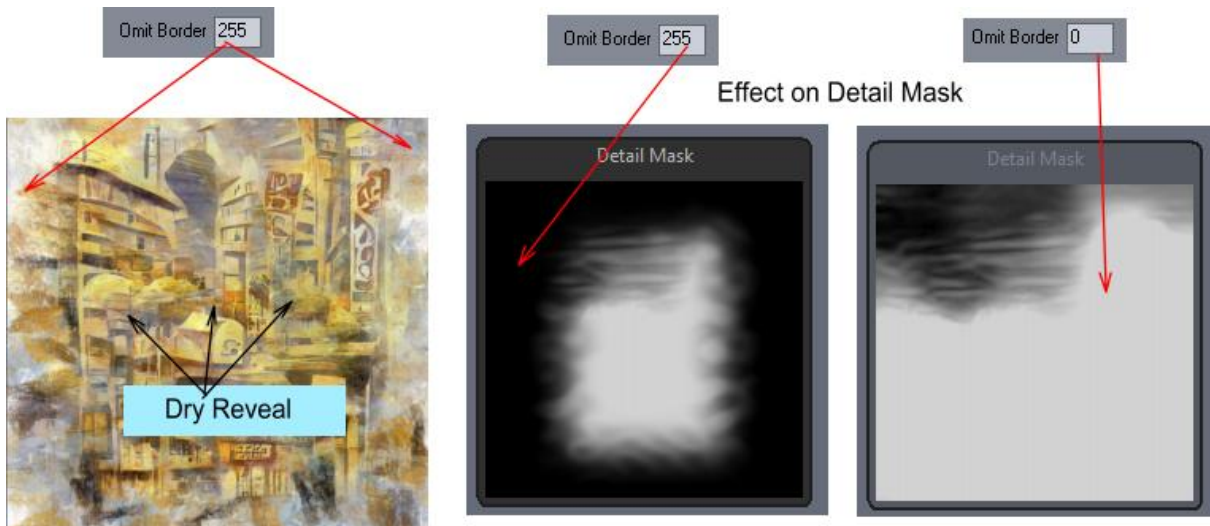


Omit Border

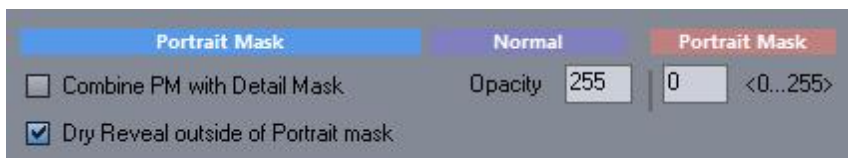
During Dry Reveal the borders could be avoided.

Larger number means larger border will be avoided (letting Underpaint Cycle pass through at the edges) as well as adding the border to the Detail mask in Detail cycle.

Note: The omit borders has effect the Detail cycle by combining any Detail mask with the omit border mask. The idea of "Omit Borders" is to create painting that has borders painted in much lower fidelity than the centre so it affect both Dry Reveal and Detail brushes.



Portrait Mask



Note, in version 7 The Normal and Portrait Mask opacity entry were switched around to correspond to the Dry Reveal (normal on the left, Portrait Mask on the right)

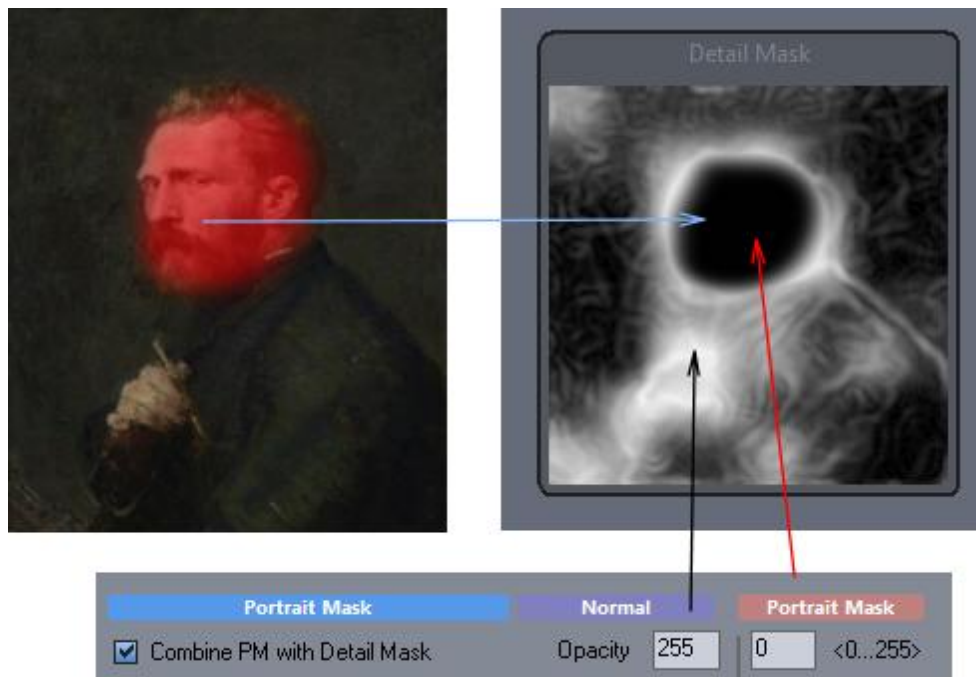
Combine PM with Detail Mask

If Portrait Mask was defined it can be also combined with the Detail cycle - that means it can be added to a detail mask. The opacity of the added mask (= opacity of the detail brushes) can be regulated by the two values Opacity:Normal and Opacity:Mask.

Normal value tells you the opacity outside the mask.

Mask value tells you the opacity under the Portrait mask - (example: if we set 0 then the detail brushes will NOT be painted where the mask was defined)

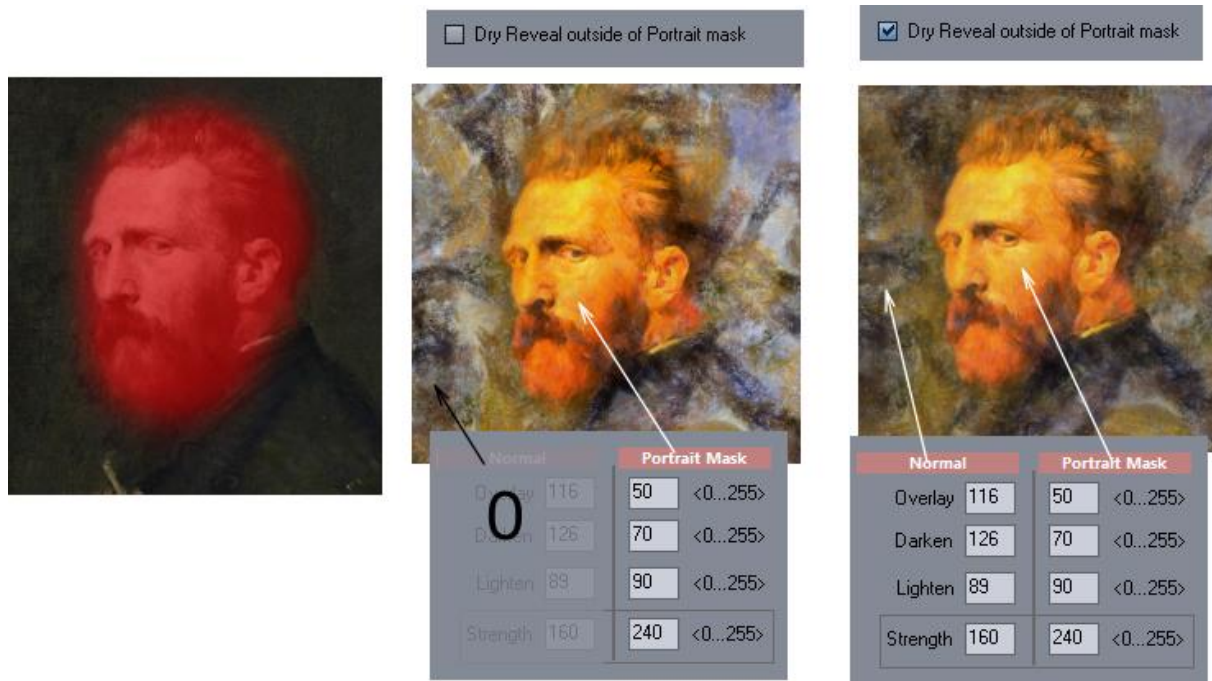
See how Portrait Mask can combine with auto-generated Detail Mask



Dry Reveal Outside of Portrait Mask

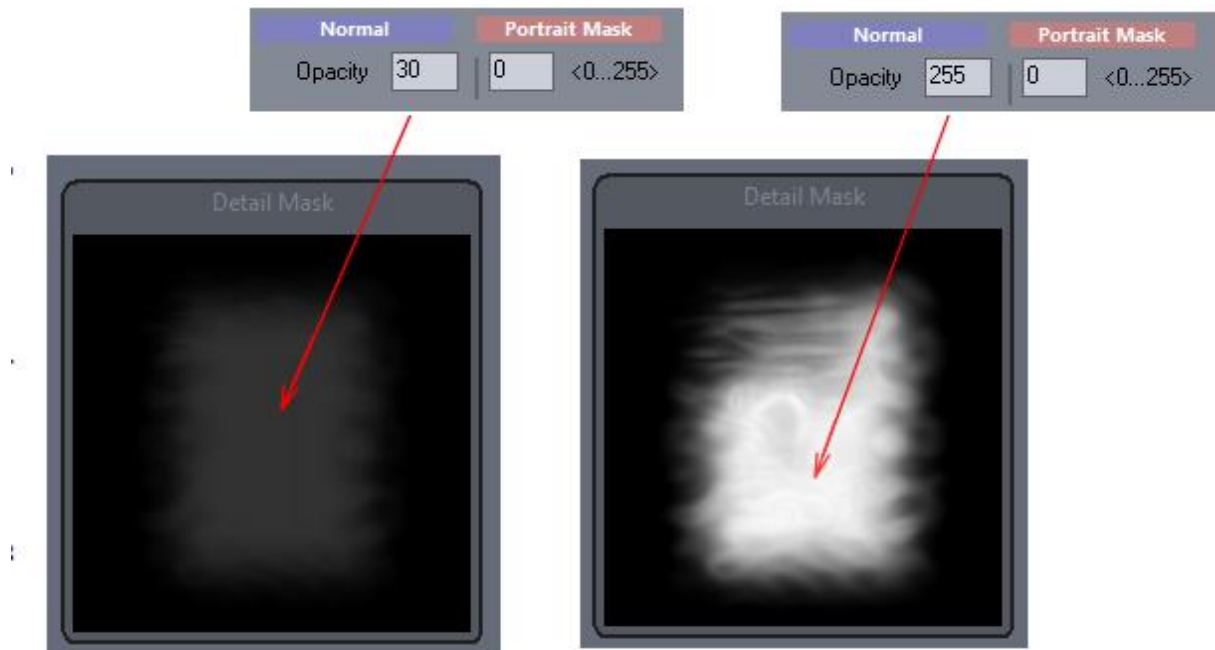
The default is ON. When checked the portrait mask behaves during Dry Reveal as described in the **Normal/Portrait Mask columns**

When it is OFF then outside of the portrait mask will have no Dry Reveal (essentially Strength outside PM will be zero)



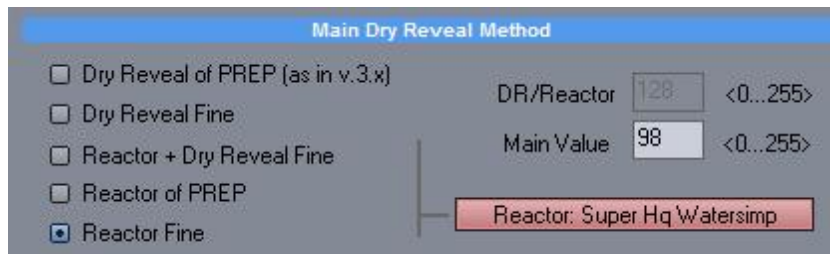
Opacity of Detail Brushes (Regulate strength of Detail mask)

In a case when there is no Portrait Mask defined, the Normal opacity value still applies to the Detail Mask. This way you can regulate the opacity of detail brushes (regardless if Combine PM is on or off - just lower the Normal Opacity and the detail brushes will be painted softer)



Method of Dry Reveal

Version 4 has now more methods of dry reveal. It also introduces Fine image which is an input image with finer details than in version 3.



Dry Reveal of PREP

- same as in version 3, this will use the Dry Reveal settings (Smooth/ Time etc...) using input image after the image preparation functions (that means after the Dynamic Painter Settings and Image Prep (Global) applied)

Dry Reveal Fine

- as previously but now uses more finer input (more details). Fine input image has also applied Dynamic Settings and Image Prep.

Reactor + Dry Reveal Fine

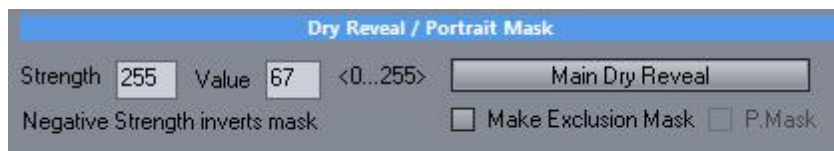
- apply reactor effect and Dry Reveal of the Fine input image. DR/Reactor sets the default value of mix between Reactor effect and Dry Reveal Effect

Reactor of PREP

- apply reactor effect as the Dry Reveal effect (skips the internal dry reveal that is used in all above methods)

Reactor Fine

- apply reactor effect as the Dry Reveal effect on the Fine image (skips the internal dry reveal that is used in all above methods)



Dry Reveal / Portrait Mask

Apply second Reactor effect to the part under Portrait masks, apply Exclusion or generate Portrait mask.

If make Exclusion mask is ON it uses the reactor effect as an exclusion mask^[145] during the Dry Reveal Cycle.

P.Mask - it will create portrait mask from the reactor effect (as opposite to hand drawn Portrait Mask)

This settings does a few different things depending on the option used.

There are two masks that can be used during Dry Reveal.

1. Portrait mask

Portrait mask will either choose the main dry reveal strength settings from the Normal Column or From the Portrait Mask column (see the top of this chapter)

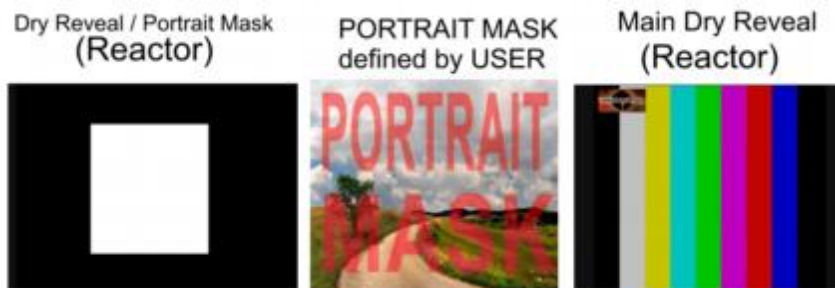
2. Exclusion Mask

Exclusion mask will exclude areas from the Dry Reveal cycle.

Exclusion mask will be inverse combined with any existing Detail Mask to do the job - NOTE the exclusion mask is defined in inverse to detail mask (long story short, it was an unfortunate judgment back when the masks were added - it would be logical to have both masks the same way - but, sadly for historical reasons we have to keep with this)

In Exclusion Mask the light parts are the parts that will be excluded when details are painted and the Detail mask is defined the other way around - light parts as where the details will be painted.

We defined the masks and dry reveal effect as following:



This is only to see the difference - otherwise such images will have no real purpose.

Make Exclusion Mask = Off - Second Dry Reveal Effects but it require Portrait Mask

In this mode the Dry Reveal/Portrait Mask reactor effect becomes an alternative Dry Reveal effect that will be applied where the User mask is defined, otherwise the original Dry Reveal effect will be applied. As usual, the opacity of the effect under the USER mask will be controlled by Portrait Dry Reveal Strength and the opacity outside the mask will be controlled by the Normal Dry Reveal Strength. Except in this case those two effect can be different. The mask as whole is controlled by the Strength settings. This mode requires to have USER mask and if user mask is not created, the process will work as usual (use the Main Dry Reveal Effect).

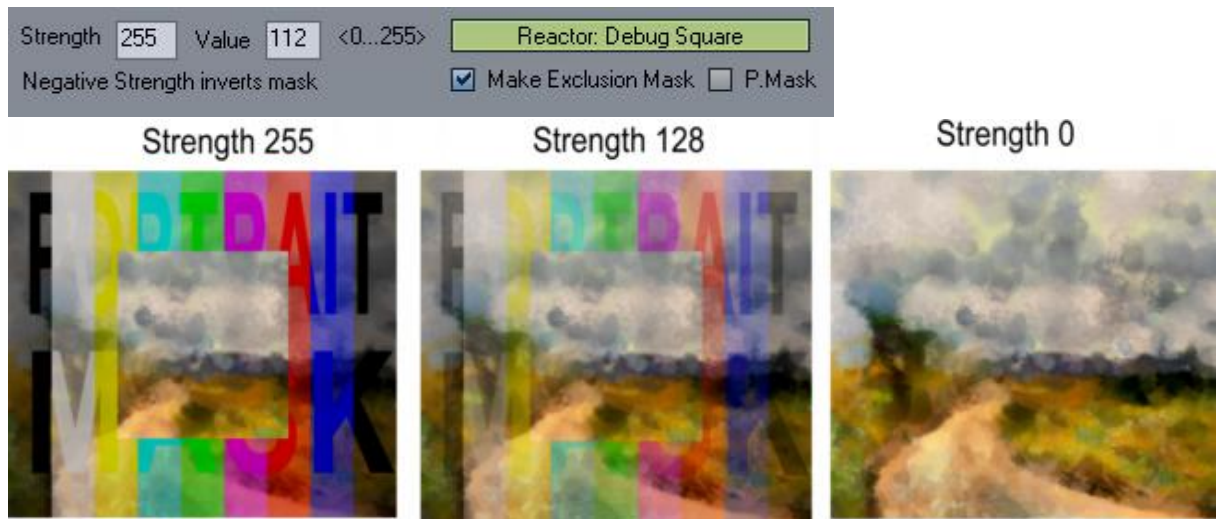


Example: This mode can be used to create one dry reveal effect under normal conditions (for example a Watercolor type) and then different dry reveal effect where user paints the Portrait Mask (for example a smooth Oil effect).



Make Exclusion mask = ON

In this mode the reactor file works as an exclusion mask and it will always exclude parts of the image (where the mask is white) from the Main Dry Reveal Effect. The Strength is defined by the Strength in The Dry Reveal/Portrait Mask settings. The Exclusion Mask is combined with any USER Portrait Mask in such way that User Portrait Mask will simply strengthen the areas that are not excluded. The User Portrait Mask strength itself is controlled by Normal Dry Reveal Settings. The excluded areas will always be excluded regardless of any of the settings.



Example: This mode can be used to hide dry reveal effect from parts of the image where it will be disruptive. In our case we excluded all the highlights and let dry reveal be applied only where dark areas of the image are.



P.Mask = ON.

In this mode the reactor file becomes the USER Portrait mask. This is a way how to create a portrait mask without user interaction. (for example if we can pinpoint skin colors in the reactor file we can use that as a portrait masks)



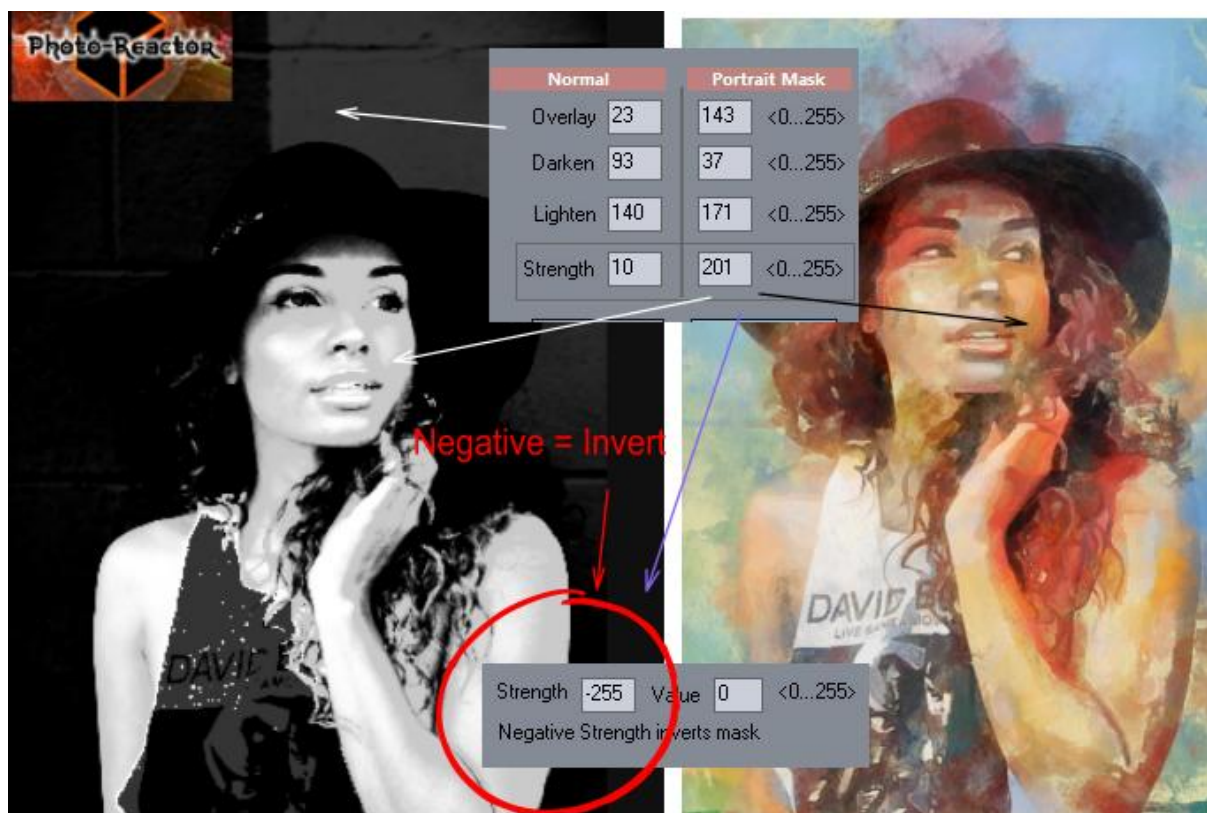
The Main Dry Reveal effect will be divided with different strengths controlled by the Normal and Portrait mask settings.

