
AcceleratedVision
NEAT
Removes or adds movements
of people, animals, objects
using unique technology
SHARPEN
HDR
NEAT
DENOISE
FOCUS
COLOR
LUT
ZOOM
BLACK & WHITE
EMOTION
ANALOG
DIVE
Autor: Gerhard Middendorf

Guide to the special functions of the programmes

NEAT

It's fun to photograph famous landmarks and well-known favorite motifs. However, the anticipation of unique photos can quickly be dampened when people or passing cars constantly obscure the main subject. This is unavoidable with many subjects because attractions naturally draw large crowds of people who want to look or take photos, and the streets in front of them rarely have little traffic.

With **NEAT**, you have the ideal solution at your fingertips: The program recognizes and removes all moving people, animals, or cars from the image and combines up to 1,000 shots in an astonishingly short time to create a perfect image without distracting tourists or other moving objects. With “Add Motion,” you can achieve fascinating image effects or combine sequences into a motion sequence. Even when shooting without a tripod, automatic image alignment ensures quick success.

In NEAT, you can also import motion sequences from videos.

You can simply enjoy this software or use it interactively. You can let the program automatically calculate everything for you and look forward to the best possible result in a matter of seconds. Or you can selectively intervene in the process to adjust the result image to your individual preferences - everything is possible.

NEAT is a problem solver and image editing program in one.

You can use these modules not only for the loaded image or video sequences, but also for imported individual images, e.g. result images that are to be post-processed later
In the RAW module, all changes made are immediately applied synchronously to all individual images of an image or video sequence, which is particularly helpful for straightening.

Note: The cross-programme functions, modules such as the RAW module, all other modules offered that can be displayed via the toolbar and the expert mode can be found in the corresponding guides.

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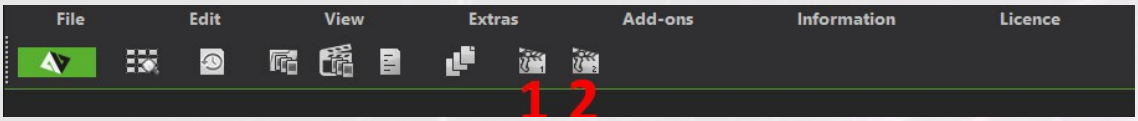
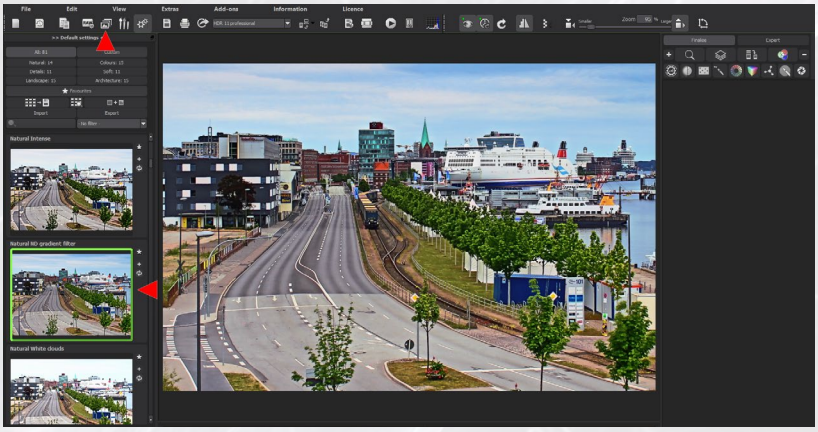
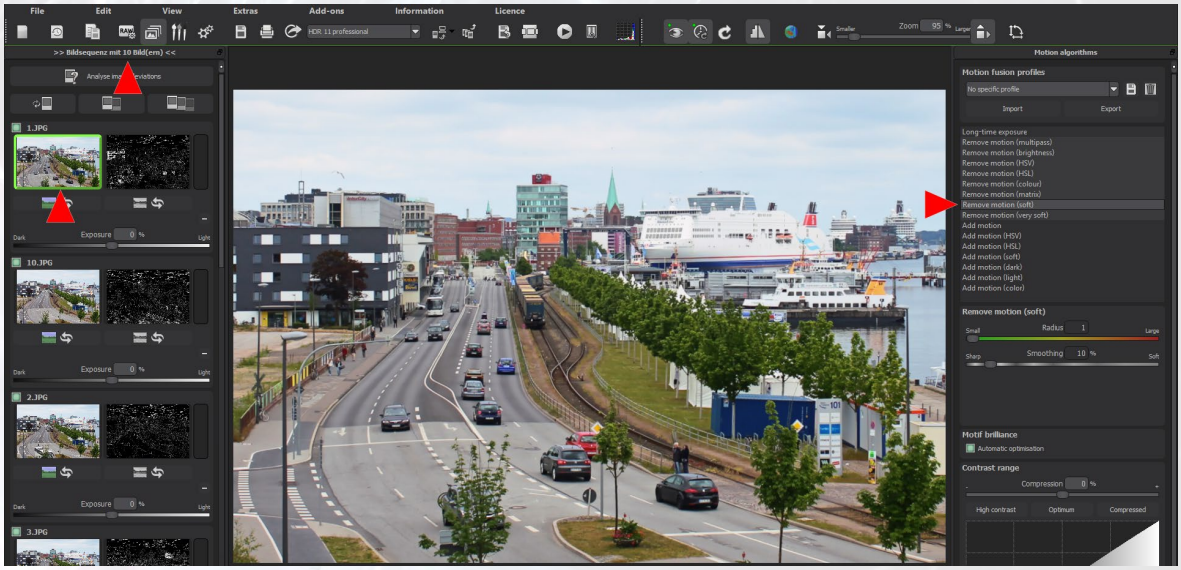
1. Home page with 2 example images



After starting the program, the **NEAT** start screen offers a feature that sets it apart from most other programs: **2 sample images**.

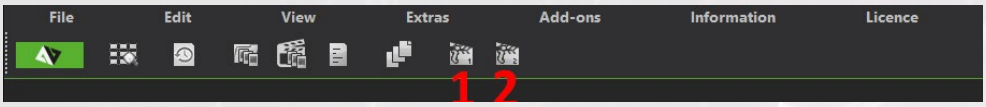


1. Example image with the **Remove motion algorithm**: The first example impressively demonstrates the automatically calculated result image of an image sequence in post-processing and the performance of the program by clicking on button (**1**). In this example, the image look is determined by the **Natural ND Gradient** filter preset.
If you want to see how many images make up the image sequence for this result image and which movements were removed from each individual image, click on the **Edit image sequence** button at the top of the toolbar ...