In such a case where user will define his own portrait mask anyway then the result will be a combination mask.



It is important to note that in this case the White is the **Normal** part and the DARK is the **Portrait Mask** part.

An Example would be to create a portrait mask that will add higher Dry Reveal Strength to the face and skin than to the background. As mentioned above, since white is the Normal part - we need to use Negative Strength to Invert the mask in this case.



If you need to invert the mask, you can add minus in the strength.

10.7 Insert Effect Flow

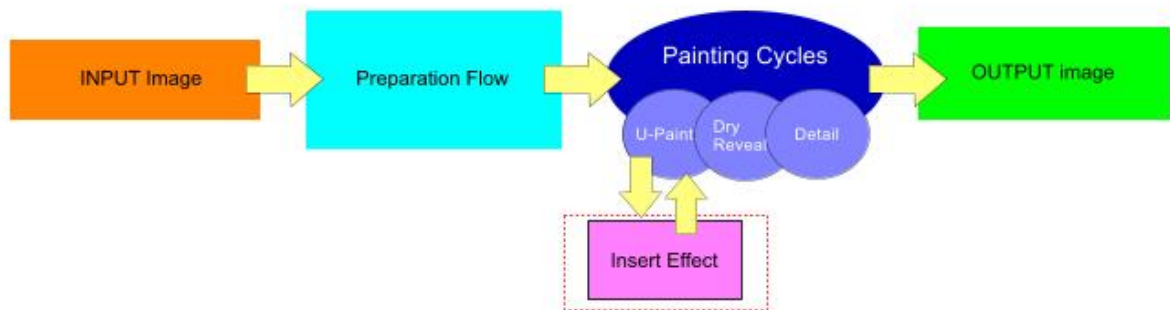
An additional Reactor effect can be set at various insert points.

Important:

The effects in the Preparation flow and Dry Reveal Flow were applied to the input image, which is used as a guide for the painting or Dry Reveal.

Insert effects are applied to the **currently painted (output)** image at various points and they directly affect the image we see on screen.

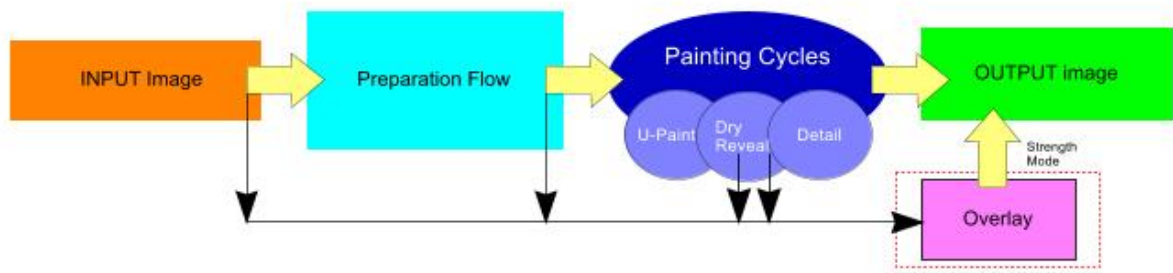
This is a crucial difference.



Process Output - After Underpaint			
Effect Value	<input type="text" value="5"/>	(0...255)	<input type="button" value="No Effect"/>
Process Output - After Dry Reveal			
Effect Value	<input type="text" value="17"/>	(0...255)	<input type="button" value="Reactor: Insert Sharpen"/>
Adjust Input for Detail Cycle			
Effect Value	<input type="text" value="29"/>	(0...255)	<input type="button" value="Reactor: Insert LevelHue"/>
Reactor effect during Detail Cycle / Overlay			
Effect Source	<input type="button" value="Dry Reveal -> Input"/>		
Effect Value	<input type="text" value="128"/>	<0...255>	<input type="button" value="No Effect"/>
Strength	<input type="text" value="128"/>	<0...255>	Mode <input type="button" value="Normal"/>

Reactor Effect During Detail Cycle

The reactor effect will become active during Detail cycle and can overlay an reactor effect using Strength (opacity of the effect) over the output image. The input of the effect can be chosen from various sources such as Source before or after preparation, dry reveal etc.

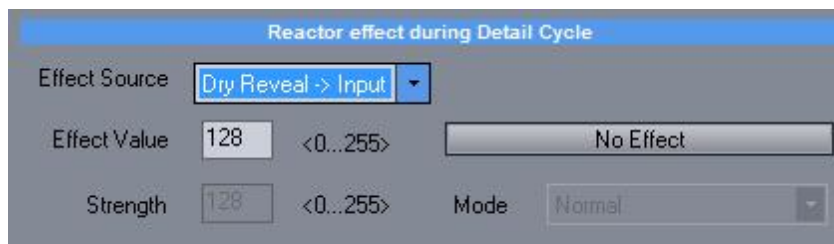


Note: This effect is similar to (and can be substituted with) the effects in Layers ¹⁰⁶

Special Case: Dry Reveal -> Input

The Dry Reveal cycle will be used as a new input for the Detail cycle. Optionally, if you specify a reactor effect here it will be applied to the new input as well. This way a detail cycle can continue painting image based on Dry Reveal processed image instead (normally it would use the same pre-processed input image as in underpaint cycle).

Note: The Reactor effect may be empty in such case (No Effect) or can contain additional VFBOX process that will be applied to the pre-processed input first.



Example: Dry Reveal adds a turbulence to the image, we would likely want to continue painting with that turbulence in the detail cycle, not with the original input image as they will not match.

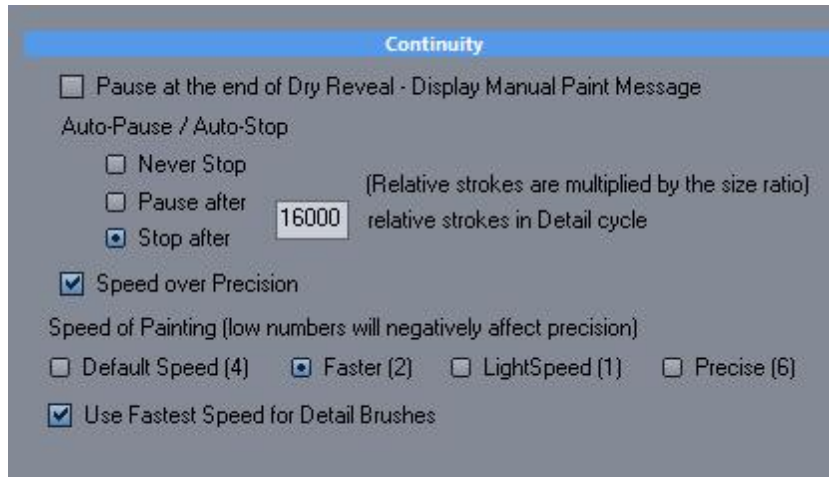
Adjust Input for Detail Cycle

This can apply an effect on the input image after the underpaint cycle. For example increasing brightness would result in brighter detail brushes being placed over the image.

10.8 Continuity

Continuity allows to pause or stop the painting after certain strokes in detail cycle and adjust the speed of painting.

Note the strokes are relative (based on the lowest "base" resolution). that means the actual number of strokes will be higher for each higher resolution.



Pause at the end of Dry Reveal

As soon as the dry reveal cycle is finished the painting will pause and you can manually refine it with brushes.

Never Stop - The painting will continue until you stop it.

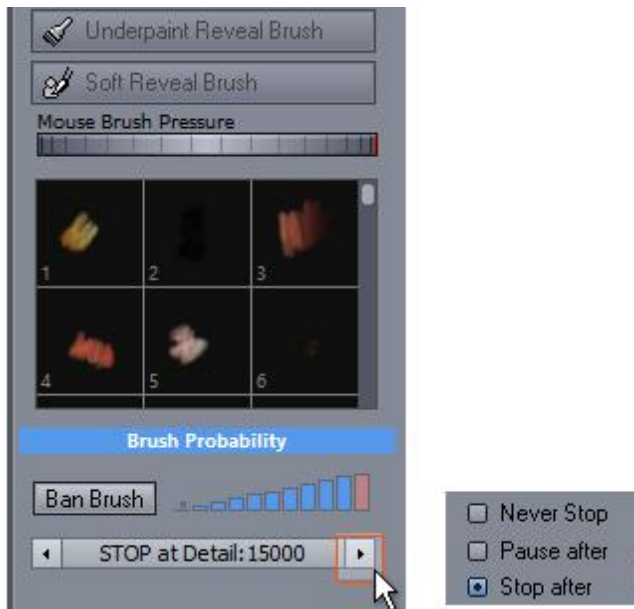
Pause After - The painting will pause at the set strokes. It could be then resumed.

Stop After - The painting will stop at the set strokes.

Please note that the stroke count is relative and it is multiplied by a size ratio (if you use larger Canvas Output size, the actual number of strokes will be larger than the set file by a resize coefficient)

During Painting this selector can be also changed in the Quick Palette (on the right side)

You can toggle between non-stop, pause and stop after during painting.



Speed of painting:

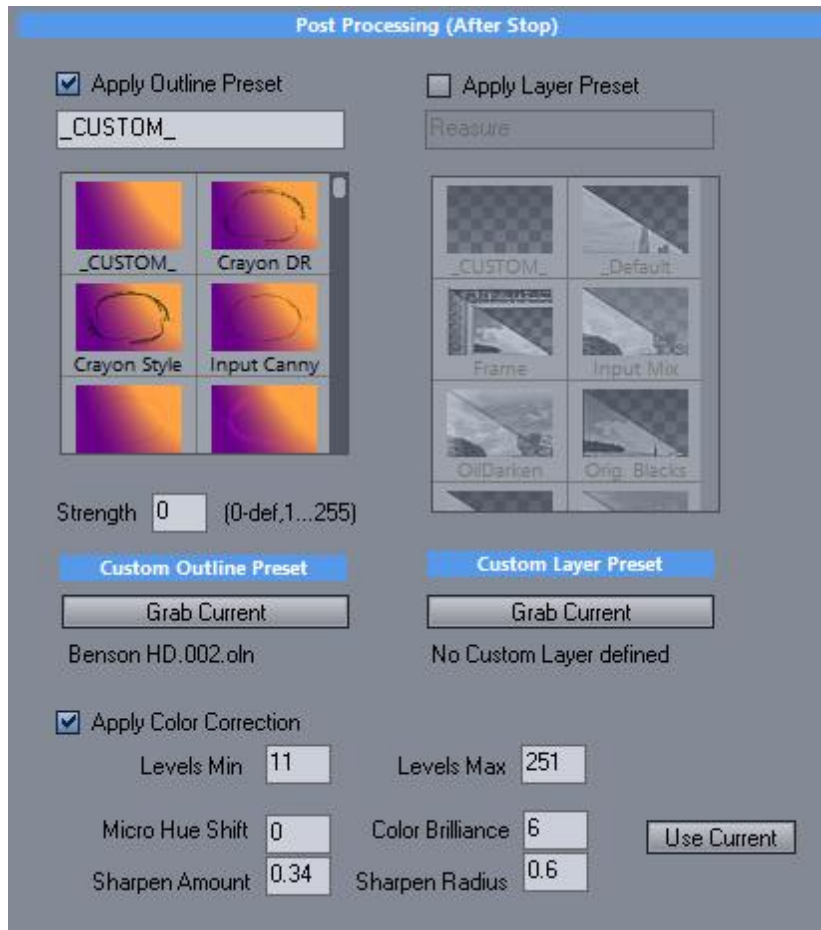
Faster but far less precise - Sloppy painting. This will paint brush strokes far more easily and also a lot faster. This is similar to the settings of Quality (Speed/Precision) in painter^[28] but the Precision will be set lower than even the lowest setting in the Quality slider.

In version 6 explicit speed settings were added that will override the Speed indicator. Default Speed is 4, Speed 1 will be the fastest.

Use fastest Speed for Detail Brushes will turn the speed to 1 during detail cycle.

10.9 Post Processing Flow

The post processing steps will be applied after the painting stops.



This is to automate a commonly used steps as described in the Adjusting Output^[88] section by applying existing presets. Those can be then removed or changed manually in the various Tabs.

Outline preset - Apply one of the outline^[93] preset from the preset library.

We can also override the preset strength (for example to make it stronger or lighter than the value set in the preset)

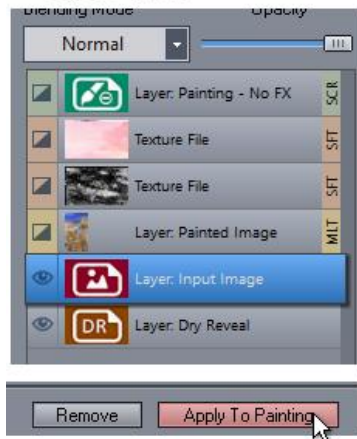
Layer Preset - Apply layer^[106] preset from the library.

Apply Color Correction - since there are no presets we can set the color correction^[104] directly. Use current will enter the currently set values.

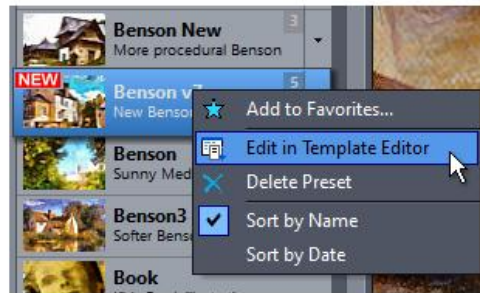
New in version 7

Layers and Outline can be saved into the template itself (previously the template could only recall existing layer and outline preset). When you use Grab Current - whatever is currently created in layers or outline will be saved for the painter template as _CUSTOM_ and will be applied after the painting finishes.

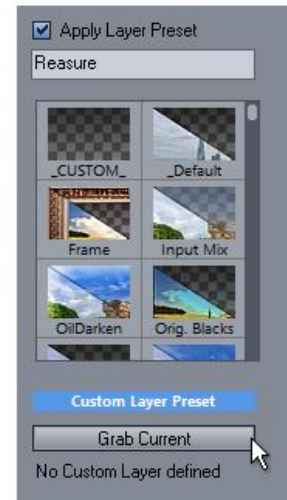
1. Finish Painting then Apply Layer Effects



2. Edit the Template



3. Grab the Layer Effect



10.10 Brush Value masking

Brush Value masking can add more details during underpaint/detail cycle. (added in V.5)

It is for example good for simulating watercolor paints where some lines and highlights will be masked with masking fluid.



The idea is similar to applying a masking fluid during watercolor painting that will preserve highlights. In some way it is similar to Exclusion mask^[145] applied to Underpaint cycle but with while Exclusion mask prevent from brush being painted, the value masking will let the brush paint, but it will exclude the specified mask from the brush itself.

Apply Value Masking for Detail Cycle as well

Value masking can be applied for Underpaint only or for Underpaint and Detail cycle. (please not Dry reveal will paint over the masked areas, so you need to use less Dry Reveal Strength)

Effect - Default (intensity)

This part can accept Reactor processing. By default if no Reactor is defined the input image intensity will be used as the mask source. However you can define much more elaborate masks by processing the input image in reactor. **Note:** the color doesn't play any role in this part. The masks are always B/W so the reactor effect can be either color or b/w.

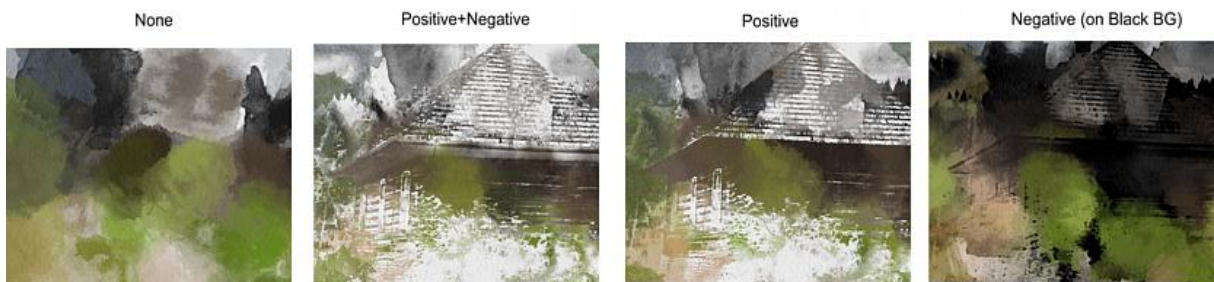
Apply mask to brush if

This determine what will be masked:

Positive+Negative: both strong dark and strong light areas will be masked for each brush

Positive: Light areas will be masked (such as watercolor on white paper where highlights are masked) - similar to preserving highlights.

Negative: Dark areas will be masked (for example painting on black canvas where we don't overpaint blacks but let the canvas be the "blacks". Hence it needs canvas to start with dark color.



Mask Cut-Off

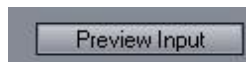
The determining factor of mask intensity that will be used as the mask.

10.11 Art Tone



Art Tone is a continuation of "Impressions" idea from previous versions. But this time they can be specified in the templates. This will paint the input image within certain palette. An obvious usage would be to load palette from the painting from which the template was originally created.

To be able to judge the settings a new Preview Input button was added that will simply apply all those settings on the input image in a separate floating window.



There are few options how the colors of the original will be matched to your input image. They all differ in the amount of forced colors and tone and would produce rather different results.



Keep Intensity - the input image retains its intensity otherwise also the intensity will be matched to the source painting (which may work for certain type)

Equalize - if intensity is also matched then we can apply equalize to avoid situations where the image would become too bright or too dark.

Insider tip: you can replace the thumbnail in the original artwork but keep the color data from previous image. (for example for copyright or personal reasons). Hold Ctrl+Shift while clicking on the Load Original Artwork button. You can also completely reset the Art Tone by removing the image data and the thumbnail by holding Alt and clicking on the Load Original Artwork button.

Color Stretch

This is a way to completely recolor image by rather unusual way. Instead of moving hue as with hue/sat/int settings we would stretch or compress the hue thus creating even gradients with different colors.



The Anchor point sets which color we want to keep as the pivot point (for example we can decide to keep skin colors and let other colors go wild. Transition makes sure there are no abrupt changes in hues and softens the hue jumps.

Apply After LeRoy Randomizer

Normally Color Stretch applies to the input image before LeRoy Randomizer. This checkbox will apply the Color Stretch after LeRoy. See the image preview on the actual effect.

10.12 LeRoy Randomizer

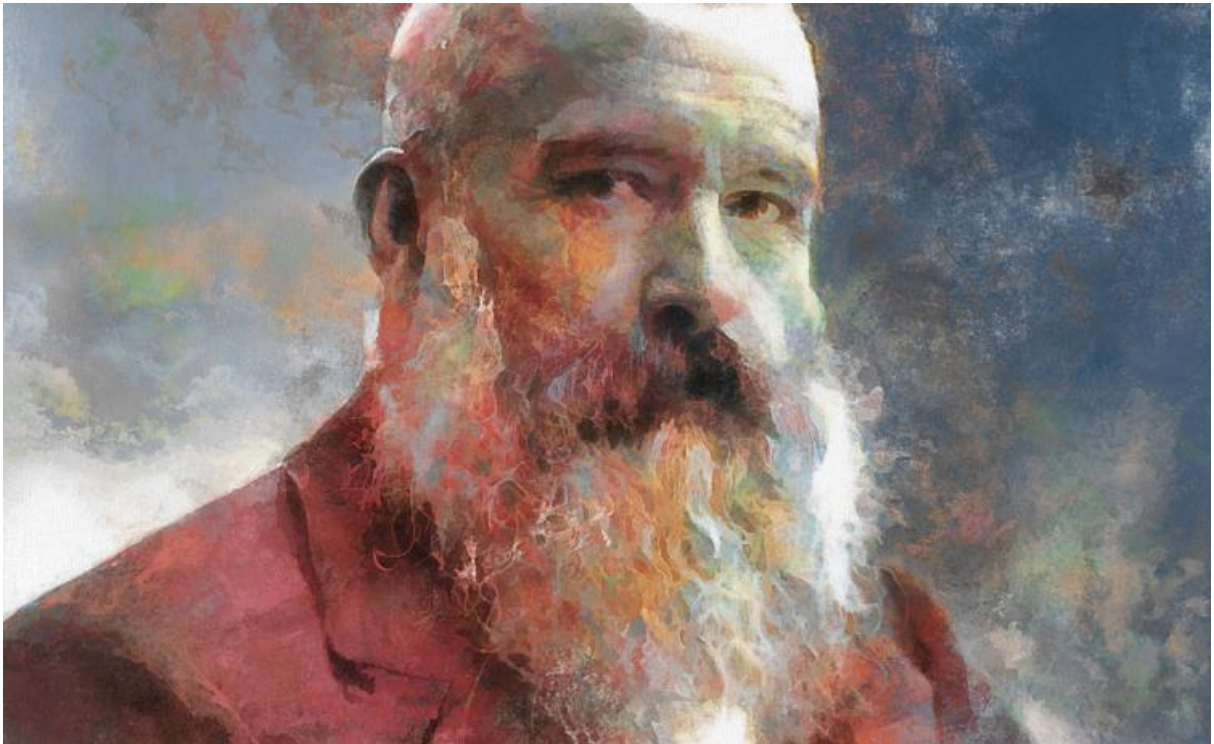
The LeRoy randomizer can load a preset from LeRoy Color Randomizer⁵⁵ (included plug-in) and apply it to the image before painting.



The Preview button can be also used with this setting to see the effect it has on the input image.

This setting simulates the random colors used in for example Leroy Neiman paintings. The goal is that it would randomly use colors from a painting palette but rearrange them such way that the image is still viewed correctly and the colors are non disturbing to the overall readability of the image.

It is up to you how strong you want the effect to be. It can be applied only partially and give an interesting tint and randomness to the colors.



Using LeRoy effect on a black and white photo (leRoy preset)

Settings:

Underp/Detail and Dry Reveal - this is the strength of LeRoy preset applied during Underpaint + Detail cycles and during Dry Reveal cycle. 255 is the maximum strength. It is linked to dry reveal settings in Dry Reveal Tab

- ☐ Dry Reveal of PREP (as in v.3.x)
- ☐ Dry Reveal Fine
- ☐ Reactor + Dry Reveal Fine
- ☐ Reactor of PREP
- ☒ Reactor Fine

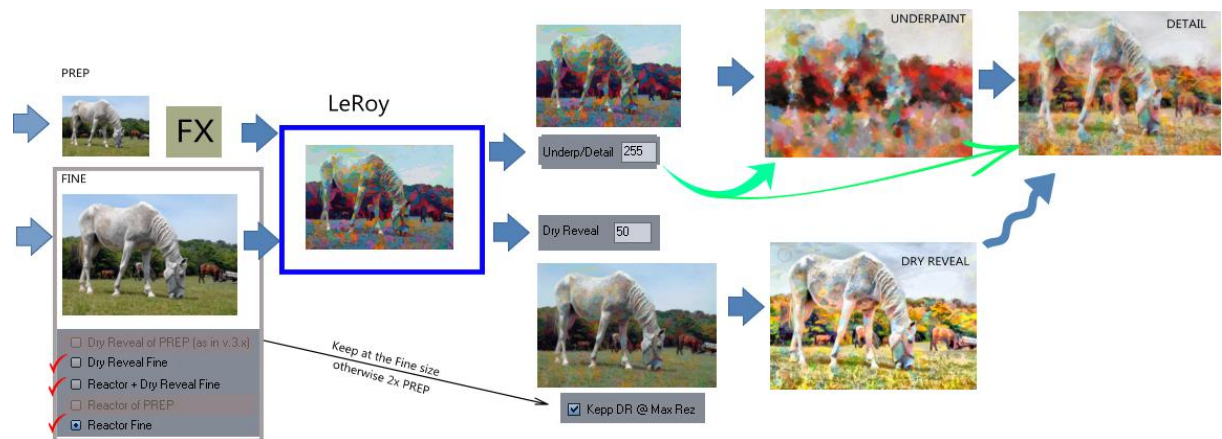
The number we put in Underp/Detail will be applied as a LeRoy strength in underpaint and detail cycle and the number in Dry Reveal will be applied to the image during Dry Reveal cycle. This assumes we have Fine image in the process and that is true only if Dry Reveal Fine, Reactor + Dry Reveal Fine or Reactor Fine is selected in the Dry Reveal Tab. In the other PREP settings the Dry Reveal is not in effect and Underp/Detail number apply to all cycles.

For example we let all brushes to go maximum LeRoy during Paint Cycles (255) but then during dry reveal we used 50 strength to calm down the image to more realistic colors. Compare it to full strength:



The Brush Strokes colors dictates the overall tone of the image while the dry reveal colors have large impact on how "LeRoy" the colors will be.

Keep DR @ Max Rez. For LeRoy to be effective, it has to reduce the resolution of the input image that goes in otherwise we will have millions of small color patches and it would not look right at all. That doesn't affect the normal painting with brushes as they use the input image as a guide. For Dry Reveal a fine map is created with higher resolution. Normally the LeRoy will process the Dry Reveal leg of the process as 2x of the PREP leg, but by setting Keep DR @Max Rez it will resize it back to the maximum input resolution and mix it with the input image.



If you put all the LeRoy, Art Tone and color Stretch to effect all at once you will probably create very unexpected results and not always in a good way.

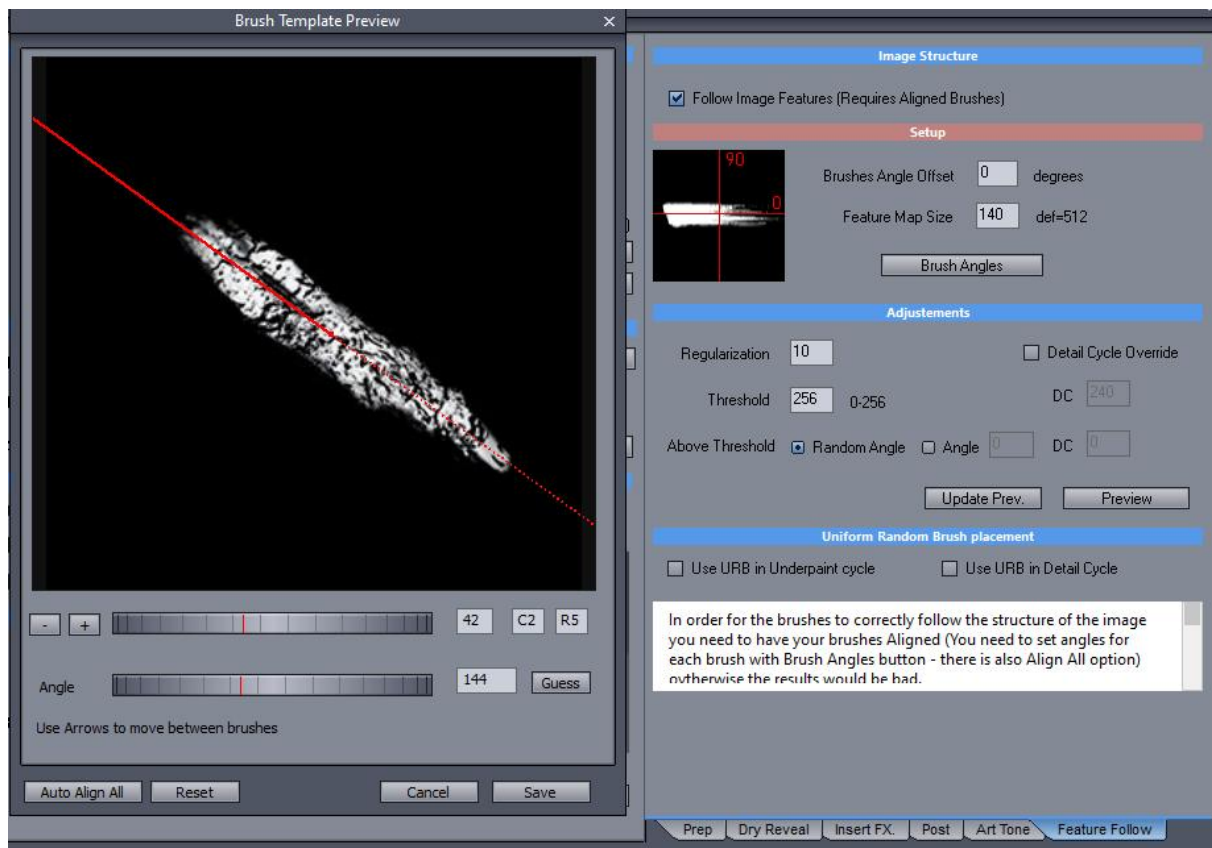
10.13 Feature Follow

Feature Follow makes brush-strokes follow the structure of the painting. This improves the overall "human" feel of the brush strokes.



Without Feature Follow (left) the brushes are often placed randomly in flat areas, while Feature Follow (right) simulates brush strokes as if guided by human hand.

For this the brush-stroke needs to be aligned (that is the angle of the brush stroke needs to be set up). This is done already for new v.7 presets, but older presets may not have aligned brushes yet.



How to set brush angles

Click the Brush Angles button.

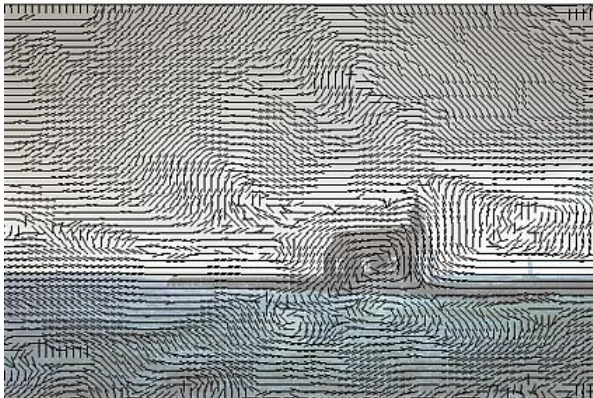
If the brushes are not yet aligned you can set their angle manually or automatically by clicking Auto Align All.

Once the brushes have set angles, you can use Follow Image Features.

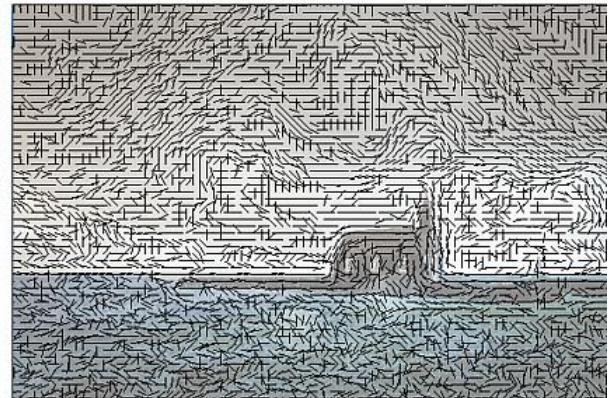
Brushes Angle Offset - this is zero (that is the angle is the same as set in the Brush Template Preview. If you change this to for example 90, then the brushes will be painted in right angle to their true angle.

Feature Map Size - this is the structure map size - smaller number will make the brushes follow the structure more loosely (think of Van Gogh paintings), higher number will try to align the brushes more precisely to the structure (but for busy structures, this may be perceived as almost random)

Feature Map Size 100



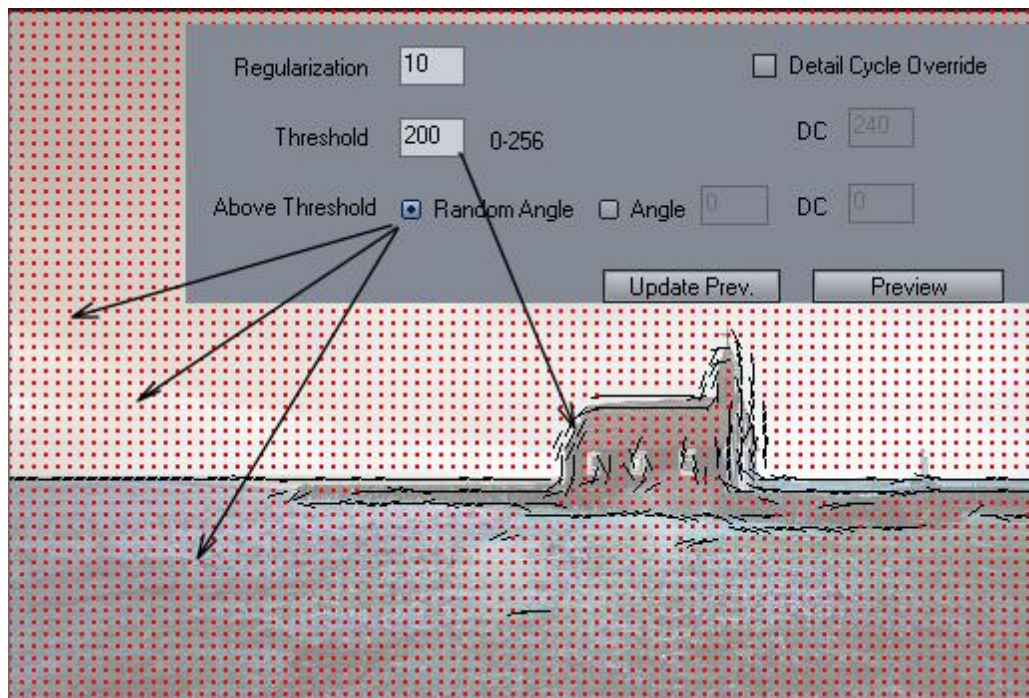
Feature Map Size 500



Difference between small and large feature map size.

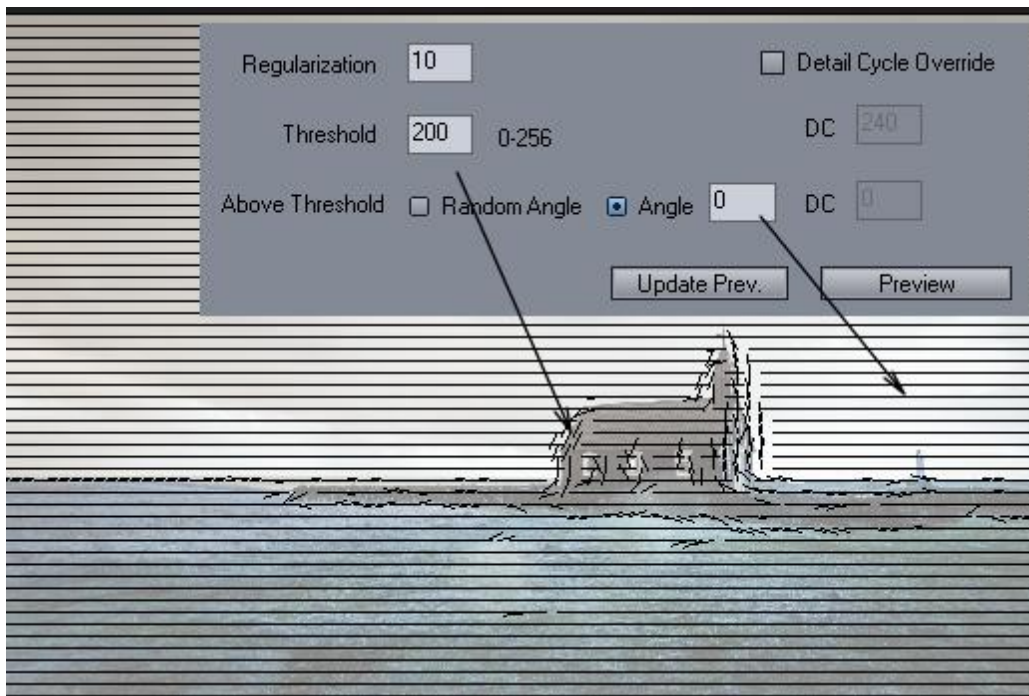
Regularization - this is a sort of blur on the features. Higher regularization will make the brushes follow the features more loosely. Combine this with the **Feature Map Size** to get the desired effect.

Threshold - determines when the brushes will align to the structure and when they will be either random or follow an exact angle. If you set 256 then brushes will align to all features, lower the number and brushes will align only to significant features. See the image (red dots indicate where the brush angles will be random)



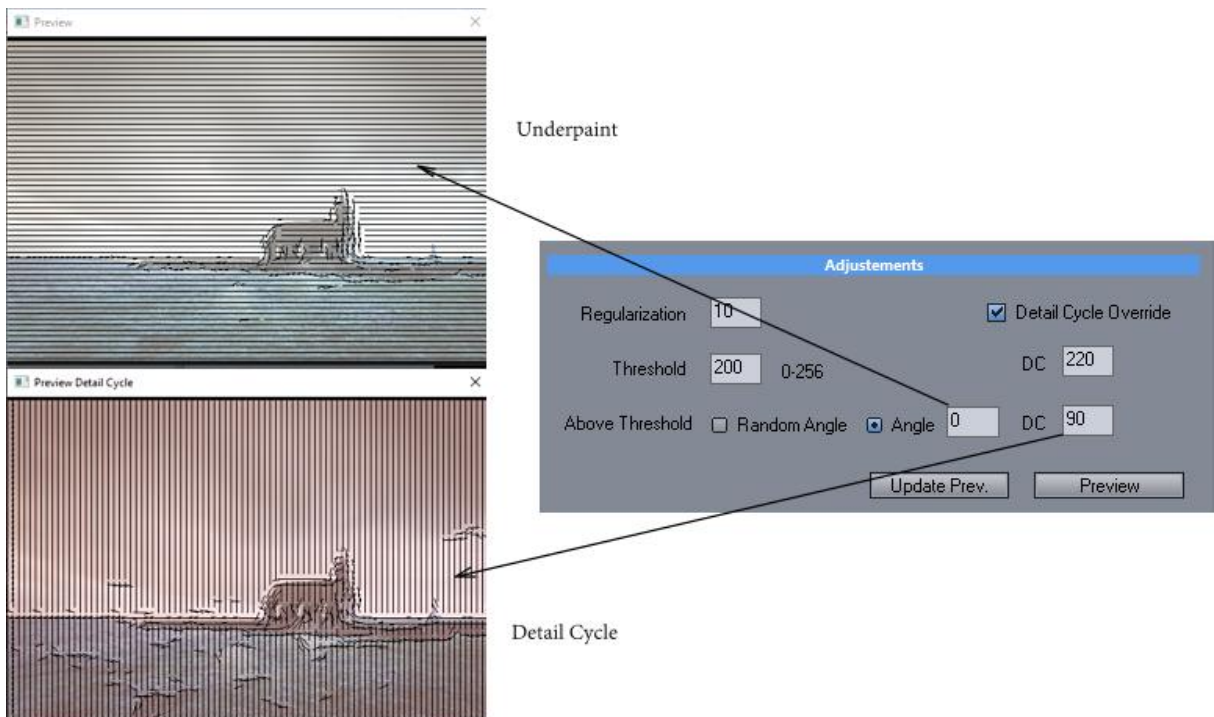
Threshold determines where brushes will be aligned and where random

Random Angle vs Angle - this determines the angle of the brushes above the threshold. It could be either Random or a specified angle.



Threshold determines where brushes will be aligned and where they will follow predefined angle

Detail Cycle Override - allows you to have different threshold and angle for underpaint and detail cycle. This can create an interesting effect



Uniform Brush Placement - By default DAP tries to place brushes where they would fit the most. However when you are using Feature Follow it is often beneficial to override this behavior and let the brushes be placed more uniformly - this could avoid clumping brushes in certain areas. In most cases at

least Use URB in Detail Cycles should be on if using Feature Follow.



Note: It is also recommended to use faster speed (1) when using Feature Follow - see Continuity^[163]

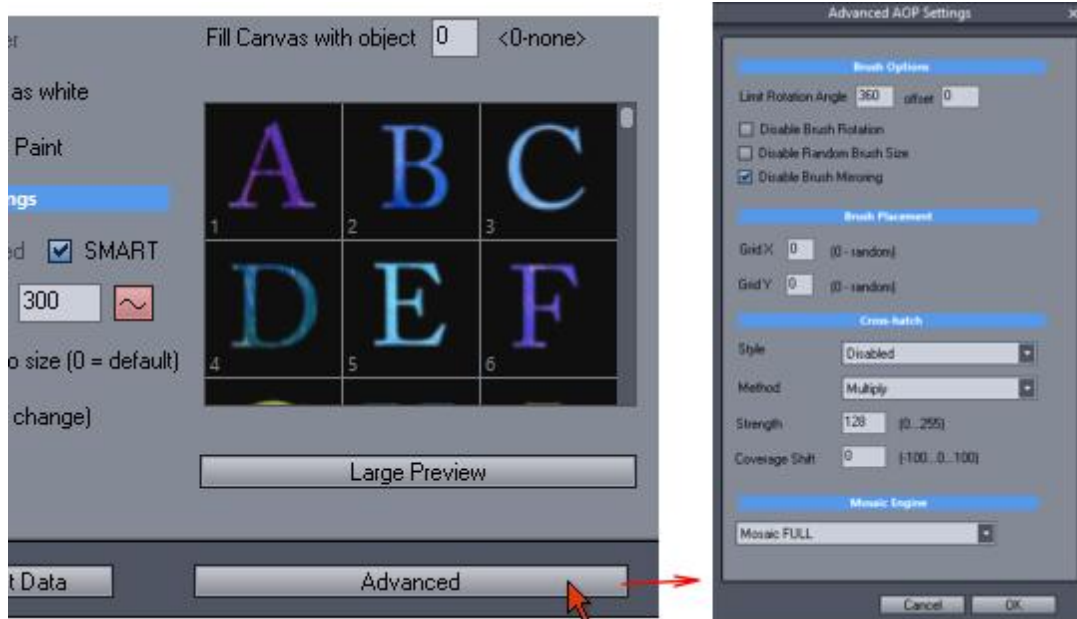
Feature Follow settings also affect Auto masks^[147].

Tip: You can use monitors^[201] to show the angles even without going into the preset editor.



10.14 Mosaic and Brush limits

Mosaic and brush limits are hidden under Advanced Settings in the Edit Template

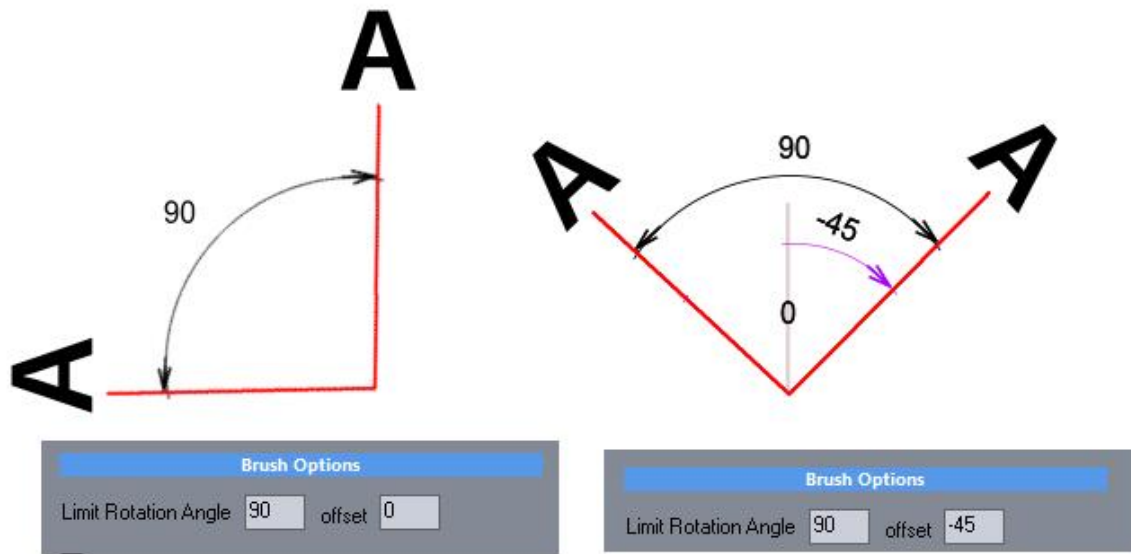


Brush Options



Limit Rotation Angle and offset

Limits the angle brush can rotate (selecting angle smaller than 360 will disable Feature Follow¹⁷³)
See the illustration what the Angle and offset represents.