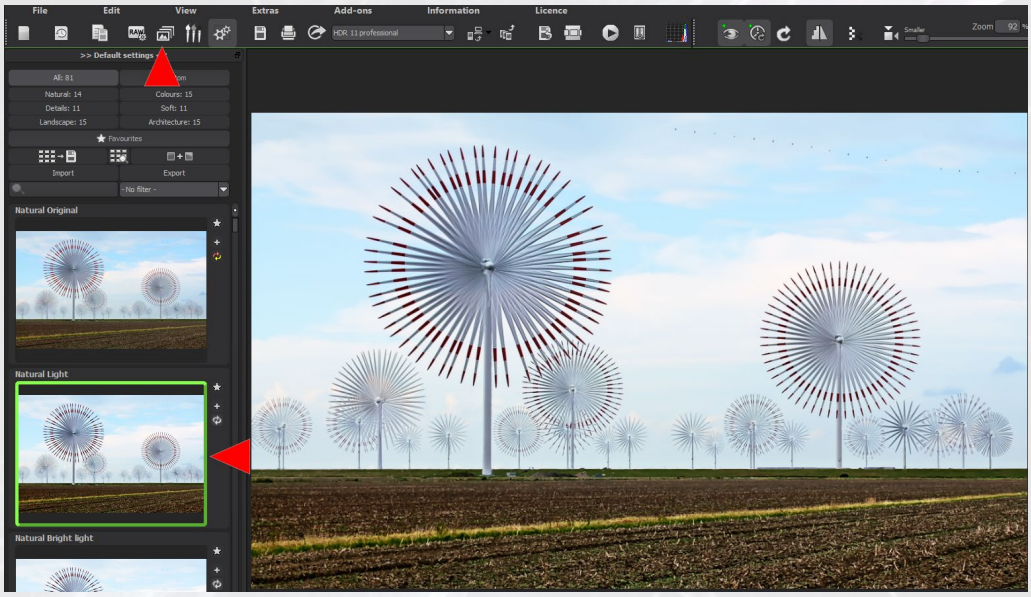


... to the **"heart"** of the program with the user interface. Here you can see at a glance that the image sequence consists of **10 images** and that the algorithm **Remove motion (soft)** has been selected. Clicking on an image thumbnail displays all vehicles in this individual image in the program window.

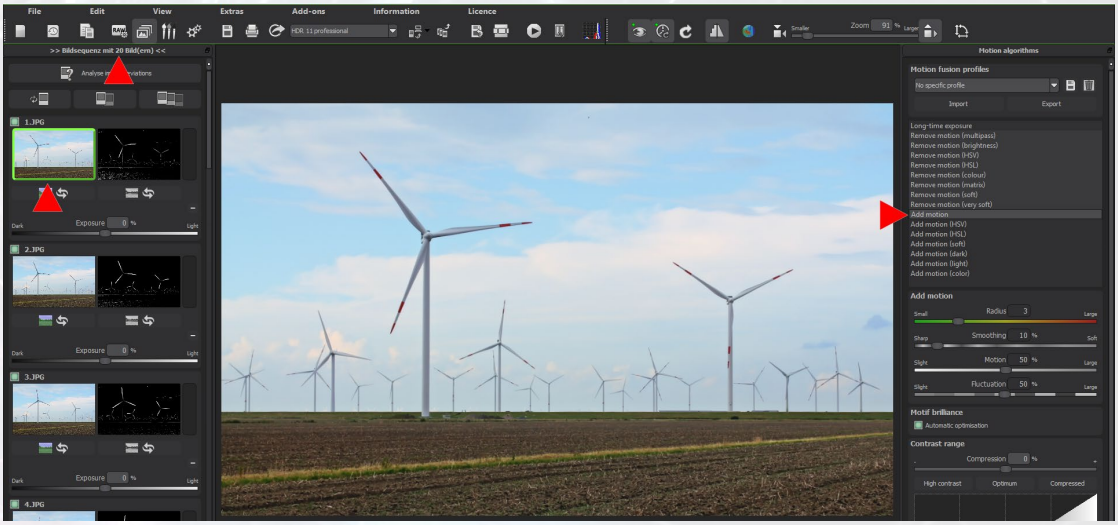
2. Example image with the **Add Motion algorithm**



Go to **File/Home Page** to return to the home page and open the second sample image (**2**).



This result image shows another impressive option offered by **NEAT: Adding all movements** from a photographed image sequence. In this result image, the selected preset Natural Light shapes the look of the image, which you can adjust to your liking by selecting a different preset if necessary.

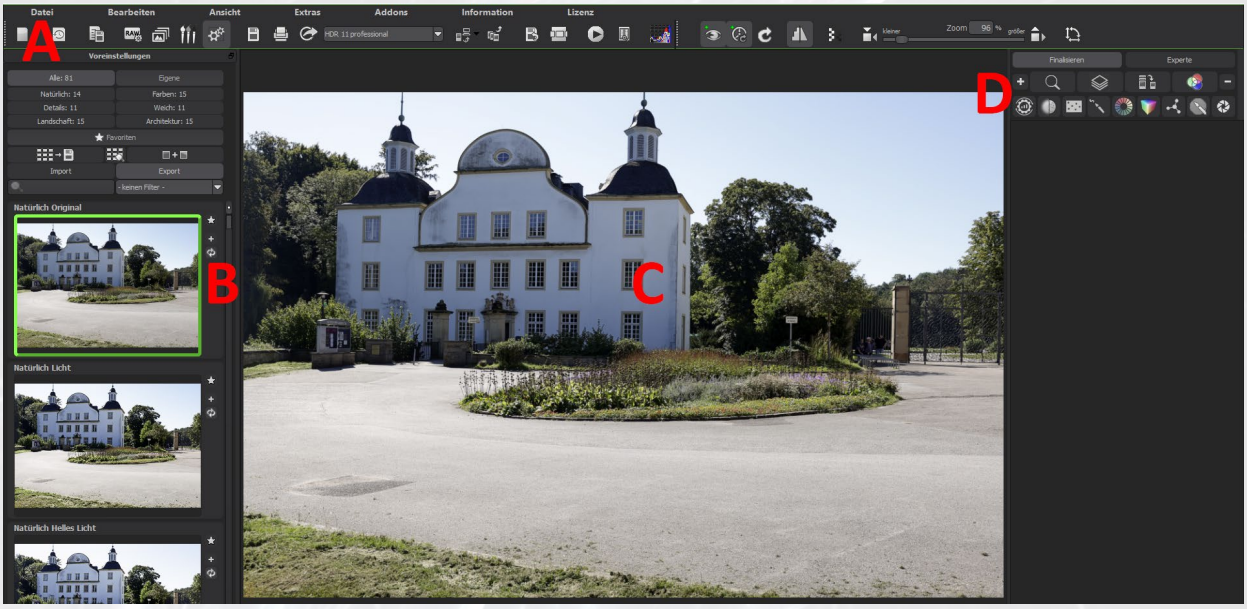


After switching back to the **Edit Image Sequence** interface, you will see the **20 individual images of the image sequence** on the left-hand side and the selected **Add Motion algorithm** on the right-hand side, which combines the individual images into the resulting image. By clicking on any thumbnail of an individual image, you will see the corresponding individual image of the photographed wind turbine in the program window.

2. Workspace with toolbar

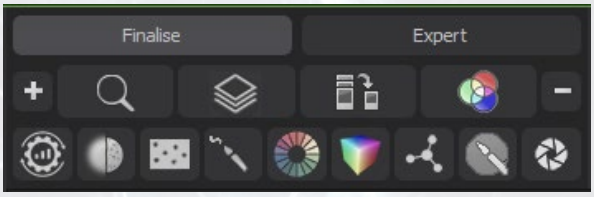
If you own another **Accelerated Vision** program, you don't need to change anything. The layout and use of the menus, tools, and modules offered in the toolbar or RAW module are identical, require no adjustment, and are described in detail in the **General Functions guide**.
Selected **presets**, special features such as the **image sequence player**, and the **Motion map** are described in the following chapters.

Note: The user interface is designed for **4K screens**. On **Full HD screens**, you will need to scroll down slightly to see all modules and options.



NEAT's scope of work is divided into four main areas:

A: Menu and toolbar.
B: Presets and the various preset categories.
C: Image area with the automatically calculated result image.



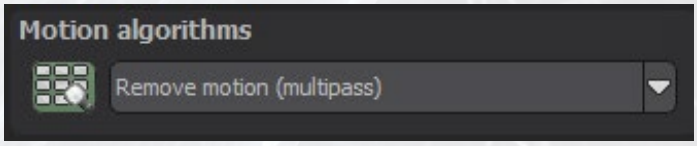
D: Toolbar in finalize mode with selectable modules (see next page).

Clicking on the **plus sign displays** all modules, clicking on the **minus sign collapses** all modules as shown in the graphic.
Clicking on a desired module will display it; clicking on it again will hide it again if necessary.
This allows you to quickly configure the interface so that it is optimally tailored to your workflow. The currently set configuration is retained even after the program is closed and restarted.

Selectable modules in the toolbar

Top row:

1. **Magnifying glass/comparison view.**
2. **Fusion profile area:** This module is identical to the module in the **Edit Image Sequence area**. The individually created profiles can be modified or tested here as desired during **post-processing**.
   The selected fusion profiles in **post-processing** and in the **image sequence editing area** are identical and are changed synchronously in both areas when a different profile is selected. As long as no individual profile is saved, no specific profile is displayed.

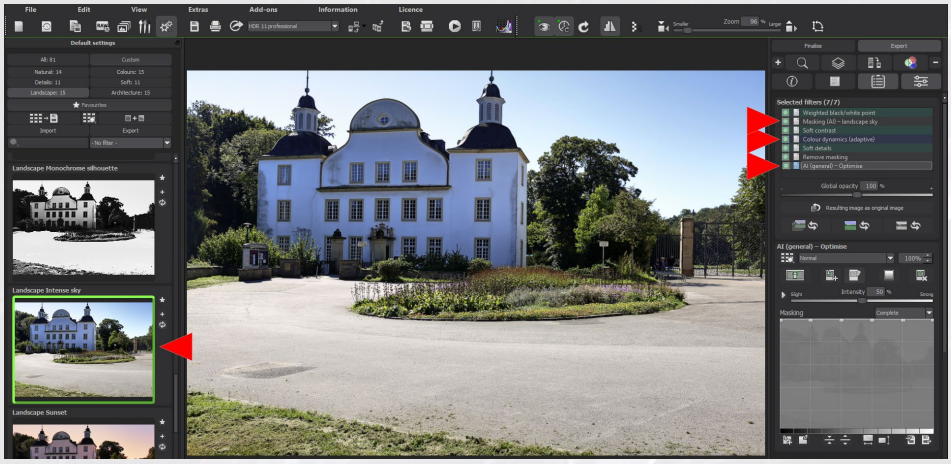


3. **Fusion algorithm area**: If you show this module, the same motion algorithms as in the **Edit image sequence area** are displayed. **Remove motion (multipass)** is set by default. If you select a different algorithm, it is changed synchronously in both areas.
   Clicking on the button or the small arrow next to it will list all motion algorithms.
   By clicking on the **browser icon**, you can view the different effects of each method.
4. **Intelligent colour space**

Bottom row:

5. **Optimisation assistant.**
6. **Virtual micro-details.**
7. **Grain module.**
8. **Selective drawing.**
9. **Colour module.**
10. **LUT-module**.
11. **AI training area.**
12. **Sensor error correction.**
13. **Focus peaking analysis area.**

3. Presets



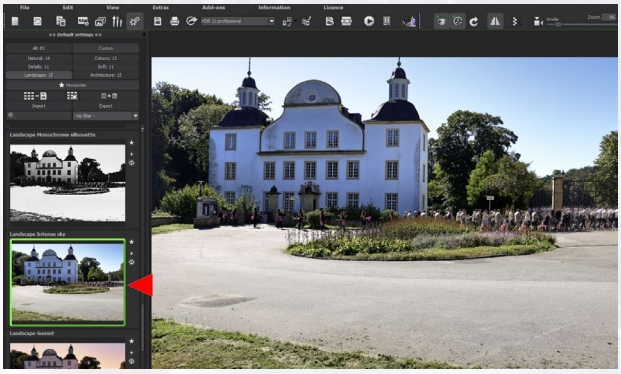
After loading an image sequence, as in most other **Accelerated Vision programmes**, you have the option of selecting a desired image look from the various preset categories by choosing a preset, for example, **Landscape Intense Sky**.

If you want to understand which effects are 'responsible' for the selected image look so that you can adjust them to your personal taste if necessary, switch to **expert mode** and view all effects belonging to the **Landscape Intense Sky** preset in the list of selected effects.

In most presets, **AI effects** such as **AI Optimise**, i.e. effects that have been trained with neural networks, ensure an optimised result image. In the image example, the other image-defining effects are **Colour Dynamics (adaptive)** and **Masking (AI) Landscape sky**.

Note: The general handling of presets, 'reading' and modifying default settings in **expert mode**, and creating your own presets is described in detail in the **Presets guide**.

Here you can see two special features:

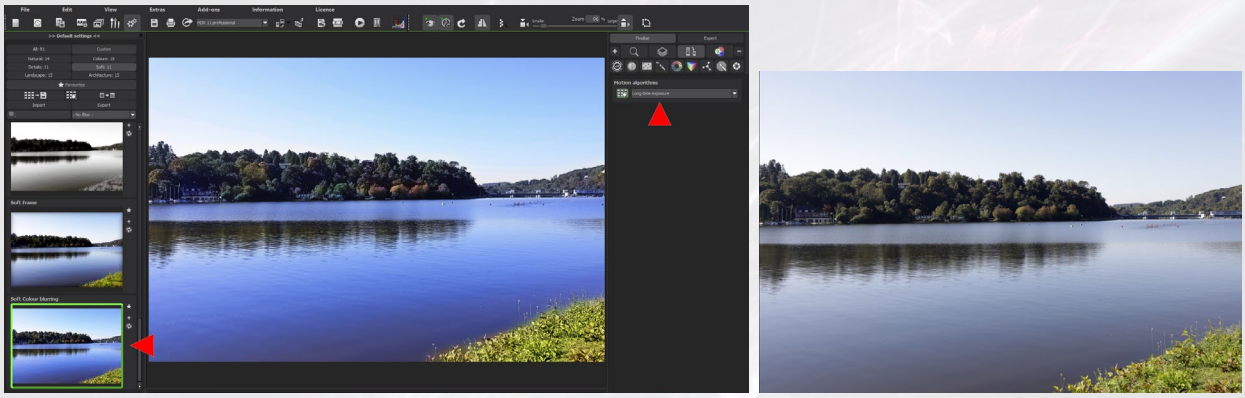


Comparison with the fusion image (in the example with the Add motion algorithm): Right-clicking on the image does not show the original as usual, because there is no original image, but rather the comparison with the **fusion image** that was created in the **Edit Image Sequence** area (graphic on the right).