Example: If we want the brush to rotate in 45 to -45 angle, we set the Limit Rotation Angle 90 and offset -45

Disable Brush Rotation

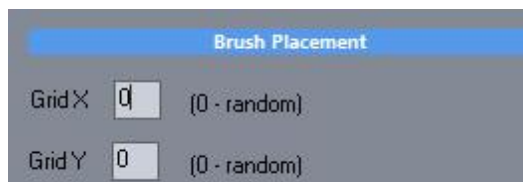
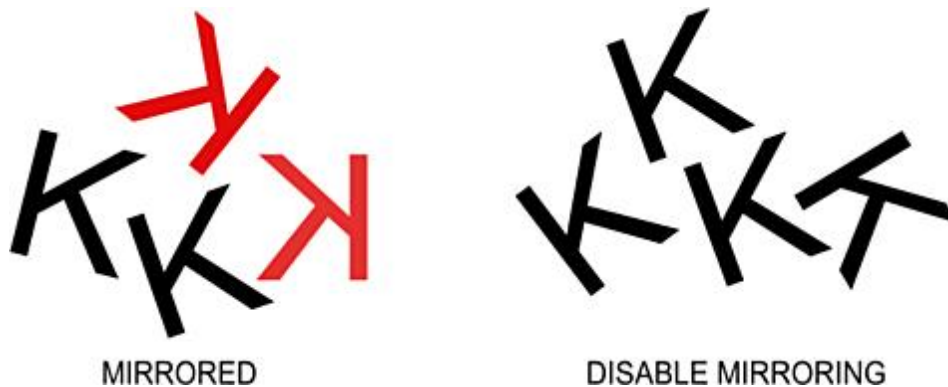
Fully disabled Brush Rotation - the brushes will be always drawn in angle 0 degrees.

Disable Random Brush Size

Brush will not change the size from (min to max) but it will paint with the brush at max size.

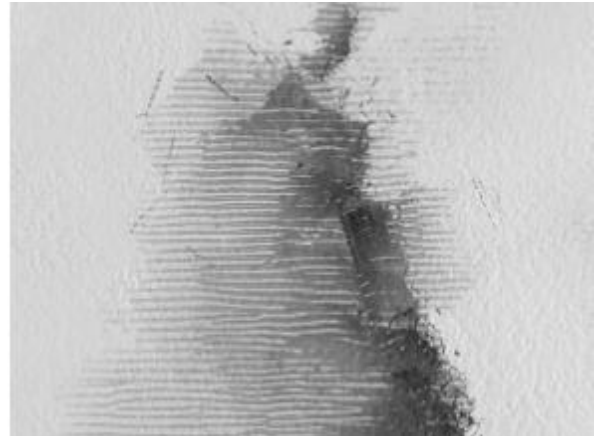
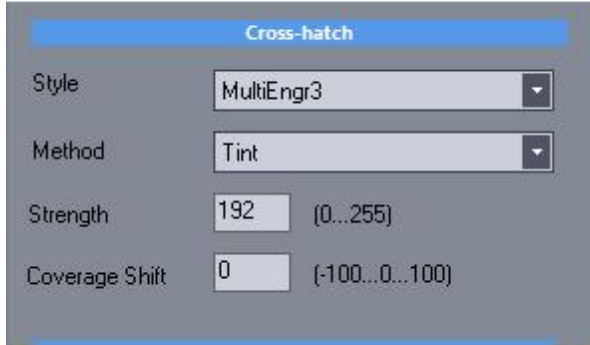
Disable Brush Mirroring

Brushes will not be mirrored.(Normally they use mirroring)



Brush in a grid - setting number larger than 0 will place the brushes in a grid - the number represents the number of columns and rows

Cross Hatch (legacy)

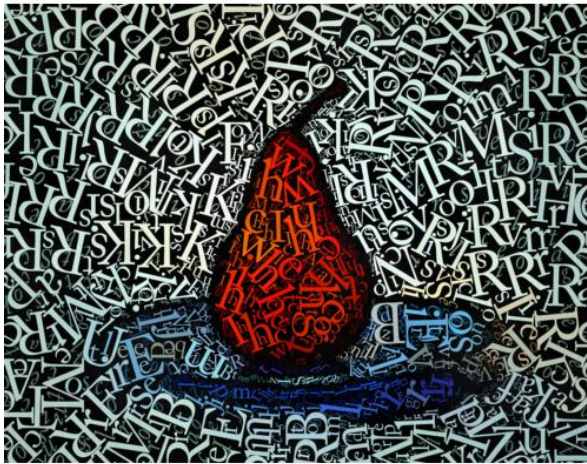


This will add cross hatching to the brush. Cross-hatch limits the overall output quality. There are about 2 old presets that use this setting - see Woodtech and Book presets, but that would be probably it - hence it is legacy option.

Mosaic Engine

Mosaic engine will paint mosaic - the brushes will not overlap. You can combine the mosaic engine with either Feature Follow or Limit Rotation Angle and offset.

Full 360 & Feature Follow

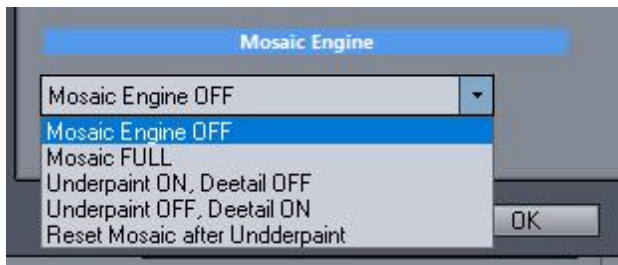


Limit 90 degrees with -45 offset



Limiting the rotation angle will make the letters in the mosaic all more or less standing straight (readable - not upside down)

There are few options (mostly for future):



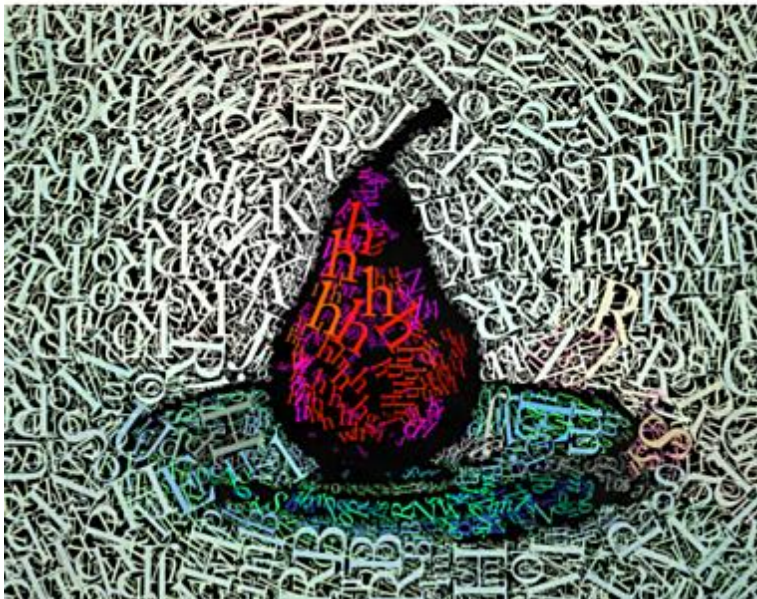
Mosaic FULL - both underpaint and detail brushes will use mosaic engine. This is probably what you want if you want mosaic.

Underpaint ON, Detail OFF or Underpaint OFF, Detail ON - either will do mosaic, the other cycle will be normal painting

Reset Mosaic after Underpaint - the Mosaic will forget the placement after Underpaint cycle and will start placing detail into a new mosaic - (sort of on top of the old mosaic)

These options are probably interesting if you also employ some sort of detail masking.

Reset Mosaic after Underpaint



10.15 Effect Flow

In the previous topics we described many effects that can be applied during preparation cycle. This is a birds eye view of them and how they are chained together. Yes, there is a lot of steps!

These are the effects found in the Prep tab and Advanced Tab. Of course not all effects needs to be applied at the same time.

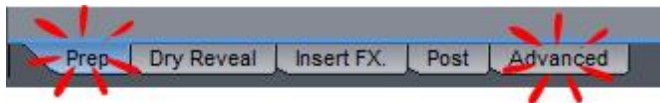
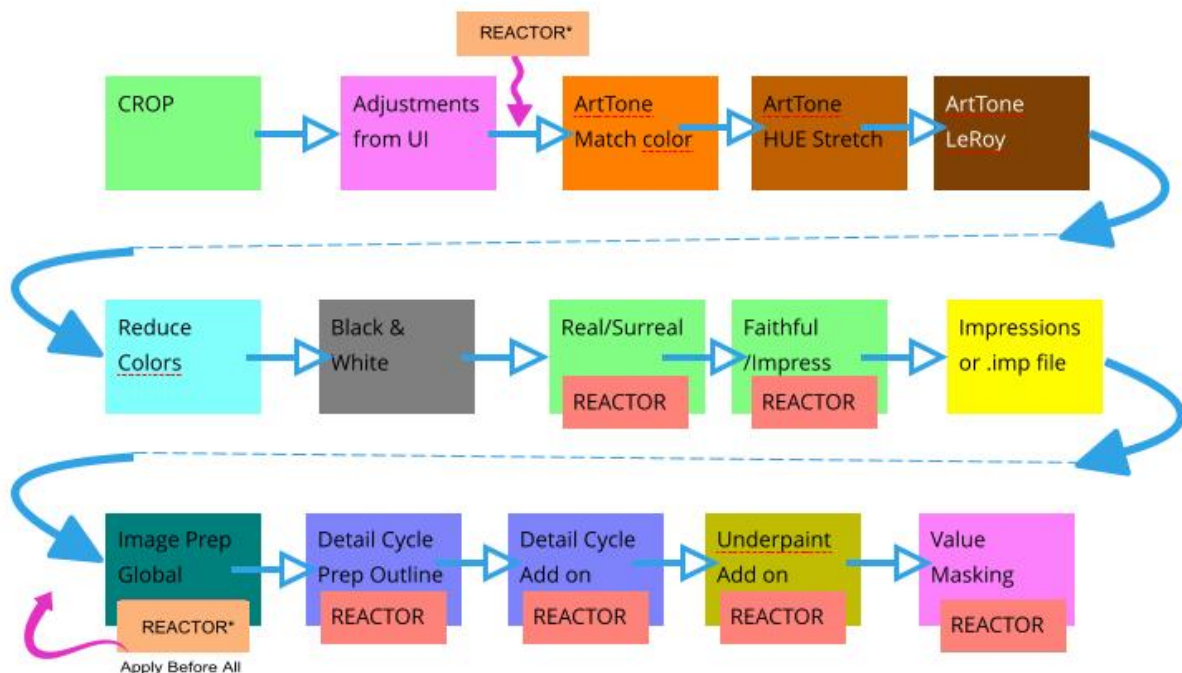


Image Preparation chart



A **reactor** label means the effect can have a reactor based effect. Reactor effect in Image Prep Global can be bumped to the top with Apply Before All Effects checkbox.

10.16 Creating Icons and help

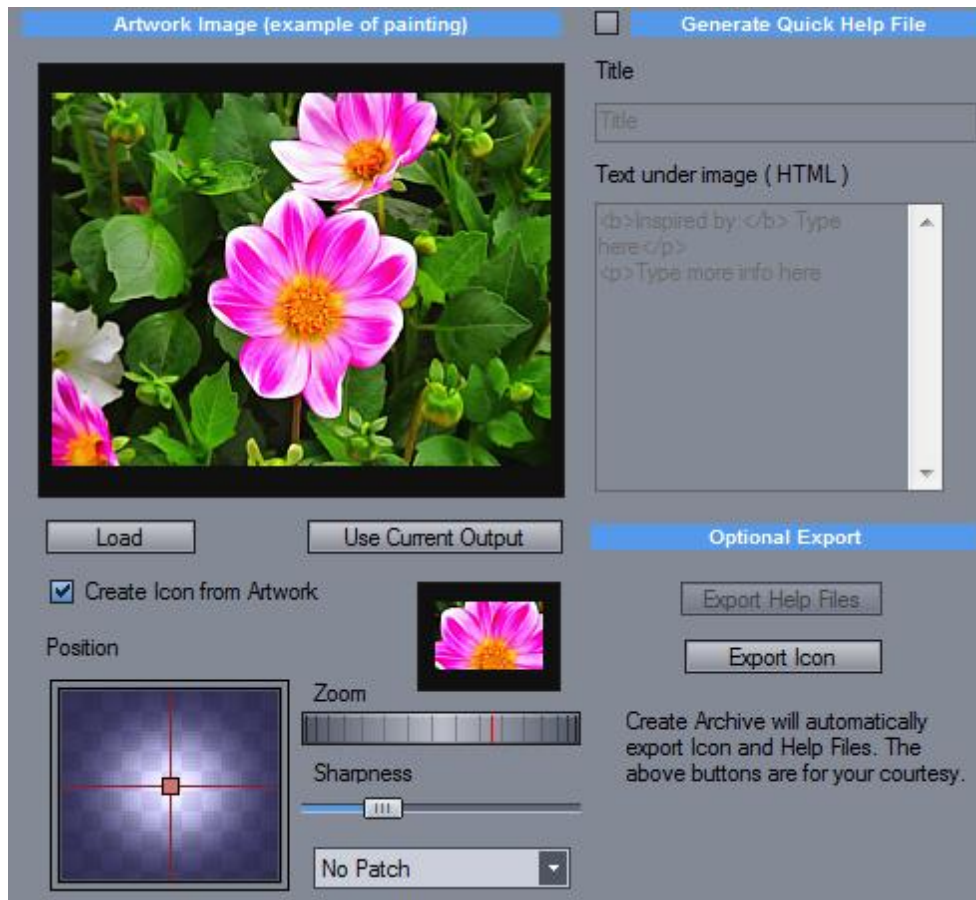
Tools - Archive Template

You can create your own custom icons for your own presets with the Archive template tool.

In this case you may ignore the left part (load AOP etc..) and simply use the right part to create icon and/or small help file.

1. Paint image
2. Open Archive template in menu tools

3. Click on Use Current Output to load the currently painted image as an Artwork image. Alternatively you may load any other image you like or image previously painted and saved.
4. Check Create Icon from Artwork
5. Use sliders for zoom and position to find a good crop as an icon
6. save the icon using Export icon. You have to save it with the same name as the template (which will be offered as default)



Quick Help file

This is a short help that appears on right panel when you select a template from the presets list. It is basically a html file with the same name as the template and it resides in Help folder. This tool can create such file along with a larger preview of the Artwork.

1. Paint the image
2. Open Archive template in menu tools
3. Click on Use Current Output to load the currently painted image as an Artwork image. Alternatively you may load any other image you like or image previously painted and saved.
4. Click on checkbox near the Generate Quick Help file label to enable it
5. Put a meaningful title (which is usually the name of the preset)
6. Put a text, Some html tags are ok, such as
7. Use Export Help Files

Note: the text under image (html) will be entered in between automatically generated <p> and </p> tags to create a paragraph therefore the example text has seemingly unpaired tags but consider this (the red tags are added automatically):

<p>

Inspired by: Type here</p>

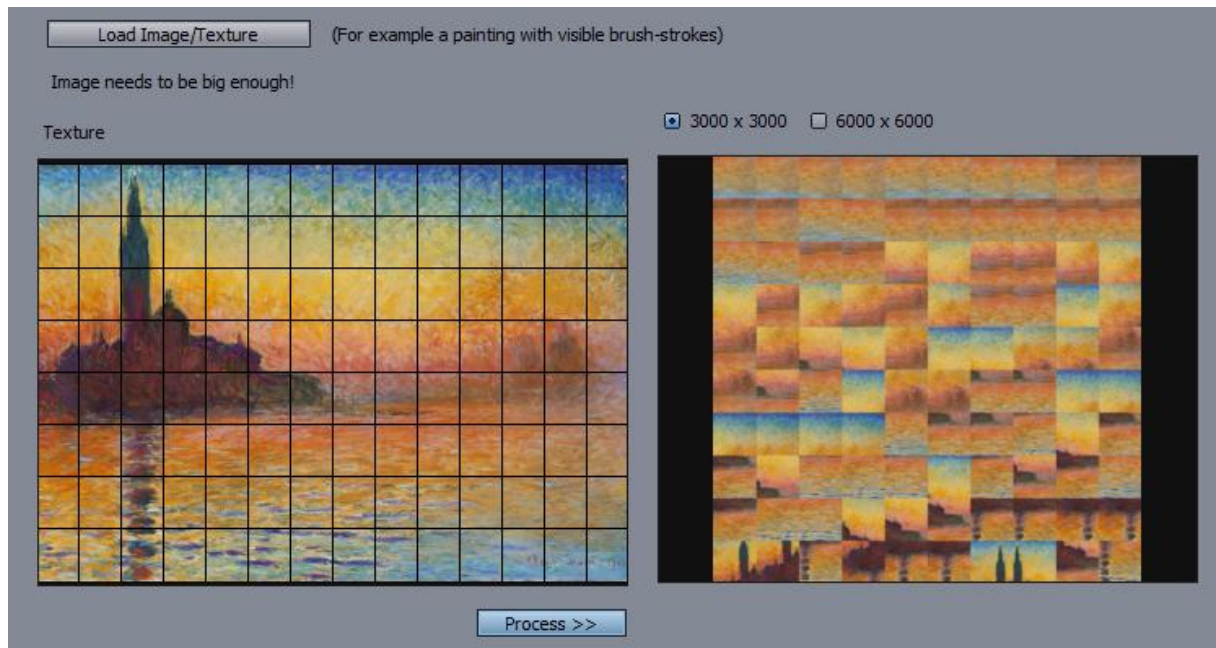
<p>Type more info here

</p>

10.17 Template helper - Color

Menu Tools- Template (Color) helper

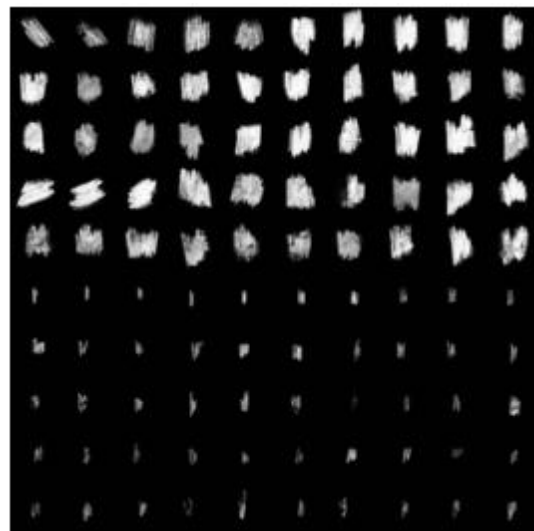
Tool for creating Color Maps for making new preset.



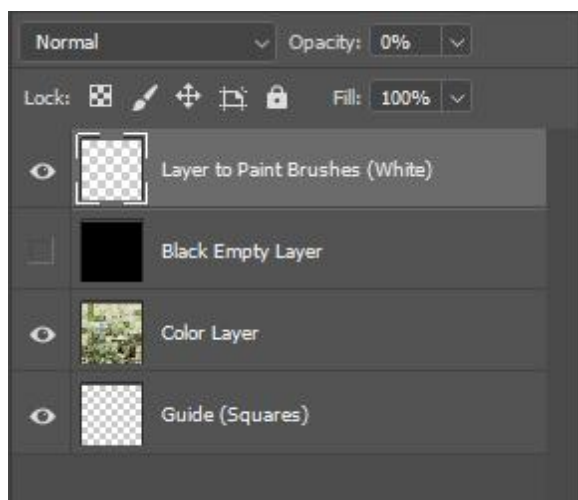
This will prepare the Color part of the template brushes from an image (presumably a painting) by quickly filling all 100 positions with a part of the painting sorted from less complex to more complex.

Process >> will distribute the image into the 100 positions of the template. Then you can save it as either Color Map JPG or Photoshop project for further editing.

If you save it as a PSD, you can then use Photoshop to add Brush strokes (white brush stroke on black background) then save both as separate files. Please see Template Editor Basics [\[130\]](#)



The PSD will have a few layers that you can use to create the Alpha image in Photoshop. You can paint with White brush on the top layer, then before exporting make the Black Empty Layer visible.