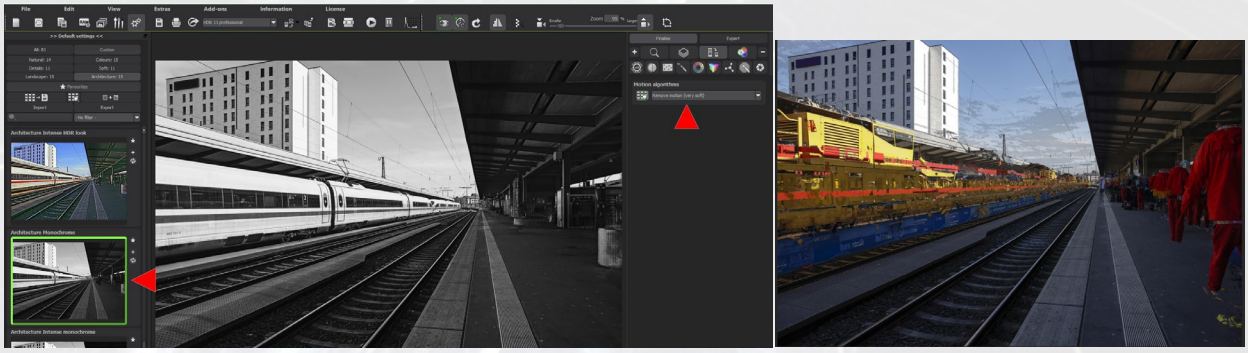
2. Special feature: The **Natural Original preset** is identical to this fusion image because there are no active effects in this preset.

Selected preset examples with different motion algorithms

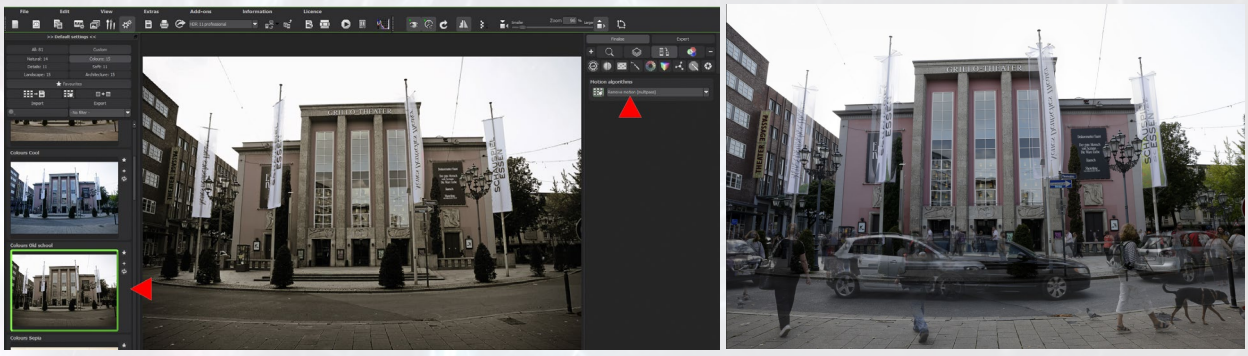
The following examples with selected presets and various motion algorithms demonstrate the impressive variation options for your imported image sequences.



Example 1: Preset **Soft Colour blurring** with the motion algorithm **Long-time exposure** compared to the original with the same algorithm.



Example 2: Preset **Architecture Monochrome** with the motion algorithm **Remove motion (very smooth)** compared to the algorithm **Add motion (colour)**.



Example 3: Preset colours Old School with the motion algorithm Remove motion (multipass) compared to the algorithm Add motion (soft).

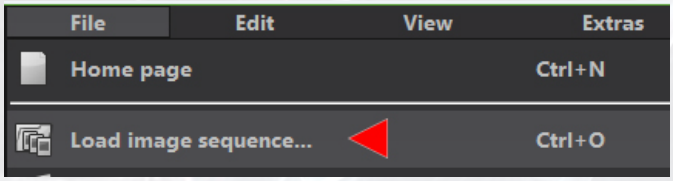
4. Flash workflow with an image sequence

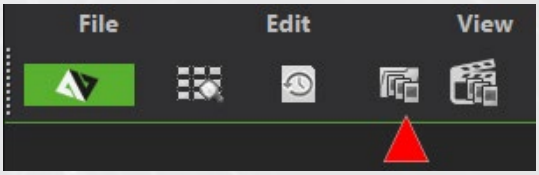
If you rely entirely on the automatic mode, you will obtain **a very good, convincing result in just a few steps**.

Step 1: Load image sequence.
Step 2: Confirm preset or select alternative.
Step 3: Save and/or crop the image beforehand or select scaling suggestions – done!

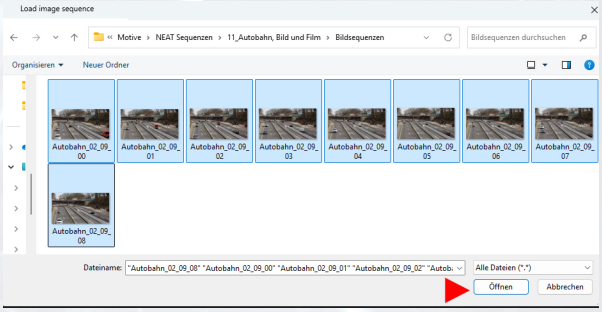
Step 1: Load image sequence

There are several equivalent ways to load image files and drag them into the programme window, which are described in the **General Files guide**.
When loading an image sequence, you can choose the method that is most convenient and fastest for you:

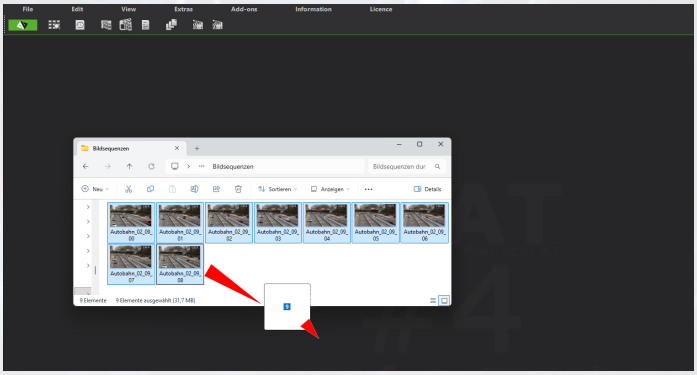




1. **Load file/image sequence:** Click on **Load image sequence** in the file menu or the button on the start page to select the folder of your choice in the window that opens …

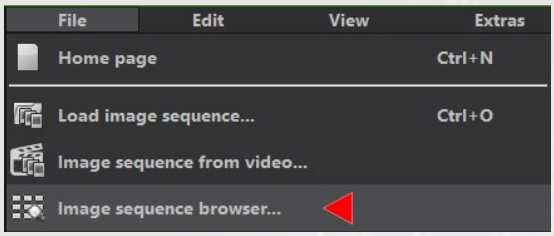


… the desired images and load them into the programme window by clicking on **Open**.

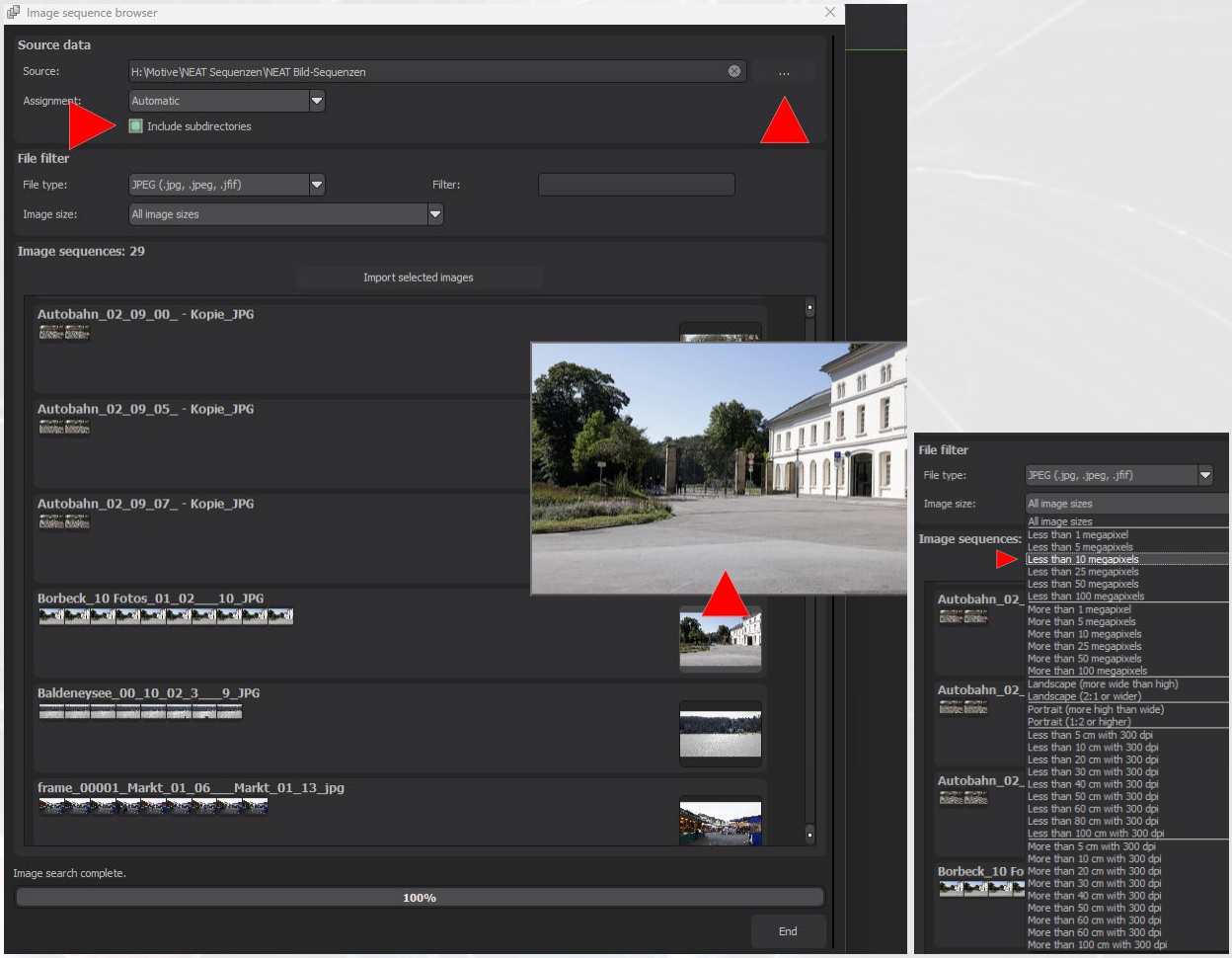


2. **Drag & Drop:** With this method, open the folder in Explorer, select the desired images, and simply **drag and drop** the files into the programme window by holding down the left mouse button.

3. Import via the browser



By clicking on the **Image sequence browser** in the file menu or the **browser icon** in the toolbar ...

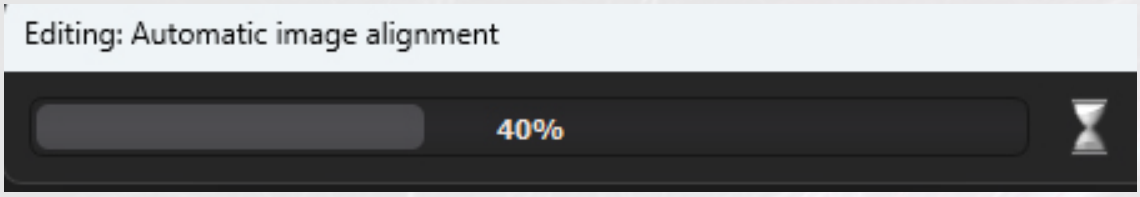


... the window with the **image sequence browser** opens. Here, click on the three dots to the right of **Source** to select your image sequence folder and include all **subdirectories** if necessary. Two **file type filters** are also useful. Often, JPG, TIFF and RAW series are stored together in one folder. For example, if you enter **JPG** in the **file type field**, only the **JPG sequences** will be displayed and you will no longer have any duplicates.

If you want to narrow down your selection further, click on **all image sizes** and you can filter the image sequences, e.g. larger or smaller than a desired **megapixel** number or **cm unit** of measurement.

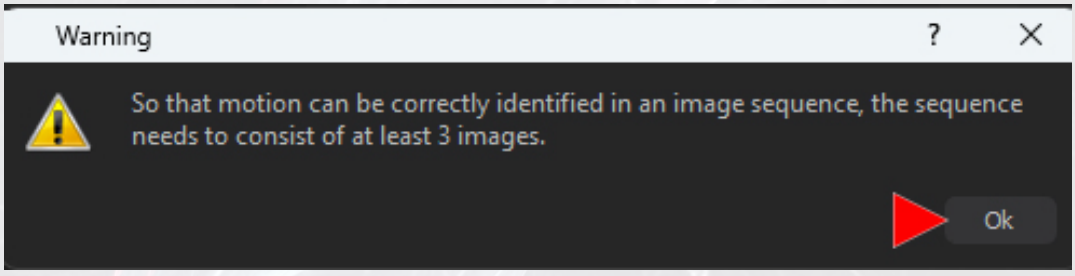
Enlarge miniature: Move your mouse over the preview image to enlarge it.