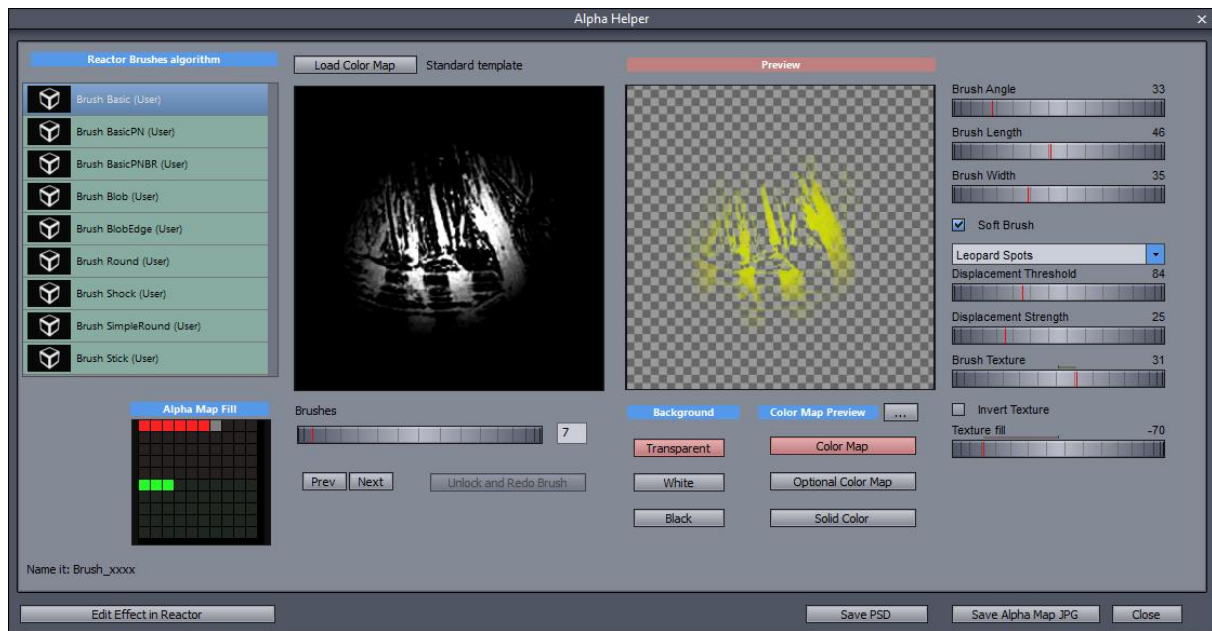
Of course, this is just one way to do it...

10.18 Template helper - Alpha

Menu Tools- Template (Alpha) helper

This helper let's you create the Alpha part of the DAP template.

The first thing you need to do is to Load Color Map (for example as created in the previous step¹⁸⁵)



Please see Template Editor Basics¹³⁰ for explanation about the Maps.

It is important to realize, that this is a time saving tool or a step for further editing not a final solution. (The templates you see in presets were not created using this tool - but rather manually)

The idea is that after loading Color Map (see Template helper Color¹⁸⁵) we can use some nifty Reactor processes to quickly create the brush shapes from the Color map texture combining it with an arbitrary brush shape.

Reactor Brushes algorithm

This is a collection of Reactor made "brush" algorithms. You can use any of them at any time - think of them as your brush selection.

Alpha Map Fill

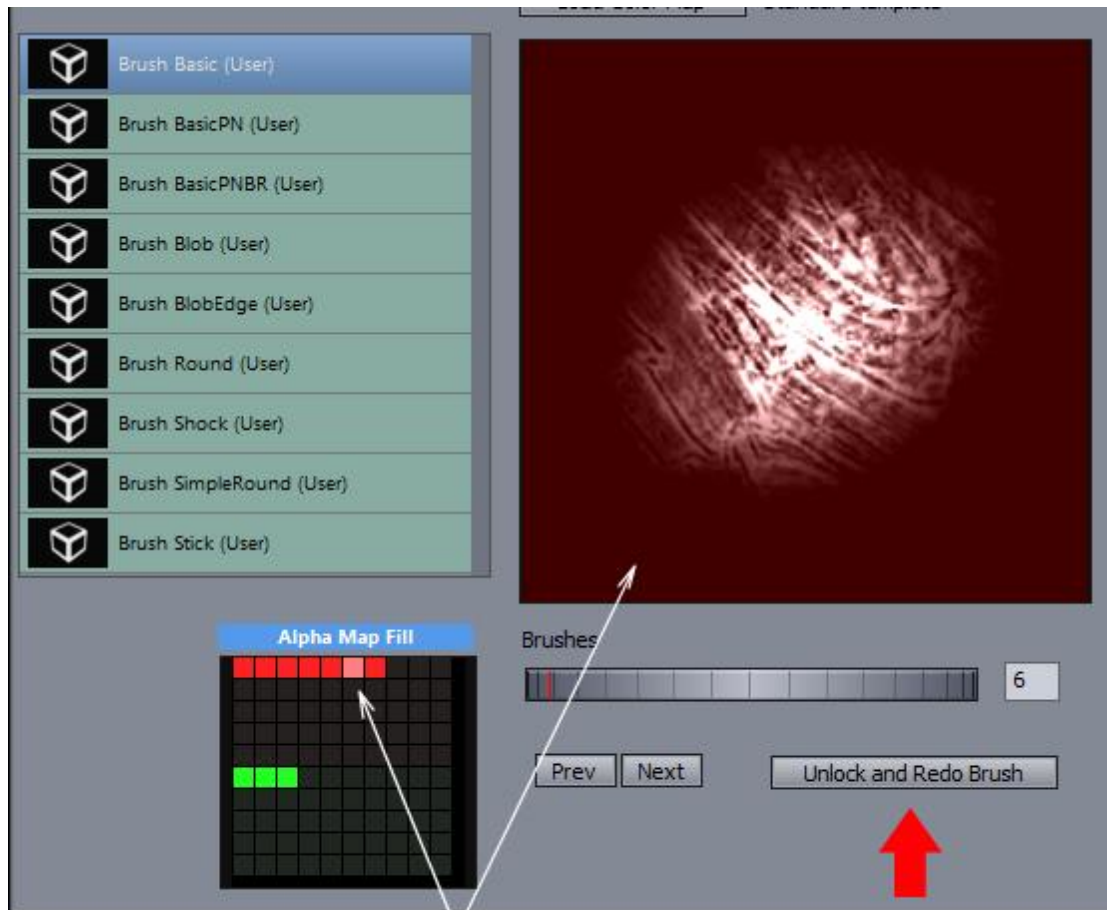
A display that shows currently edited brush and how many brushes are filled in the 10x10 matrix. The moment you move into next position, the previously edited brush will be saved into the Alpha map and the square will turn bright color (red or green) Once the brush is created it will became non-editable. (you can redo it with Unlock and Redo Brush button)

Brushes slider, Prev, Next

This is to move within the matrix of 10x10 brushes.

Unlock and Redo Brush

Once you select a new position in the matrix (moving the slider or using Prev/Next) the brush is added to the Alpha Map (and the appropriate box turns red or green). The brush editing is now locked for that brush. If you want to redo the brush, you can press Unlock and Redo Brush.

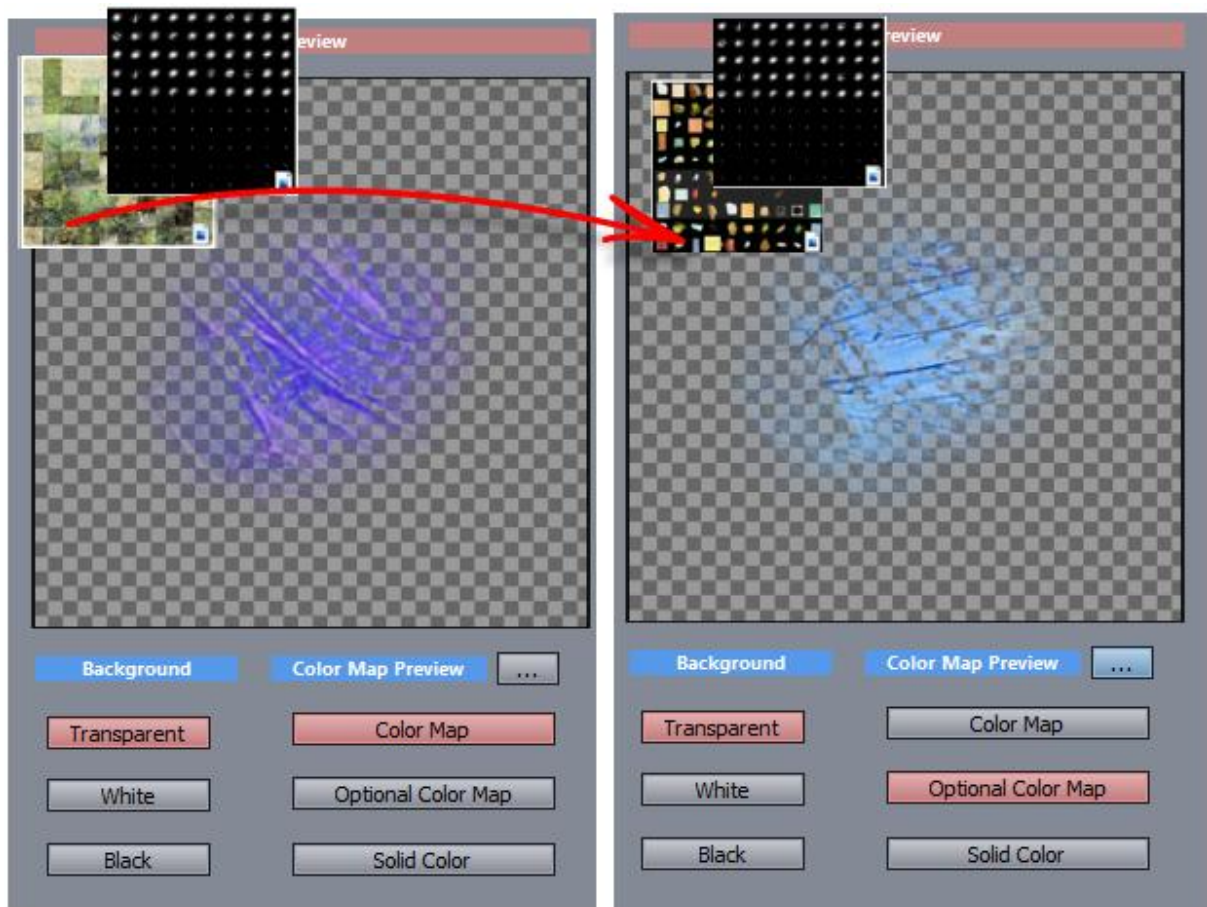


Brush is locked

Preview and Optional Color Map

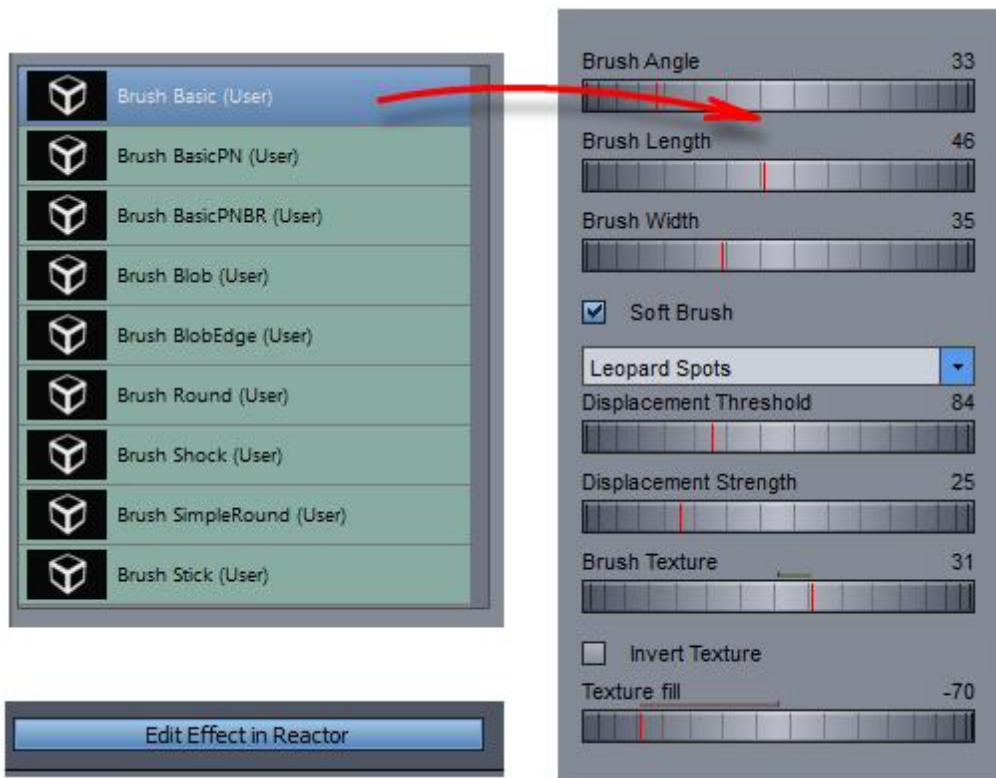
The brush can be previewed over different background.(It is just for you to see it better)

The color (and texture) of the brush can be either taken from the loaded Color Map or you can load a secondary optional Color Map that can be a completely different than the one loaded at the beginning. Again, this is for your previewing and it will not change anything for the Alpha map itself.



Reactor parameters

Each Reactor brush can have different parameters as they are dynamically created from the reactor VBOX file. To edit the Brush file, you can click on Edit Effect in Reactor (you need to have Photo Reactor installed)



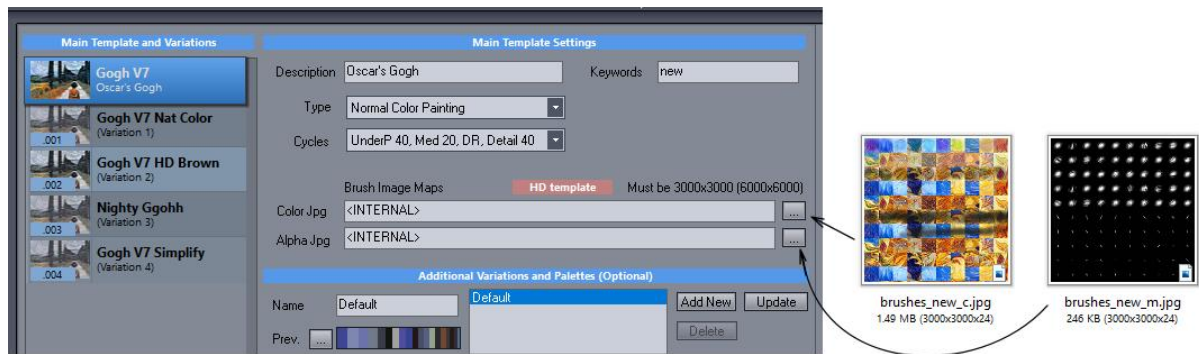
If you create a new reactor brush in Photo Reactor you need to save it with a name that starts with Brush...so the list of reactor files can find it within all the other VBOX files.

At the end (presumably after you created all 100 brushes, you can save the JPG alpha map or create Photoshop project.

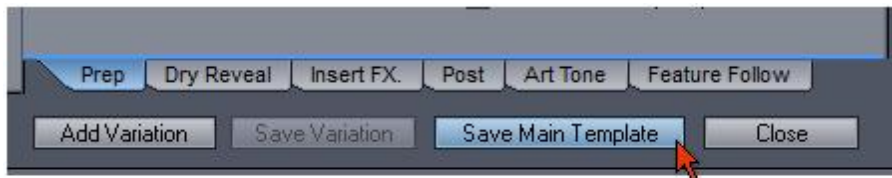


How to quickly test your new brushes

Once you have the two JPG maps - color¹⁸⁵ and alpha you can just quickly edit any template that looks similar what you are trying to do and replace the Brush Image Maps with the new files.



You need to save as a new template with Save main Template and pick a new name. (You can't save as Variation you need to create a new template)
For example "My test template"

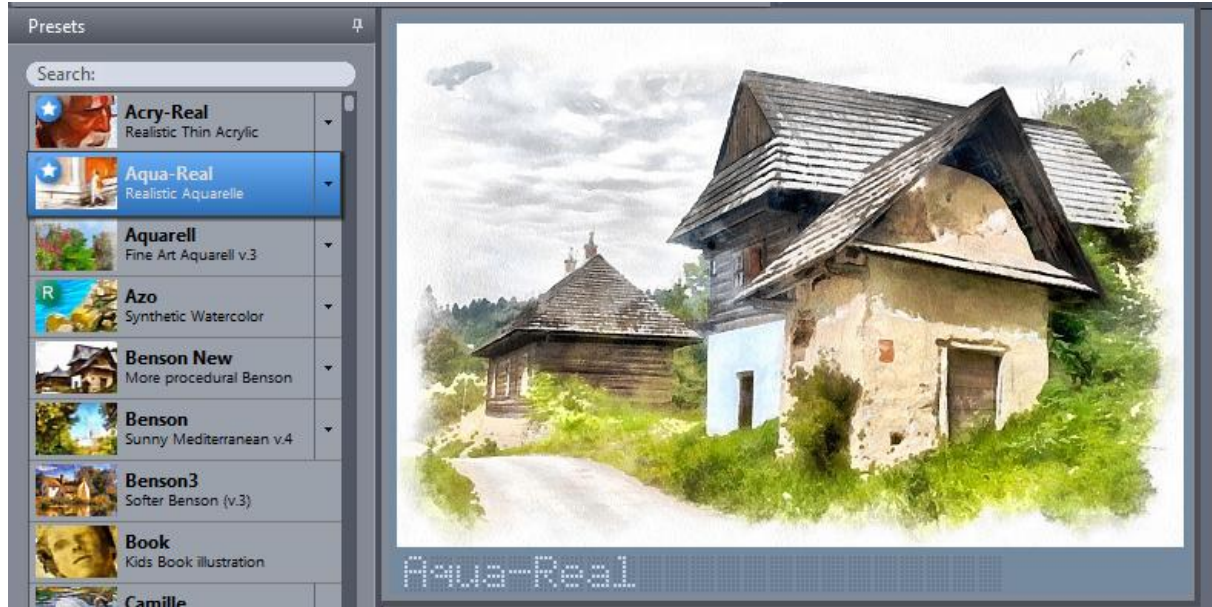


Now paint something. Don't expect the brushes to be immediately right, so it is a good idea to keep the files open in Photoshop to refine them. Some brushes may look a bit weird or too strong. You can just repeat the last step with editing the "My test template" and replacing Brush Image Maps again. You can simply overwrite the My test template - you don't need to create each time a new one.

And remember, this is just one way how to do it.


10.19 Quick Preview

As you hover over the template name a Quick Preview will be shown briefly. Those are pre-rendered sample files to give you better idea.



Quick preview will be generated automatically during painting process if none exist for the current template/variation. The stock presets come with pre-rendered previews.

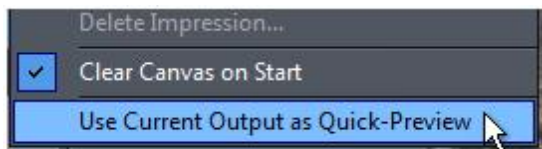
Note: The quick preview may not necessary correspond to the thumbnail image or may vary between variations. Sometimes a different file was used to showcase the variation or preset character.

There is also settings in the Tools-Options  that will update and overwrite existing preview every time you paint new image. (Always Update Quick-preview...). this way you can see the last image you painted with particular template. The choice is yours if to keep one constant set of previews or have them dynamic.

Custom Quick preview

In case you want to change the quick preview after you paint your image you can use:

Menu Painter - **Use current output as Quick Preview**



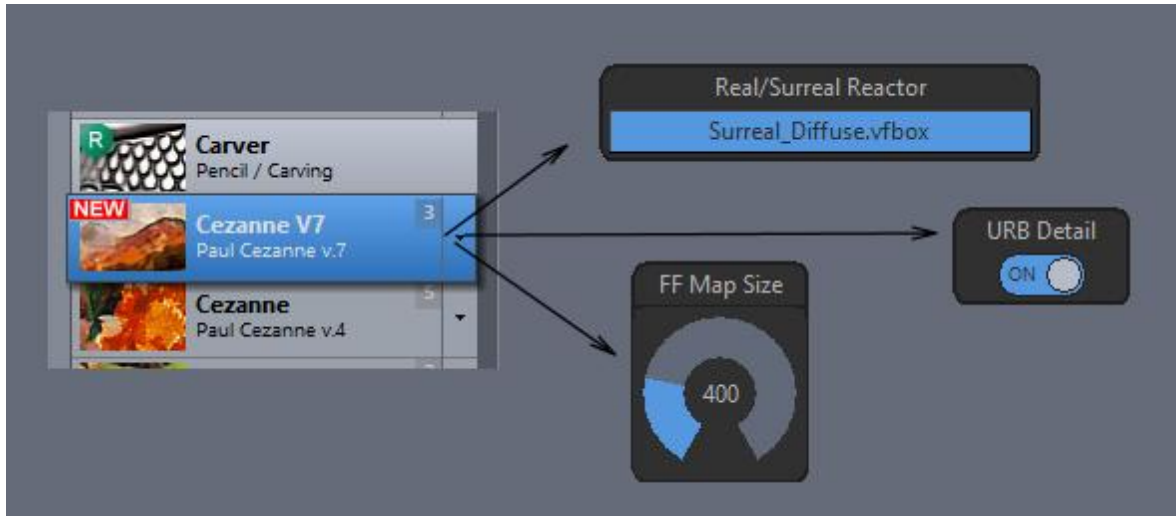
This will use the **currently painted** image and create a preview for the **currently selected** template. **Important:** Make sure the currently selected template/variations is the one that was used to paint the active output. The tool doesn't necessary check for this so you can easily add wrong preview to wrong template if you are not careful.