Load image sequence:

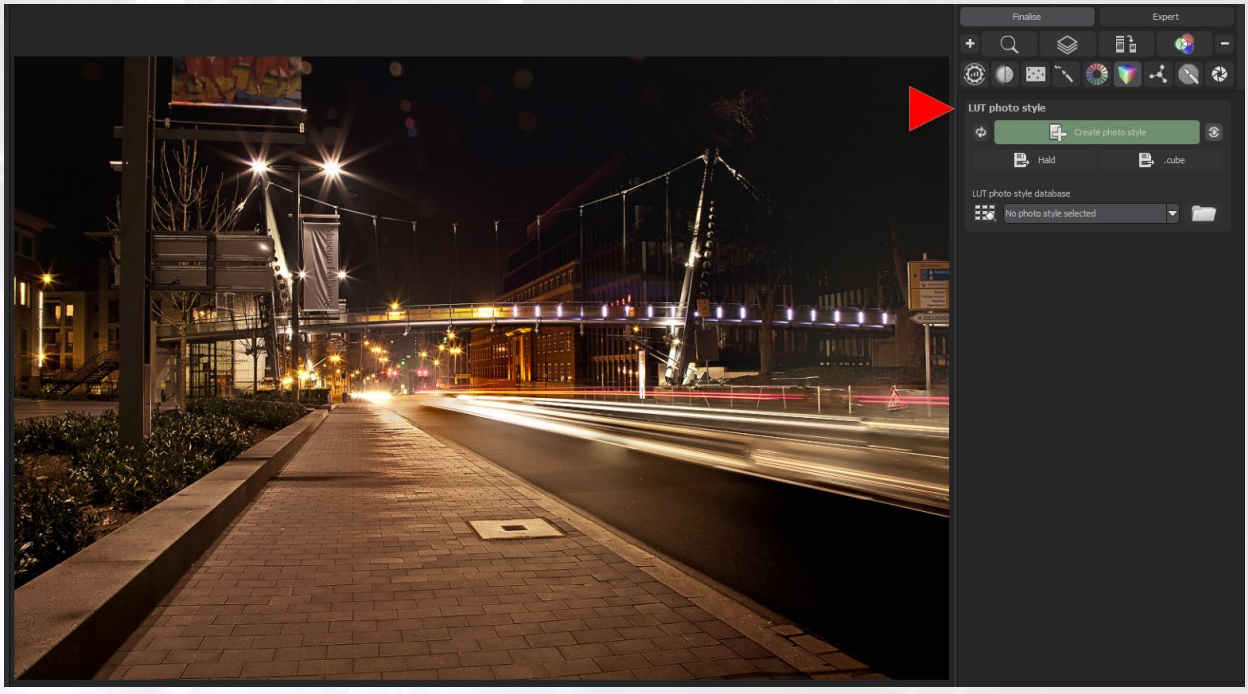


Double-clicking on the thumbnail (or enlargement) of a desired image sequence imports it with the displayed information **Editing: Automatic image alignment** and other preparations.
This information is displayed for all three methods described.

4. Special case: Loading a single frame

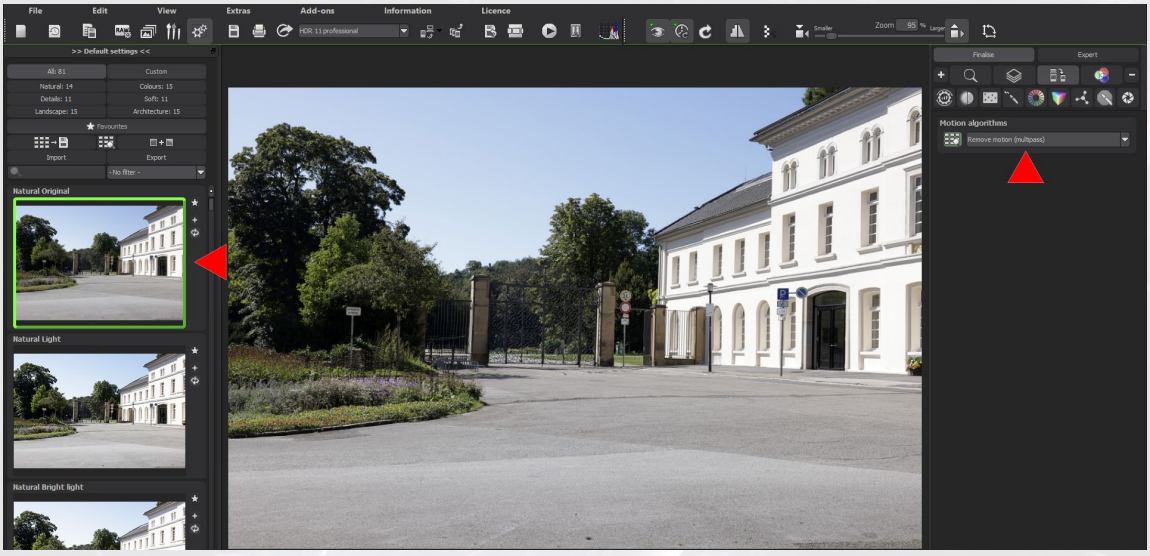


If you want to load a single image in order to use only the image editing modules, a warning message will appear stating that the image sequence must consist of at least 3 images. By clicking OK, you can “ignore” this message, ...

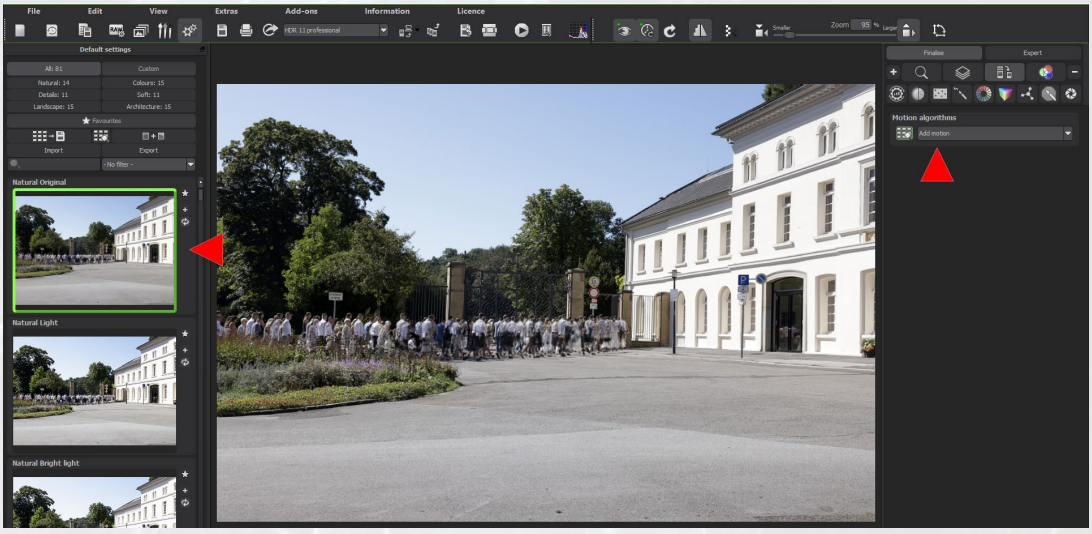


... then the desired single image is imported, which you can edit in one of the modules offered, e.g. LUT Photo Style, or save in a desired scaling preset, for example for Instagram.