The preview jpg files reside in My Documents/DAP/Preview

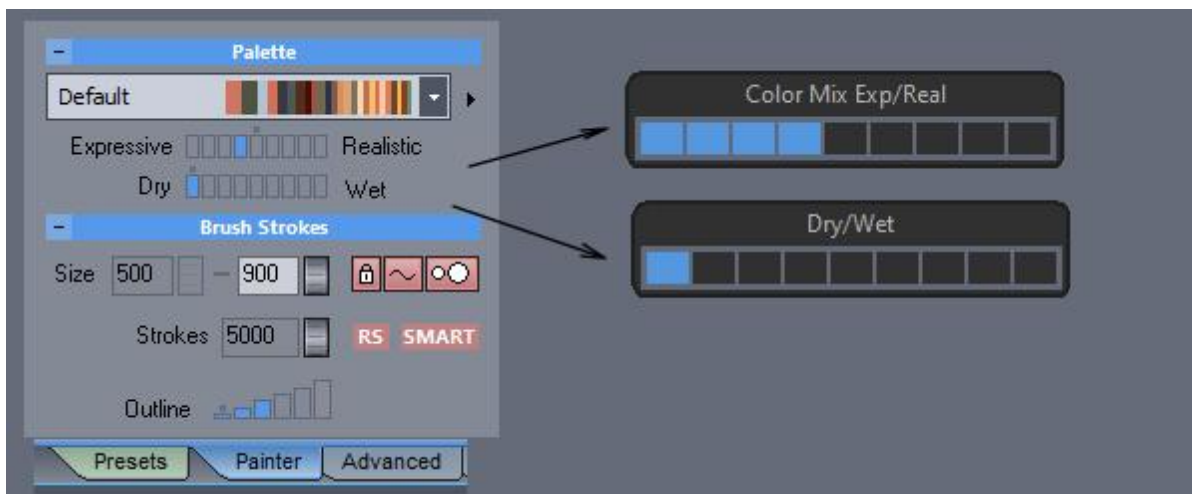
Deleting files there will return every preview to the factory settings.

10.20 Panel

Panel allows you to temporarily change settings inside a preset without making changes to the preset itself.

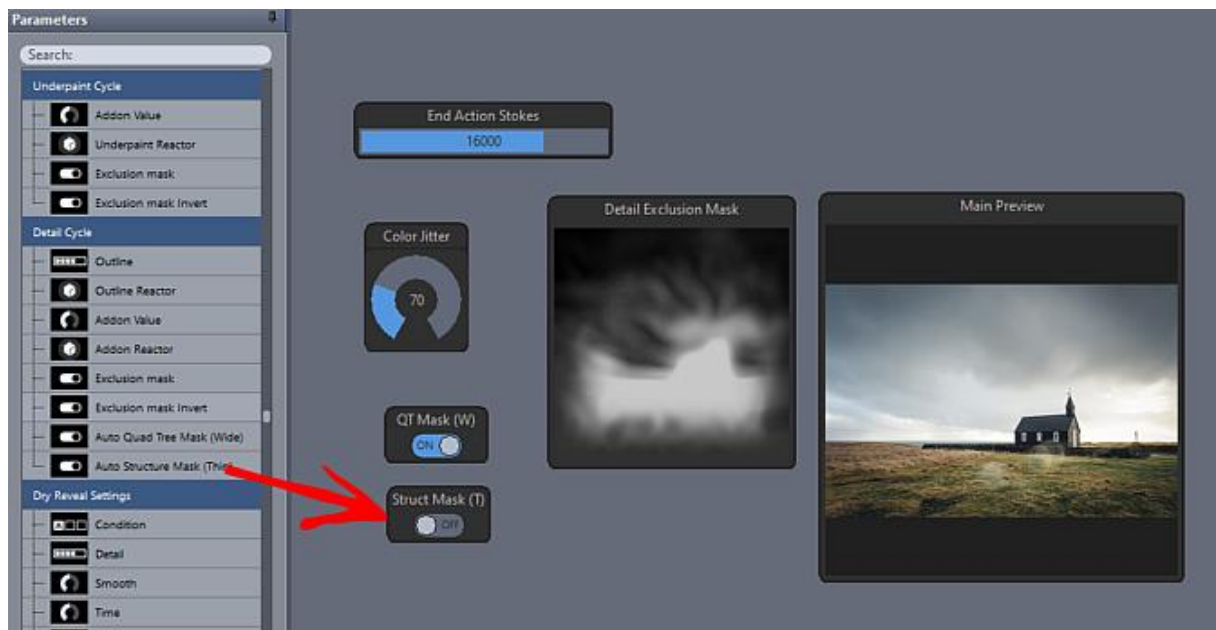


Think of the Panel as sliders and knobs that are wired to the parameters hidden inside the preset. If you select a preset all these knobs will mirror the values from the preset, but now you can directly change them without going into Template Editor. As you may already know, some preset data already have a slider in the Painter tab. In this case both values will be in sync.



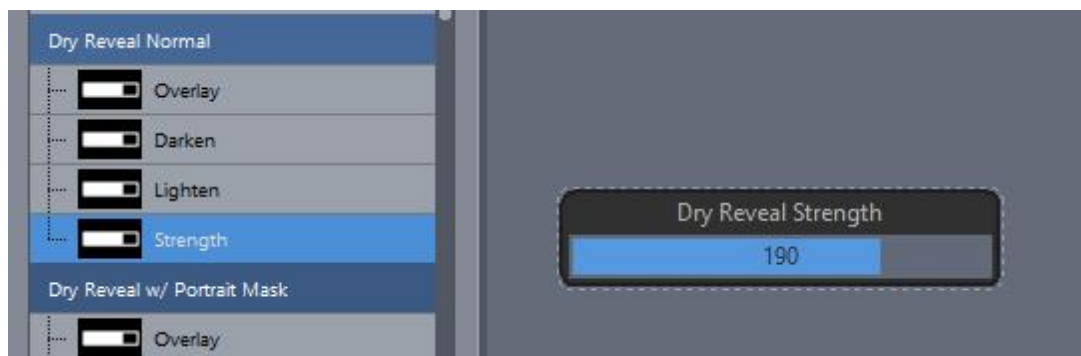
Panels can be created very complex or very simple, depending on how many parameters you wish to change.

Some presets will already have panels set, others may be empty. To add a slider to the Panel space - simply drag and drop it from the list.



Example: We would like to be able to change **Dry Reveal Strength** before painting

We need to drag and drop the Strength slider from the Dry Reveal group to the Panel space.

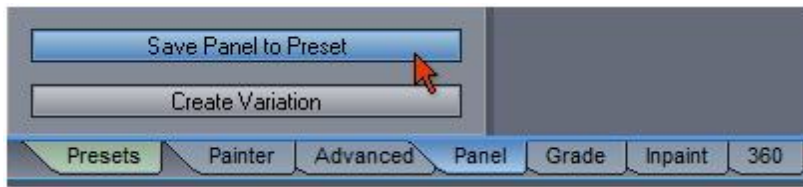


Now until we select any other preset, we can move this slider before Starting the painting and the value in the preset will change.

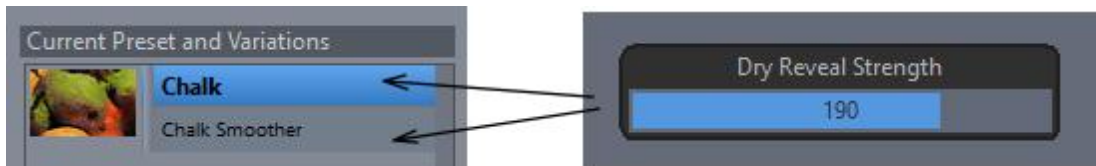
Saving panels

Note: Panels are temporary if not saved - once you select any other preset, the panel will be deleted or replaced with a new panel from the newly selected preset.

To save panel for the preset use **Save Panel to Preset** button:



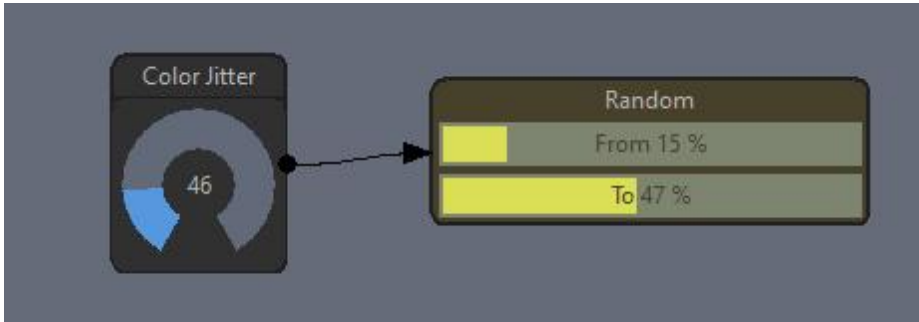
The Panel will be saved for the preset and **all the variations**. (All variations will share the same panel)



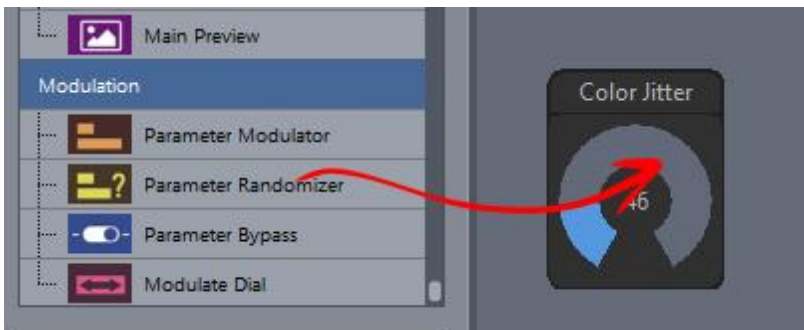
10.21 Panel - Random/Bypass

Panel can be used to randomize some values before painting. (See preset Guerbois for example)

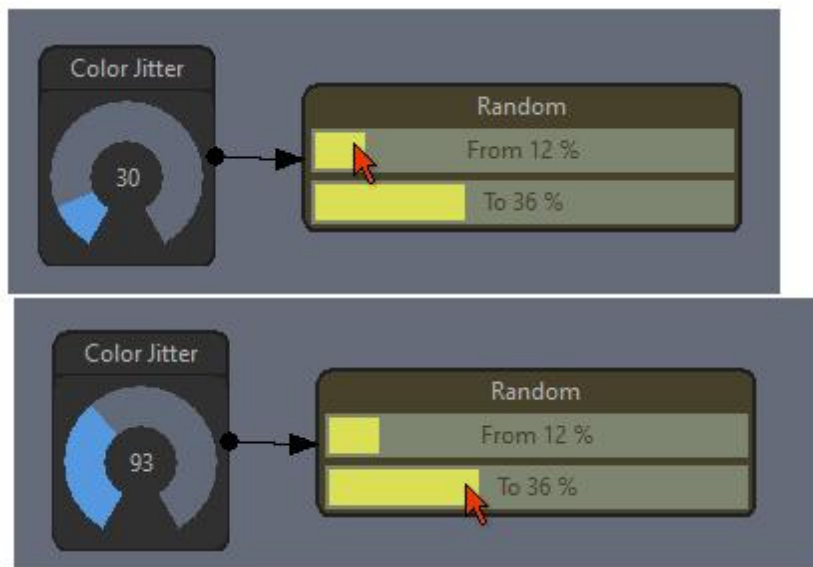
Example: Each time we start painting we would like to randomize the amount of color jitter within certain range



To create randomized values, first add the parameter to the Panel you want to randomize (Color Jitter), then scroll down in the panel items to Modulation Group and drag Parameter Randomizer OVER the Color Jitter knob on the Panel canvas. This will connect the Randomizer to the Color Jitter parameter.

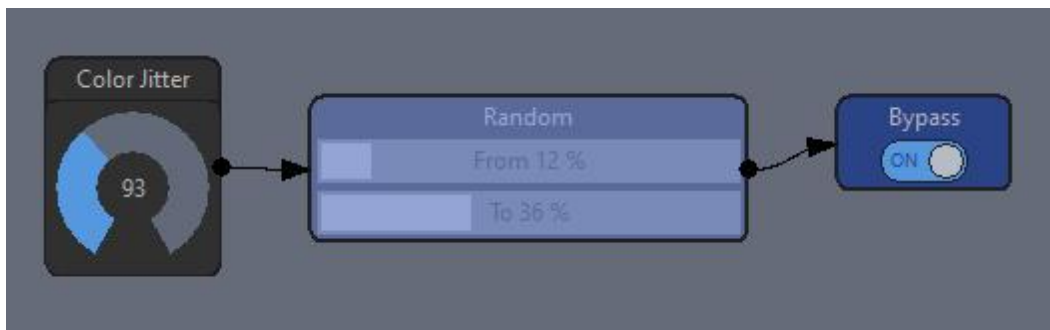


The Randomizer allows you to set the lower and upper bounds of the parameter. Each time you start the painting this value would be randomized in the set range.

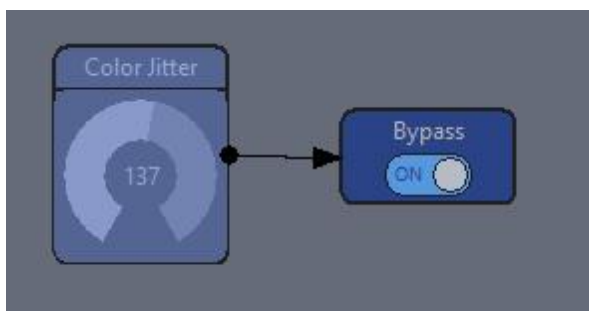


Parameter Bypass

You can disable any parameter by using Bypass, including Randomizer. So if we want to have a switch that disables randomized Color jitter (and uses color jitter set with the knob itself) we can drag Parameter Bypass over to the Random box which will connect it to the Bypass switch.



Similarly we can add Bypass Switch to the parameter itself - bypassing a parameter will load its value from the Preset and not use the value set by the knob.

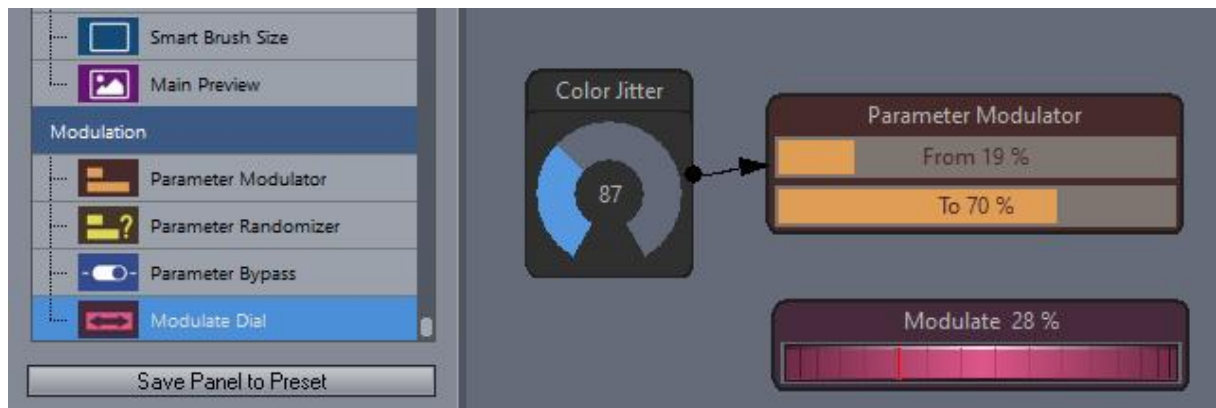


10.22 Panel - Parameter Modulator

Modulator is similar to the Randomizer, but instead of the Random value, it will receive a value from a global Modulator slider.

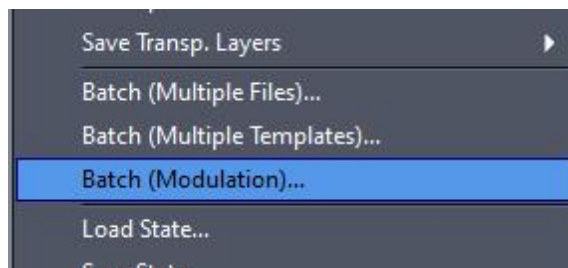
This is mostly useful to change parameter(s) during Batch (modulation) process, but can be also used alone to change connected settings.

Similarly as with the Randomizer, we need to drag the Parameter Modulator over the parameter, (for example over the Color Jitter knob)

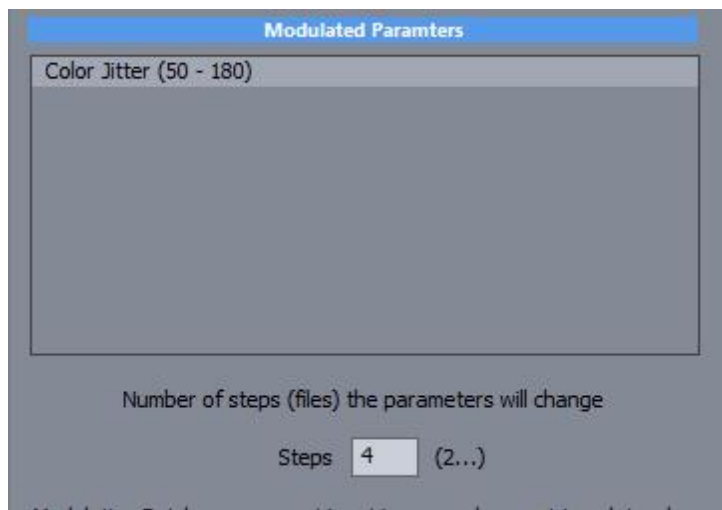


We can also drag **Modulate Dial** and when we change the dial, the Color Jitter will modulate from 19% to 70% of the knob value.

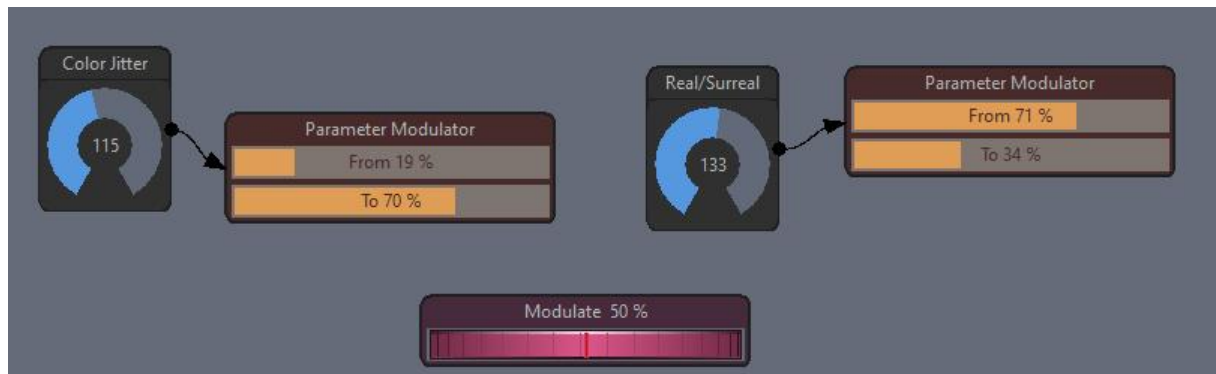
If we use **Batch (Modulation process)** in menu Files...



...we could see that we are now offered number of paintings that will be created while the modulated parameter will change from the min to max as set by the Parameter Modulator.



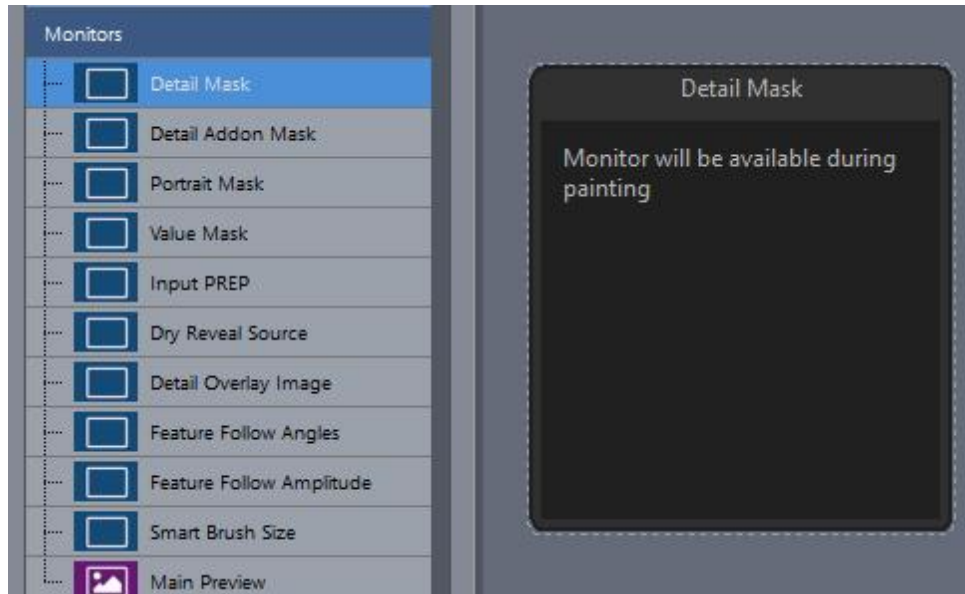
Modulators can be also used alone to change a group of parameters, each within their own specific range..



If you make the panel like on the image above, moving the Red Modulate dial will increase Color Jitter within 19%-70% while the Real/Surreal value will decrease from 71% to 34% at the same time.

10.23 Panel - Monitors

Monitors help you to see image at various stages - such as masks for example.



Most monitors will be calculated only during the painting (and so they would show image during and after painting)



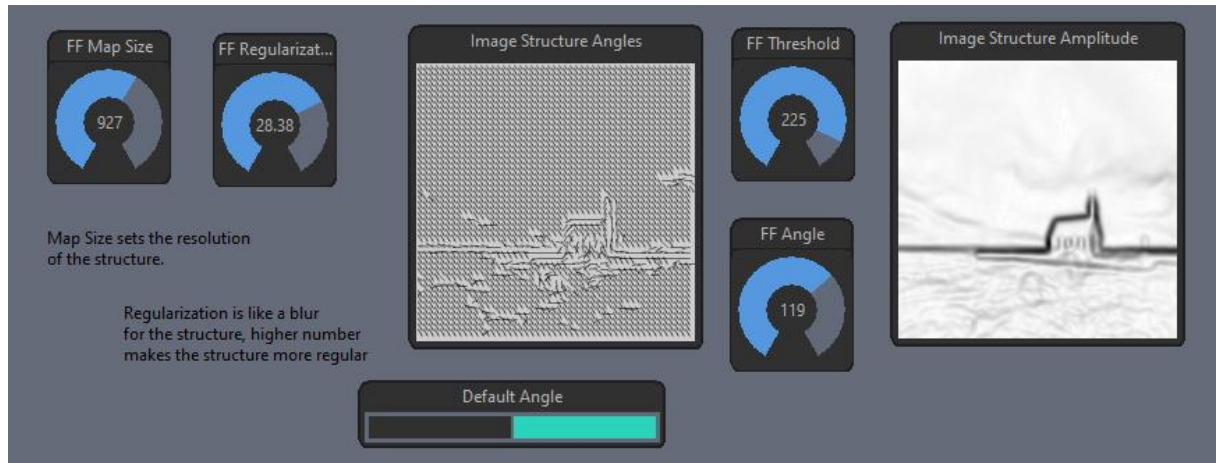
Note Masks display the image in "alpha channel" notation where white is where the painting will be applied and black where it will be avoided. (so black means "masked"). The masks may change during painting.