Step 2: Confirm the preset or select an alternative



After loading an image sequence, you will see the result image with the default algorithm **Remove motion (Multipass)** and the preset **Natural Original**, which shows the **fusion image** because there are no active effects in this preset.

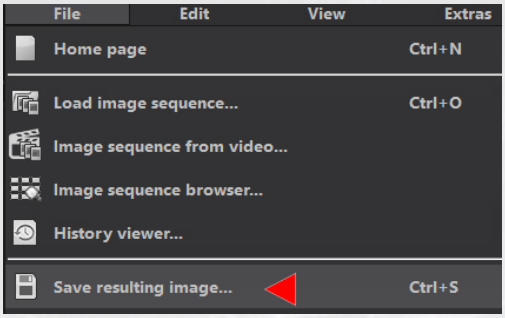


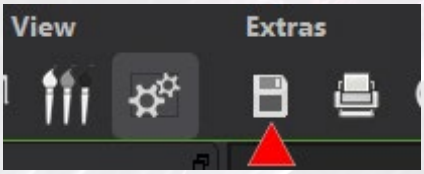
If you want to quickly assess which movements of a wedding party **NEAT** has eliminated very effectively in this image sequence with 10 individual images, you do not need to switch to **Edit image sequence**, but rather display the **Fusion Algorithms area** in **Post-processing** and select **Add Motion**, for example. This choice of motion algorithm is always changed **synchronously in post-processing and Edit image sequence**, and switching between different algorithms allows for quick assessment of the desired image effect.

If you are satisfied with the automatically calculated result image, save it in the next step and you have completed the flash workflow.

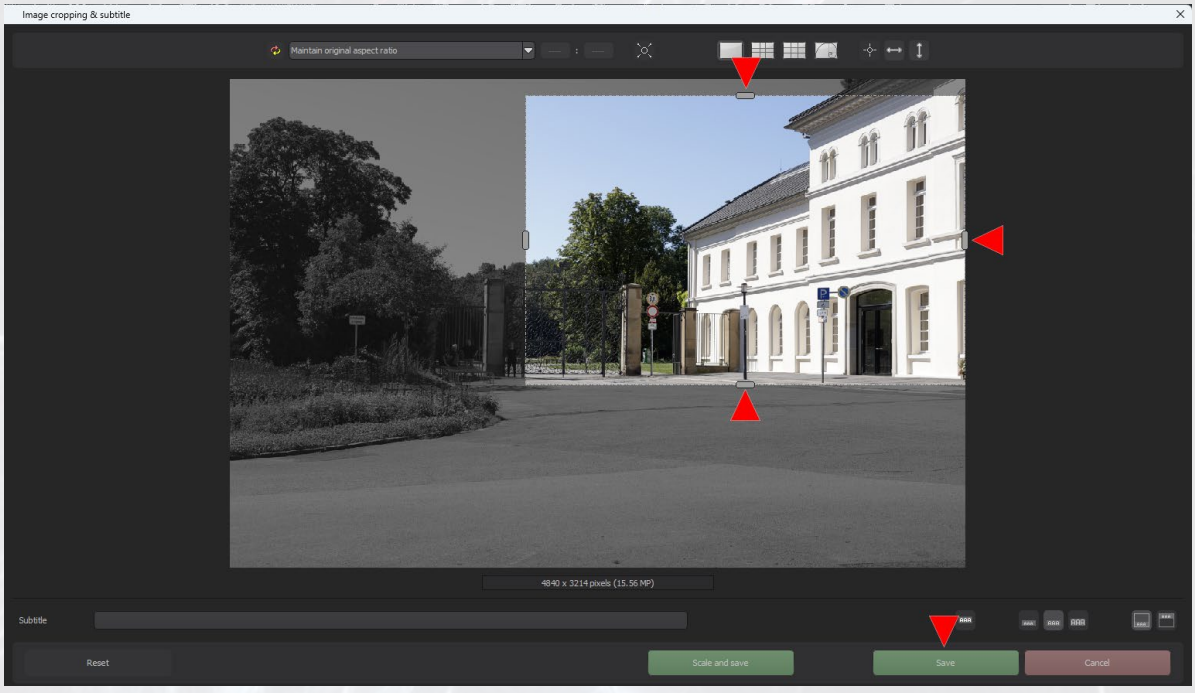
If you would like to try out other presets in the same or other categories, click on them to try out different presets that may better suit your individual preferences.

Step 3: Save the result image, crop it or use the scaling options

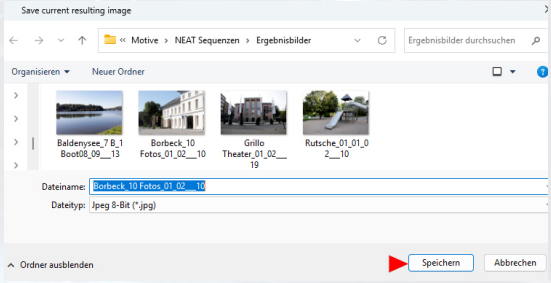




By clicking on **Save resulting image** in the File menu or the **Save resulting image button** in the toolbar ...



... switch to the **Image Cropping & subtitle** window, where you can crop the image and/or add a caption if necessary.
Scale and Save offers the option of using various scaling presets, e.g. for social media formats, before the image is saved. Click on the **green Save button** ...



... save the image in a folder of your choice.
This completes the flash workflow in three steps.

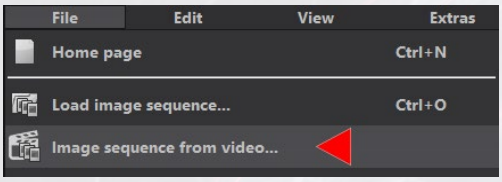
Note: All image cropping and scaling options are described in detail in the **General Functions guide.**

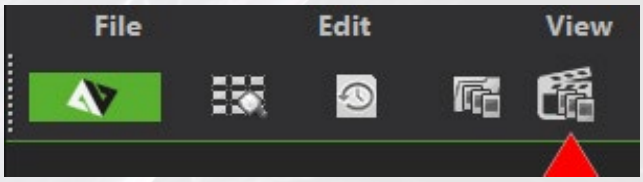
5. Flash workflow with a video sequence

Flash workflow with a video sequence (and all advanced workflows) is identical to the flash workflow with an image sequence, except for the **import of a video** file.