Two monitors are interactive: Image Structure Angles and Amplitude that work right away.

(See preset Cezanne 7)

As you move the FF map Size or FF Threshold, the monitors will display the changes immediately. These parameters refer to Feature Follow¹⁷³.

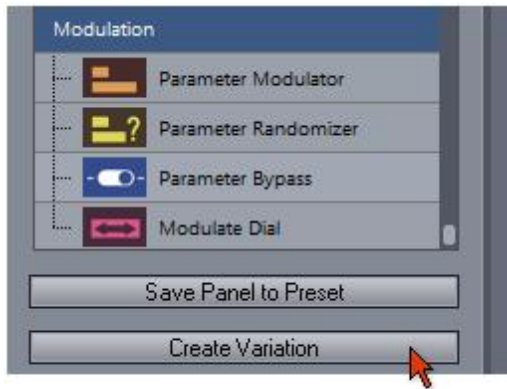
Note: Image Structure Amplitude is also used to calculate Structure in the Auto Masks¹⁴⁷.



10.24 Panel - Create Variation

Panel values are temporary so if you dial a particularly nice combination, this will not be saved with the panel and will be lost if you select different preset.

To keep the settings dialed in the panel you can spawn a new Variation:

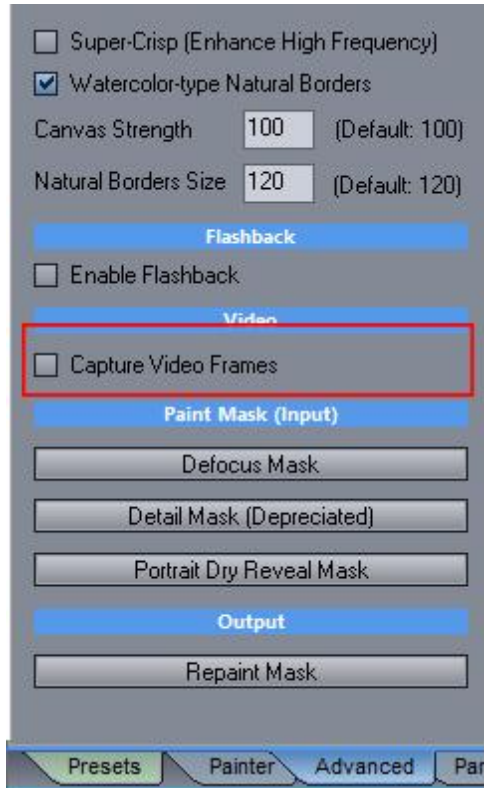


Clicking Create Variation will save a new variation with the parameters currently dialed in the panel.

Please note the difference between Save Panel and Create Variation. The first saves the knobs (but not the actual values) the second saves the knobs values into a new Variation.

10.25 Capture Video Frames

In order to capture video (for example for youtube) you have to enable it in the Advanced tab (capturing video frames will significantly slow down the painting)



During the capturing a message will be displayed in the right top corner. Clicking on the "Capturing" button will pause the capturing of frames.(the painting will still continue).

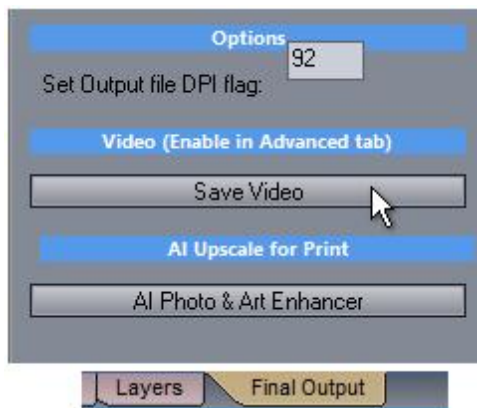
Tip:

Note, you can also capture video when in 360 mode and the video export will transform the frames to equirectangular projection.

If you want to publish such video on youtube as 360, you need to export it to mp4 and then use google "Spatial Media Metadata Injector" application to set flag that it is 360 video so youtube would recognize it as such.



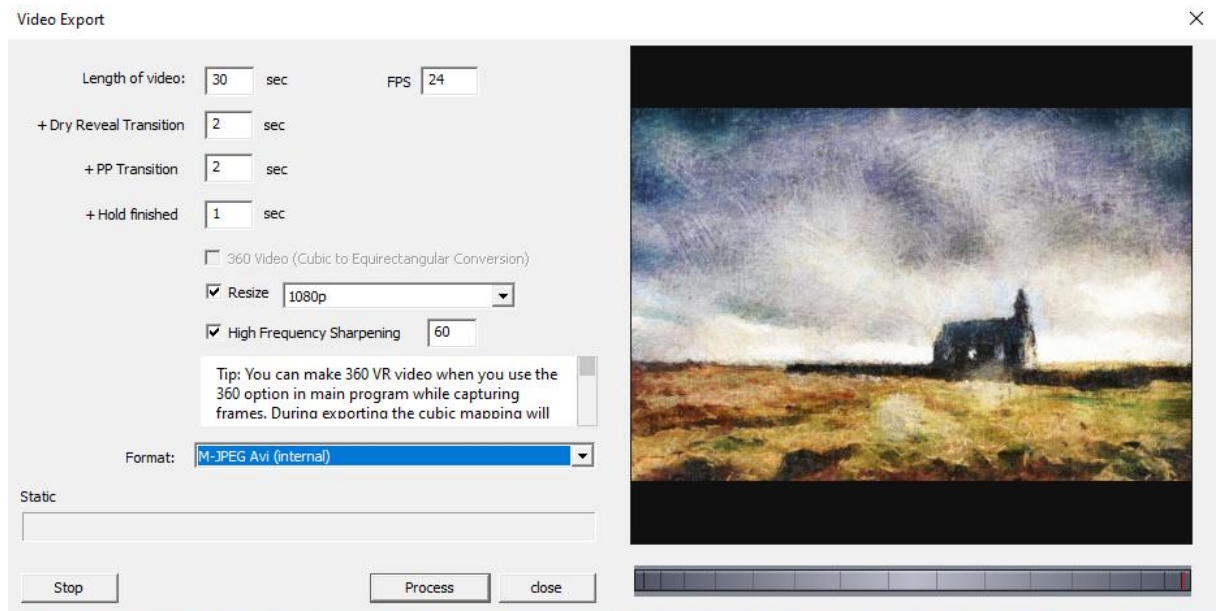
Once the painting is finished you can export the video from the Final Output tab:



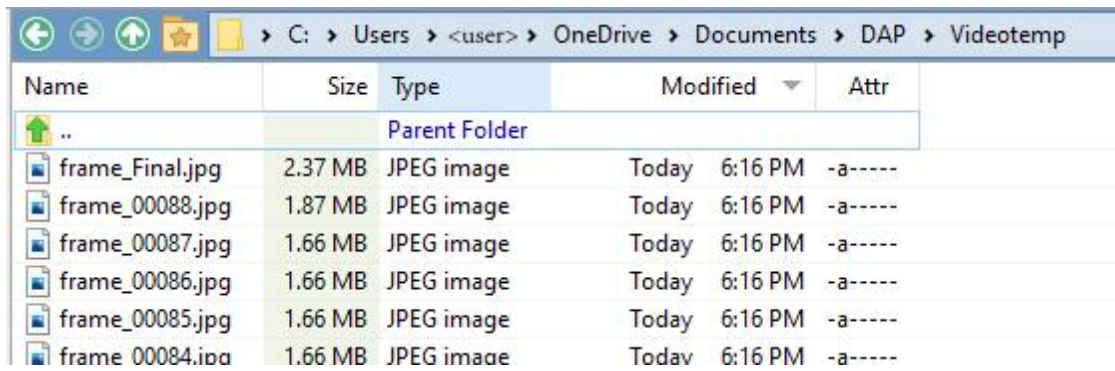
Video will be exported in M-JPEG AVI (internal codec) file and you can select the length of the video - this will also affect how fast will the painting run in the final video. You can also select export in MP4 file which would use ffmpeg.exe - you need to have ffmpeg static build installed on your computer.

Length of the Video - the basic length of the clip

- + Dry Reveal Transition - how long the Dry reveal transition will be
- + PP transition - how long the post processing transition will be
- + Hold finished - how long the last frame will be held



You can also access the captured frames directly in the Document folder in \DAP\Videotemp\ subfolder and use your own video processing (ffmpeg for example)



Name	Size	Type	Modified	Attr
..		Parent Folder		
frame_Final.jpg	2.37 MB	JPEG image	Today 6:16 PM	-a-----
frame_00088.jpg	1.87 MB	JPEG image	Today 6:16 PM	-a-----
frame_00087.jpg	1.66 MB	JPEG image	Today 6:16 PM	-a-----
frame_00086.jpg	1.66 MB	JPEG image	Today 6:16 PM	-a-----
frame_00085.jpg	1.66 MB	JPEG image	Today 6:16 PM	-a-----
frame_00084.jpg	1.66 MB	JPEG image	Today 6:16 PM	-a-----

11 Avoid typical mistakes

A real life painting always start with a paint-worthy scene.

Painting is not just a photo with brush strokes applied instead of pixels. The painter doesn't see the image as a camera would see it but he changes the reality to better fit the art. The subject of the painting should be "paint-worthy" and well composed, not just an ordinary snapshot.

It is therefore important to select or take the photos with a painter in mind and in a spirit of a certain painting style.

To avoid any long discussion, the best is to actually study real paintings and study

- **subject**
it has to be significant, obvious and worth to be painted
- **framing**
how the subject is placed on the canvas, rule of thirds, golden ratio, composition
- **relationship**
subjects and its surroundings, subjects are not just placed there randomly - they need to tell some story
- **focus** (not a photography focus)
think of a spotlight in theaters that is used to highlight the important parts of the scene while keeping the rest "hidden". With painting we have many more ways to create such spotlight: using light (shadows/light), with focus (blurred/sharp), with details (rough/detailed)

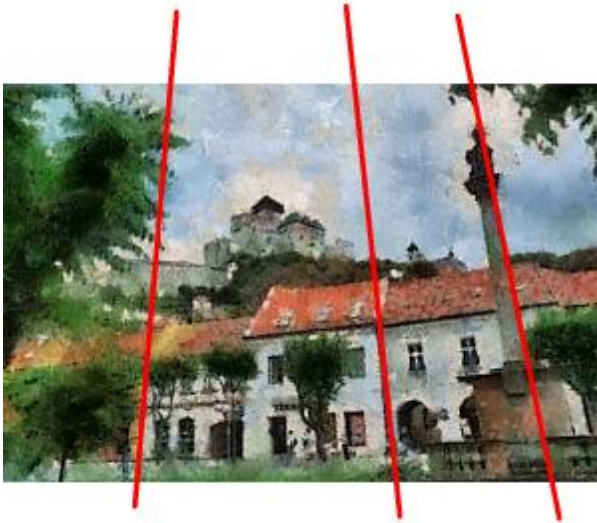
Avoid

Try to avoid typical photography flaws

- **barrel distortion**
unlike lenses, our eyes do not see the world with a barrel or pincushion distortion (they technically do, but our brain fixes this)
- **vertical perspective distortion**
when standing or sitting, our eyes have resting position usually at the horizon level, it is very rare for a painter to paint a scene as if he is looking down or up. However this is very common in photography because in order to fit a scene into the viewfinder or LCD we have to tilt the camera most of the time which introduces a perspective distortion to all vertical lines. It is so typical that we normally don't pay attention to this, but it is NOT how any painters would likely paint
- **unnecessary objects and people**
A snapshot photo scene has usually a huge amount of insignificant random details. If we take a photo of a person there is a whole world going on the background that may have nothing to do with the subject. The same apply for landscapes. A painter would simply remove these things and you should do the same.

Example:

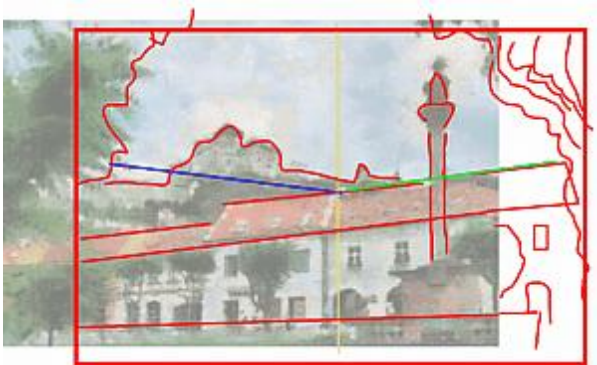
The image bellow has all the technical details of a painting (brush strokes, color run etc...) but there is one significant problem with the image that just scream "photography".



The problem is of course the Tilt perspective that was created by the camera tilt. A painter would paint an image without introducing a vertical perspective (to keep the buildings and pillars standing straight). A perspective correction (included in PRO version under plug-ins) or using your editing application (like our PhotoBrush) will fix this error.



This is much better, but by critically looking at the composition above, there is still some feel that the image is a "snapshot" with weak intention to correctly compose (frame) the picture. The image, when used as an art, could appreciate different composition like for example the drawing below.



The proper framing and cropping is a technique that photography (and film) share with the fine art and

should be part of the basic photographers knowledge.

12 Painting for Web

Bigger is not always better.

If you want to produce a painting that will be viewed on the web you have to remember that the viewer will see it in a reduced size. A typical monitor resolution will be usually around the 1440x900 size, with only limited number of people seeing images in higher resolution.

However a painting produced on high resolution and then resized down will loose its brush stroke character.

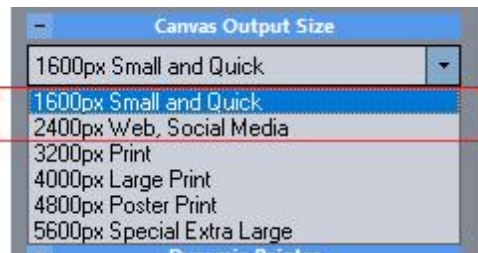
6 Megapixel



32 Megapixel



Painting for web when viewed in normal web gallery size (like 800x600) should be therefore produced around the first two resolution set in the Canvas output size for the best paint-like effect.



The result image with 2400px as the longest size still gives a good paint-like feel even after resizing.



In situation where you need to produce image for print and for web it may be advisable paint it twice with different resolutions.

13 Painting for Print

It is a general misconception that you need to use highest resolution possible for large print.

This is mostly based on the fact that people usually use a DPI number as the guidance for image resolution.

For example to keep things simple it is often said that you need 300 dpi photo to be printed properly on an inkjet printer, which would give us for example 3000 x 2400 pixels on a 8 x 10 photo. (we multiplied dpi with the paper dimensions)

While this math certainly work for that paper size, many people assume it must be the same for any other sizes. So a 13" x 19" would require 5700 x 3900 and a 24" poster needs 7200 x 5400 etc..

The flaw in the above is the assumption that we will be viewing all the different sizes from the same distance as the 8 x 10 photo.

DAP and resolution

While having more resolution doesn't hurt anybody when printing photos (the resolution just go to waste), with dynamic auto painter the situation is vastly different.

A **high resolution** for a small size of print will diminish the effect of the painting as the brush strokes will become actually too small to see clearly.

In order to maximize the effect of brush strokes we need to limit the output resolution to the

optimum for a desired print size.

How to determine the optimum resolution for a certain print size? This is done using Circle of Confusion.

Circle of Confusion

Circle of confusion describes the smallest image element that still remains identifiable when viewing from certain distance.

An average human eye (based on 20/60 vision) is said to distinguish about 5 lines per millimeter at a distance of 250 mm (10 inches). Note the standard does indeed take 20/60 vision as an average regardless if people wear glasses or not.

A typical viewing distance for image is usually equal to the diagonal of the printed image but the circle of confusion can be also calculated as a disc on the base of a cone with the diameter angle being about 1 arc minute for 20/20 vision.

What this means:

That means there is a maximum usable resolution for certain print size with typical viewing distances and going higher will not change the perception of having more detail.

Reszie image after painting to get more resolution

For many styles it is often more pleasing to resize the painted image to higher pixel resolution, rather than to produce high resolution image with a lot of tiny details.

For this purpose we created a special AI resizing application called AI Photo & Art Enhancer

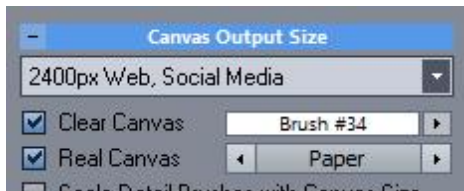


<https://www.mediachance.com/aienhancer/index.html>

If you have the AI Enhancer installed, you can call it directly from DAP:



For best overall result we suggest to use 2400px Canvas Output Size (need to be set before painting) then use AIE to enhance the details for print to double of that resolution.



There are also older (and less effective) tools directly incorporated in DAP such as **Art Upscale** process that uses Reactor. For more details see the Baking and Resizing¹²⁴ chapter.

14 Artist Inspirations

The Dynamic Auto-Painter doesn't copy any artist as this is obviously impossible, but it gets its inspiration from real-world artist by studying their color palettes and types and character of brush strokes.

But the rest is on the user because it equally depends on the type of input image. For example we can set up a nice photo of still life scene and get very respectable result or we can just take a snapshot of some fruits on a table with everything else on it and your kitchen as a background and get a pretty much result that nobody will enjoy.

The painting starts with a scene and it pays to study the work of the artist that were inspiration for Dynamic Photo painter:

Frank Weston Benson (March 24, 1862 - November 15, 1951) was an American Impressionist artist, and a member of the Ten American Painters.

Paul Cézanne (19 January 1839 – 22 October 1906) was a French artist and Post-Impressionist painter whose work laid the foundations of the transition from the 19th century conception of artistic endeavour to a new and radically different world of art in the 20th century. Cézanne can be said to form the bridge between late 19th century Impressionism and the early 20th century's new line of artistic enquiry, Cubism. The line attributed to both Matisse and Picasso that Cézanne "is the father of us all" cannot be easily dismissed.

Claude Monet (also known as Oscar-Claude Monet or Claude Oscar Monet (14 November 1840 – 5 December 1926)[1] was a founder of French impressionist painting, and the most consistent and prolific practitioner of the movement's philosophy of expressing one's perceptions before nature, especially as applied to plein-air landscape painting.[2] The term Impressionism is derived from the title of his painting *Impression, Sunrise*.

Vincent Willem van Gogh (30 March 1853 – 29 July 1890) was a Dutch Post-Impressionist artist.[1] Some of his paintings are now among the world's best known, most popular and expensive works of art.

Gustav Klimt (July 14, 1862 – February 6, 1918) was an Austrian Symbolist painter and one of the most prominent members of the Vienna Art Nouveau (Vienna Secession) movement. His major works include paintings, murals, sketches, and other art objects, many of which are on display in the Vienna Secession gallery. Klimt's primary subject was the female body,[1] and his works are marked by a frank eroticism—nowhere is this more apparent than in his numerous drawings in pencil.

Jean-Baptiste Camille Corot (July 17, 1796 – February 22, 1875) was a French landscape painter and printmaker in etching. Corot was the leading painter of the Barbizon school of France in the mid-nineteenth century. He is a pivotal figure in landscape painting and his vast output simultaneously references the Neo-Classical tradition and anticipates the plein-air innovations of Impressionism.

Camille Pissarro (July 10, 1830 – November 13, 1903) was a French Impressionist painter. His importance resides not only in his visual contributions to Impressionism and Post-Impressionism, but also in his patriarchal standing among his colleagues, particularly Paul Cézanne and Paul Gauguin.

Giuseppe Arcimboldo (also spelled Arcimboldi; 1527 - July 11, 1593) was an Italian painter best known for creating imaginative portrait heads made entirely of such objects as fruits, vegetables, flowers, fish, and books — that is, he painted representations of these objects on the canvas arranged in such a way that the whole collection of objects formed a recognisable likeness of the portrait subject.

Joaquín Sorolla y Bastida was a Spanish painter, born in Valencia, who excelled in the painting of portraits, landscapes, and monumental works of social and historical themes. His most typical works are characterized by a dexterous representation of the people and landscape under the sunlight of his native land.

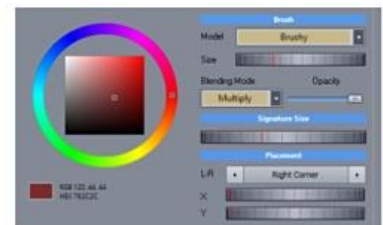
John Singer Sargent (January 12, 1856 – April 14, 1925) was the most successful portrait painter of his era. During his career, he created roughly 900 oil paintings and more than 2,000 watercolors, as well as countless sketches and charcoal drawings. His oeuvre documents worldwide travel, from Venice to the Tyrol, Corfu, the Middle East, Montana, Maine, and Florida.

Hyperrealism is a genre of painting and sculpture resembling a high resolution photograph. Hyperrealism is a fully-fledged school of art and can be considered as an advancement of Photorealism by the methods used to create the resulting photorealistic paintings or sculptures. The term is primarily applied to an independent art movement and art style in the United States and Europe that has recently developed since the early 2000s

*Taken from wikipedia.

15 Features sorted by Date

- Follow - manual way to set up brushes
- Signature - allows adding signature
- Signature tracing

- Feature Follow - Brushes can now follow the angle of image features which can dramatically improve the painting
- SMART brush size - brush can automatically resize to correspond to the image complexity
- Few new automatic mask options
- Panel tab to access any parameters of the preset
- Ability to Batch process image using changing preset parameters (modulation)
- Random parameters in Panel
- Ability to capture painting process into video frames



Feature Follow allows for more realistic painting

Other Changes:

- a variation can have its own separate brush size graph
 - adjust input for Detail Cycle added in Insert FX
 - Layer effect and Outline can be saved internally into the preset (previously preset could only recall existing layer/outline effect)
 - Added Template helper tool for creating brush maps
 - Fine Area Brush in Mouse Assisted Painting
-
- Grade Tab to fine color correct input image
 - Inpaint tab to fix and remove objects from the input image
 - Equirectangular 360 Panorama support
 - Leroy Color Randomizer
 - Internal support for Preset Folders
 - U-Paint Helper for aspiring real world artists
 - Art Tone
 - Link to Premium templates
 - Save layers as PSD
 - Tighter relationship between Color Adjust and Layers.

Grade Tab

This is a quick way to apply non destructive color correction to input image.



Inpaint Tab

In older version there used to be "Remove Unwanted Parts" tool that was later removed (the irony!) as it couldn't keep up with any larger size images. This is a rework of that idea with much more options. There are in fact 3 distinctive tools: the very effective Interactive Smart Patch Tools (for large elements) that can seamlessly patch unwanted parts with any other image parts, Spot Auto Heal Brush (for small parts) that will replace small blemishes with surrounding patterns and a simple Clone Brush known from image editing programs.

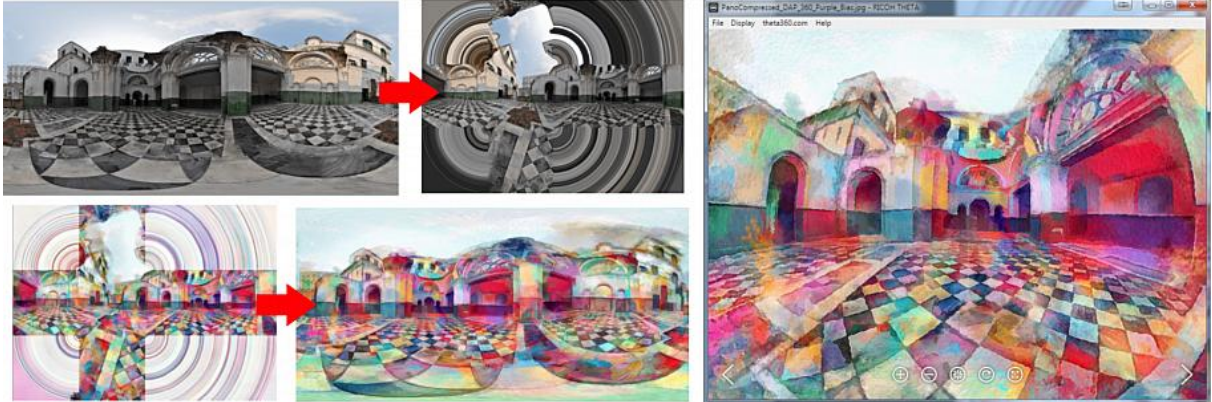
The Smart Patch will not only replace the selected part of image with another part, but also fit it there without obvious seams.



Support for painting 360 Panoramas

With the popularity of various action and 360 cameras such as Ricoh Theta, Samsung Gear etc, we added support for the equirectangular panoramas (full 360 degrees) that the cameras produce. The problem is not exactly trivial, we can't just paint the 360 panoramas as they are because when viewed the brushes will be distorted.

The Equirectangular images need to be first unwrapped into a cubic projection then paint and after that convert back to original state. This way the brushes when viewed in VR or panorama browser will be equally sized regardless where we look. During painting in 360 mode the software has to respect the seams and do few other tricks.



Art Tone settings in painting process

Art Tone is a continuation of Impressions - but this time they can be specified in the templates. This will paint the input image within certain palette. An obvious usage would be to load palette from the painting from which the template was originally created.



LeRoy Color Randomizer (menu Plug-Ins)

This Plug-in simulates the random colors used in for example Leroy Neiman paintings.

There are two uses: Directly changing input image before the painting (when used from within plug-in menu) or use in templates where the created Palette preset can be recalled. When using from within

templates there is much more control as you can specify how much the effect applies to underpaint and dry reveal. (Example: Aquarelle Nouveau) This way you can create spectacular colored images that still look right.

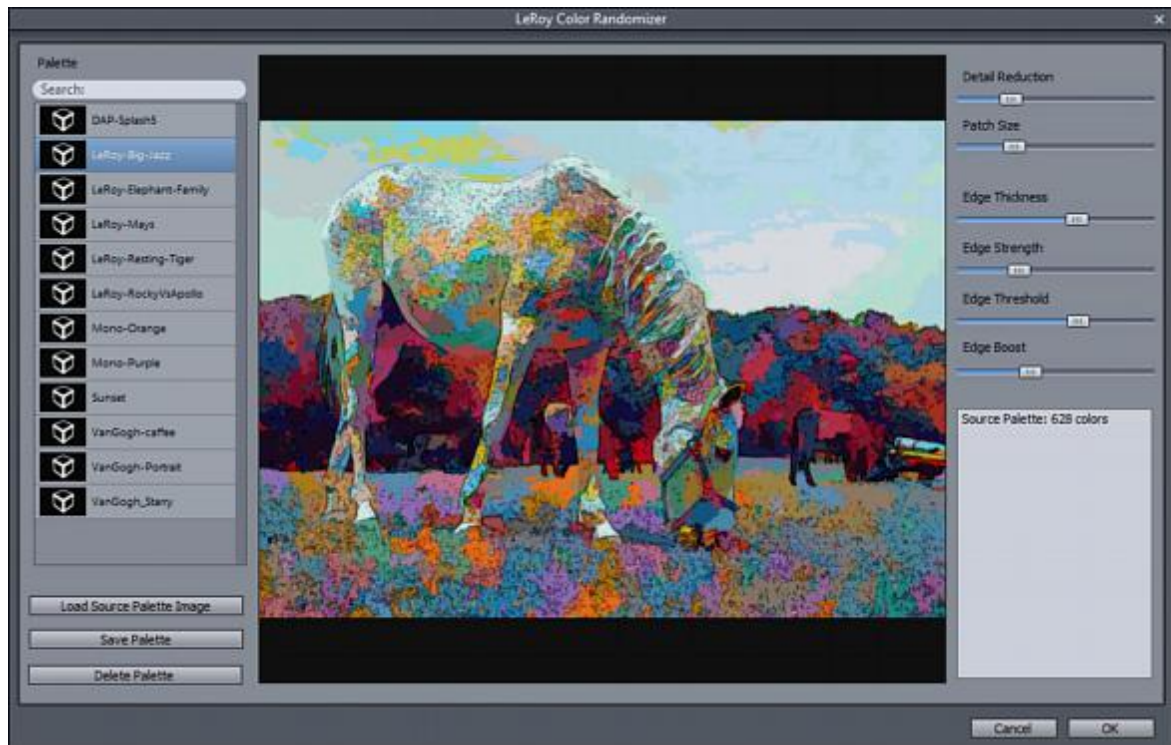


Image using Aquarelle Nouveau preset that uses LeRoy Color Randomizer:



Internal support for Preset Folders

The preset folders can now have Sub Folders (But you need to create them manually). The subfolders are meant to be for your own presets or imported presets. The subfolders only work in the My Document \DAP\objectpack location. When you are saving your own preset or importing presets you can then choose to save them into a created subfolder.



C:\Users\ \My Documents\DAP\objectpacks

..	
Gogh Gallery	
Monet	
My Own	
Acry-Real.000	934 bytes
Aqua-Real.000	7.08 KB
Aquarell.000	6.99 KB

Note: The folders are not for moving or organizing factory supplied presets but for your own or imported creations. All factory presets are installed within program folder (C:\Program Files\DAPPRO6\objectpacks\) but any changes you made are saved in C:\User\<name>\My Documents\DAP\objectpacks. DAP will automatically show only one preset in the Preset Library if duplicates exist (the

saved files in My Document Files have priority over the ones in Program Files).

If you start manually moving factory presets from Program Files to My Document subfolders every time you reinstall the software you will have them show in the root again!

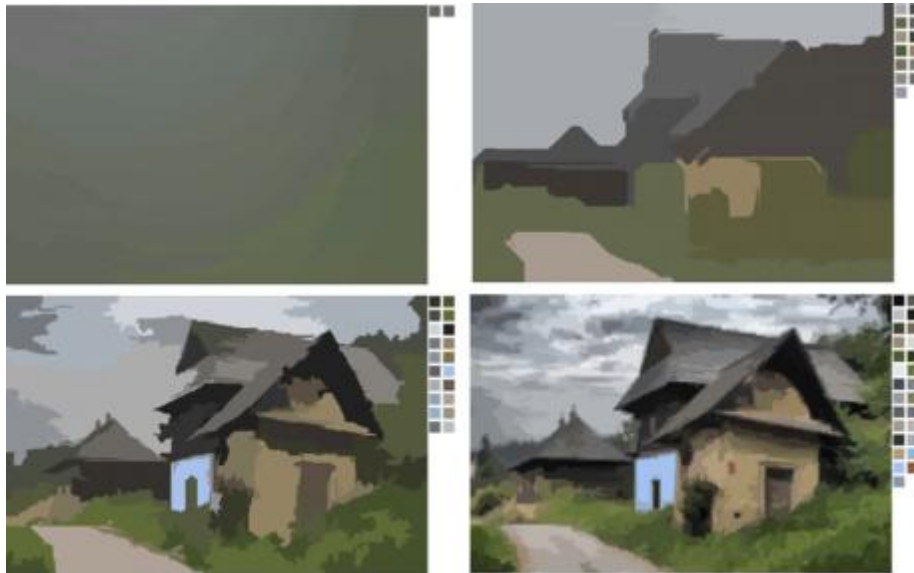
- If you want to change factory preset - add variation it saves tons of space
- Don't manually move factory presets to subfolders or soon or later you will end up with duplicates when the update reinstalls the presets back to the root folder.
- Save your own presets either in root or in subfolders (You can currently **only** create subfolders manually with file explorer in C:\User\\My Documents\DAP\objectpacks before you start DAP)

Tip: You can have your own image for the folder as shown in the image above if you add banner.jpg file with dimensions 204x40 into the subfolder.

Read more [621](#).

U-Paint Helper

This is a tool for aspiring artists. It breaks the painted image into steps or layers that can be then used while painting with real brushes and colors. It also works on just an input image (which can be used if you already have exported your paintings previously). Since it uses Reactor it is infinitely customizable and you can write your own process how to break image into layers.



Changes:

The Canvas sizes in painter tab were renamed. The Megapixel number used before version 6 would often give impression to beginners of a "small" output and they would try to push it unnecessary higher (which is counter-productive)

The standard 10 Megapixel is now called: 3200px and this is the size which is probably best used for most normal outputs as it produces 3200x2400 images

- new processing during underpaint called value mask that changes transparency of brushes dynamically (as if parts of the images are masked), For example it can preserve white spaces in watercolor. this makes the result more realistic while you can easy up on dry reveal step to preserve more of the brushwork.

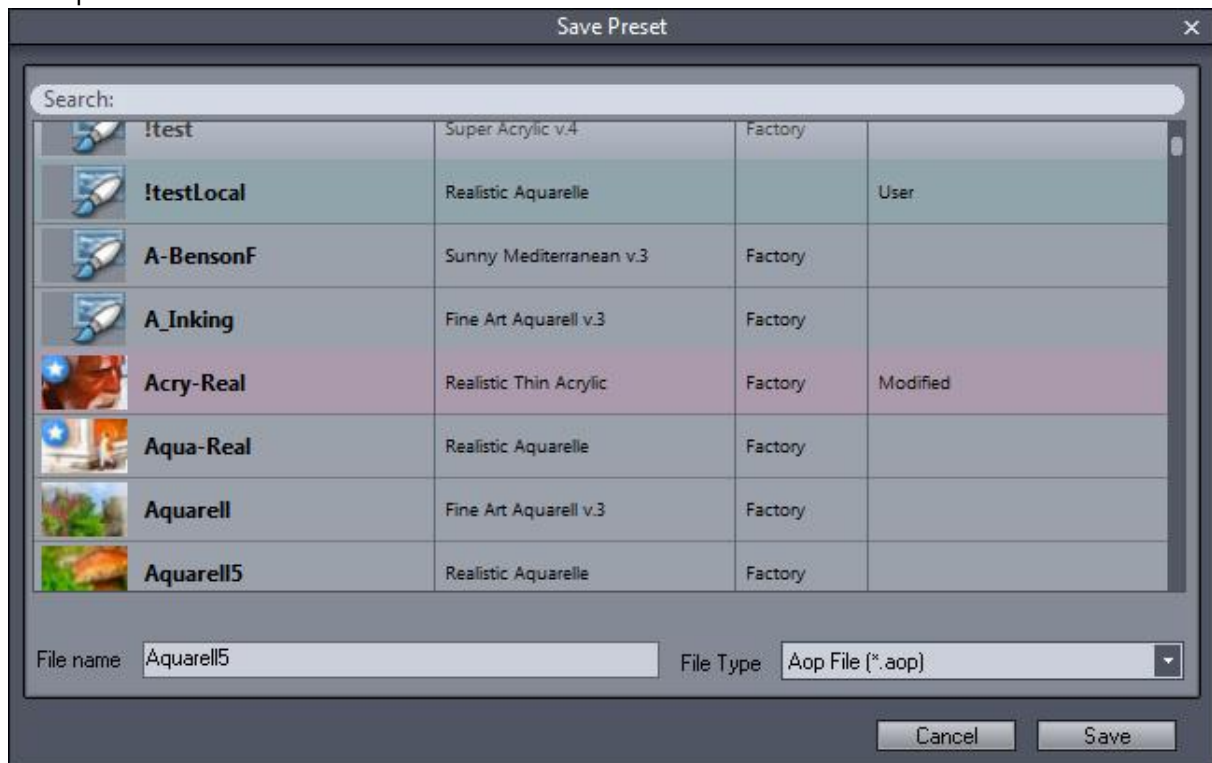
- substitution brushes. This was half there but never finished. The process will think it paints with one set of brushes (guide), but then actually put down a brush from a parallel set. This allows for difficult templates, mostly ones that have lot of transparencies like pencil drawings, transparent watercolor - currently the system would choke on them and not put them on properly. But now you can add a "guide" template which has easy brushes to work.

Variations

- Variations [20] for each preset. Variations will use the same brush set as the parent but can have different settings (and reactor effects) without copying the whole brush template. Also they will appear nested in presets so say Benson can have 5 variations hidden inside but they can be pretty different.
- added **variations** and their management to template Editor

User File Management

- saving/ modifying templates is done in user document - no longer "run as administrator" needed
- Template editor save and load now use a template management system that keeps track which templates had been modified



The user management will keep track of which templates are modified and also allows "rolling back" changes from factory supplied templates.

- The presets tab will become the ONLY way to select the presets no longer the small square presets in Painter tab. Instead only the selected preset and variations will be displayed in the Painter tab
- Clone tool in Retouch
- Painting preview now fits the whole window during its process, instead of the smaller preview in the middle, also ability to see painting in 1:1 pixel size during painting. You can revert back to v.4 small preview if you wish so (the old way is about 30% faster)
- dry reveal step will be now much faster if a reactor is used for dry reveal process (like many new v.4 presets).
- Reactor effects can now be adjusted with more parameters (previously only a single parameter had been adjustable with reactor effects)

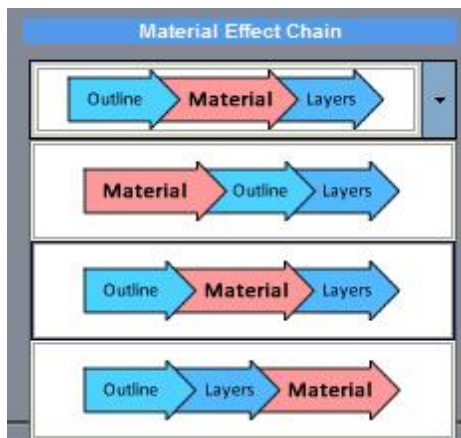
- Templates and variations now have a large preview.
- Image Browser has a collection virtual folder where you can add images.

New Layers

- Redesigned and much more powerful layers window. Now you can add many image processing functions in the layers as fully dynamic effects. There are other tricks such as adding layers and effects as a mask for a layer or adding effects only to the layer below (Clip to Layer)

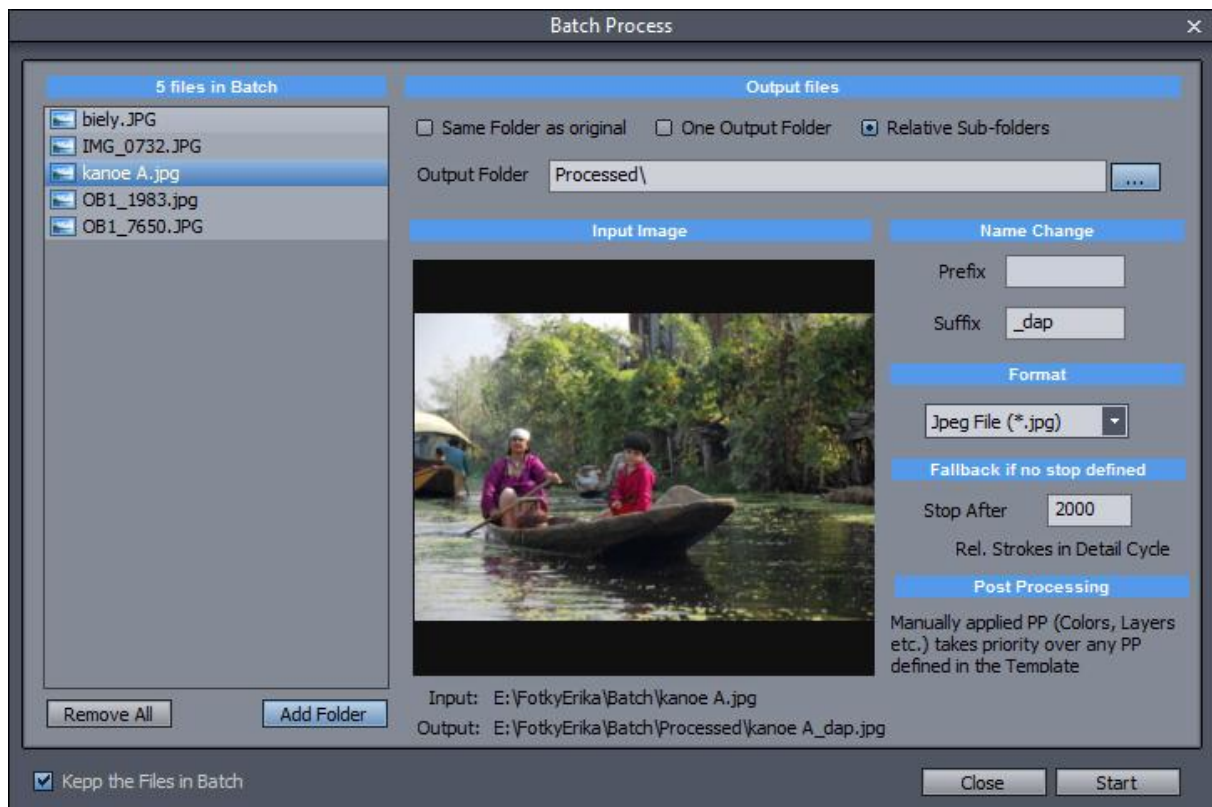


- a selector to change order when the Material is going to be applied (like before Outline, after Outline, after layers...)



Batch Processing

- Full Batch processing that takes a folder and paint it with selected template and chosen post processing
- A Multi-Template batch will use current image and paint it with selected or even all available templates.



While the previous versions were focused solely on a fully automatic photo painting, with the version 4 we wanted to give to users more manual-assisted painting options.

Many of the options can be now fully adjusted after the painting is done, for example users can now manually brush-in various stages to any areas of the painting, remove brush strokes from subject face or pain back under-paint to better separate the subject.

Also with the release of our new software Photo-Reactor, DAP was a logical destination for the application of the new virtual filters that can be designed with it.

GUI

- Preset tab (large preset window; one line per preset with description, search capability), also ability to delete presets, open in AOP Editor etc...
- Start/Stop buttons always visible on Painter tab
- favorites , groups for presets
- custom settings in favorites
- A small label displays the current stage of painting and also a progress bar to know how long the stage runs
- A larger optional guide that gives you better description about each step, what to do and when
- Main painting process work on separate thread to "lighten up" the GUI during painting
- Final Output tab to see the final mix of all post processing

Painting

- During painting we can select brushes to manually assist with painting
- Set different probabilities and bans for brushes. This can be saved in favorites.
- Soft Reveal Brush - paint reveal layer with mouse over important objects to reveal smooth detail (sort of Interactive portrait mask)
- Underpaint Reveal Brush - reveal underpaint with mouse during detasil brush

- Improved Dry reveal that tries to avoid single pixel pinholes (that can be seen with the older dry reveal on some cases)
- Reactor Integration: Injecting complex reactor process at various stages: pre-processing of image, dry reveal stage (before/replace/after), post processing
- Open input images in Photo-Blend to create collages
- Improved Dry Reveal to avoid small pixel size pin-holes

Post Processing

- Color Adjustment of final image
- Outline Designer for pencil-like outlines
- Layers (replace Overlay) to mix and apply various stages and textures
- Color Adjustment of the final image
- Retouch to manually paint back various stages after the image was finished
- Special resizing method: Art Upscale to resize image for printing of very large sizes.

Other

- Saving more complex layered PSD with separated underpaint and detail transparent layers, canvas background, canvas texture and dry reveal layer
- Saving transparent PNG snapshots of underpaint and detail layer either cumulative or non-cumulative during pause.
- Adding new parameters such as random brush transparency

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