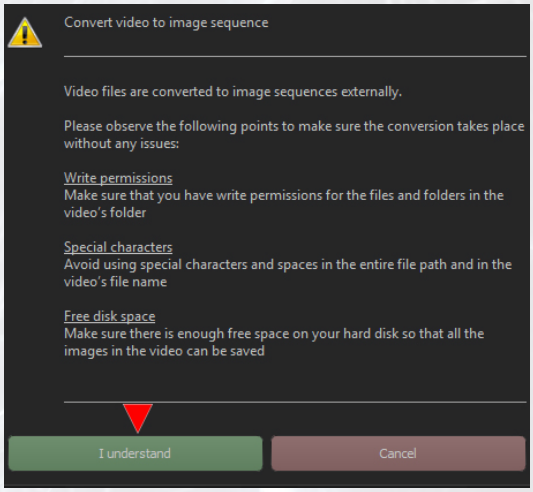
Load video file

There are several equivalent ways to load image files and drag them into the programme window, which are described in the **General Files guide**.
When loading an image sequence, you can choose the method that is most convenient and fastest for you:

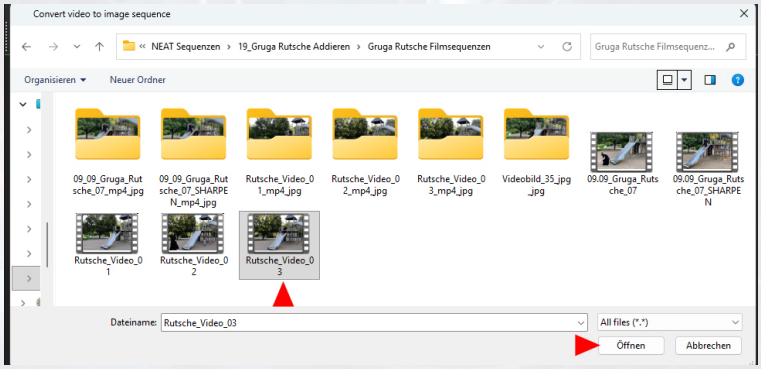




1. **Load Image sequence from video:** Click on **Image sequence from video** in the file menu ...

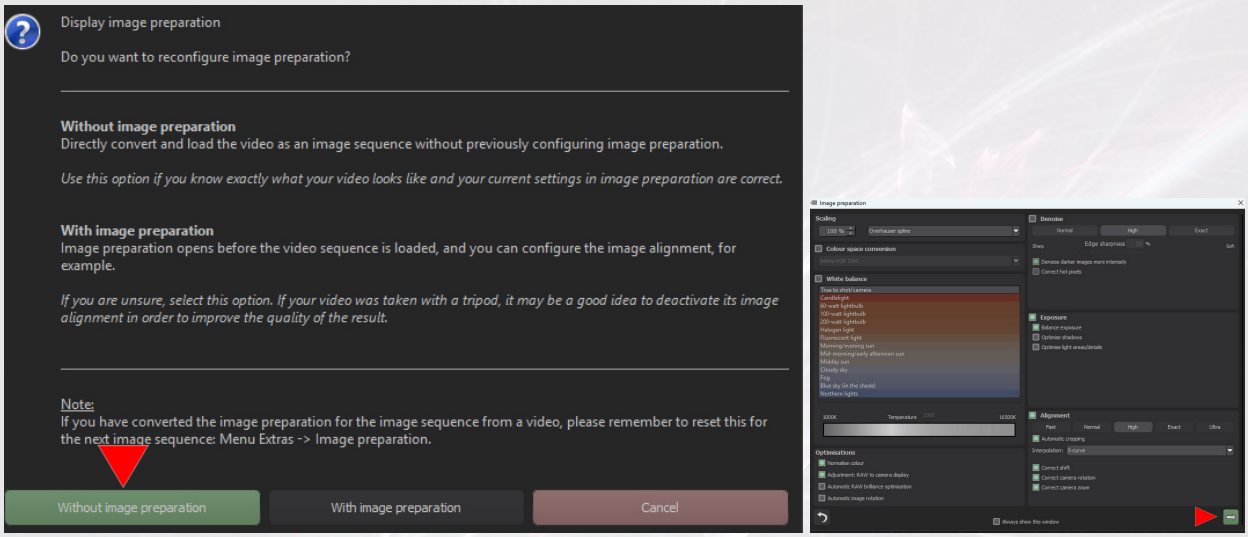


... various query windows will open, which you can either confirm, cancel or make decisions about. In the first window that appears, confirm the information by clicking on the green **I understood button**.

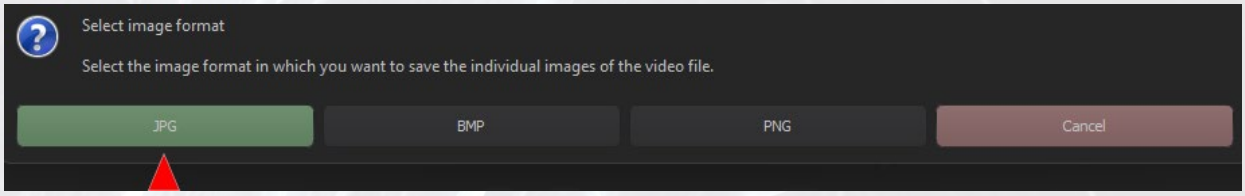


In the folder that opens, containing the saved video files, select the desired video and click **Open**.

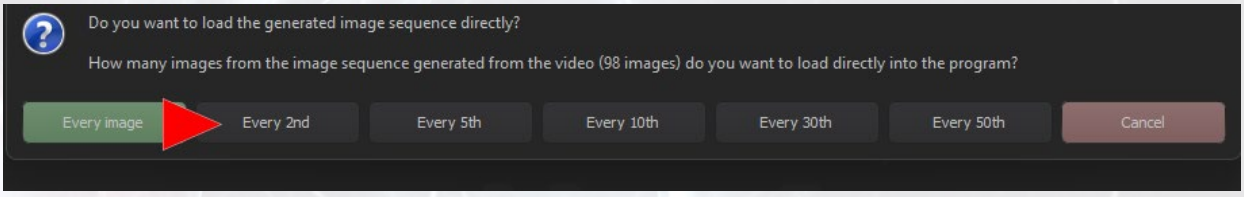
Further query windows



In this query, by clicking on **Without image preparation**, you decide that the video will be converted directly into an image sequence, which is the default setting.
Clicking on **With image preparation** opens the **Image preparation** window, where you can make individual settings as required and confirm by clicking on the green arrow. It is usually advisable to click on **Without image preparation**.



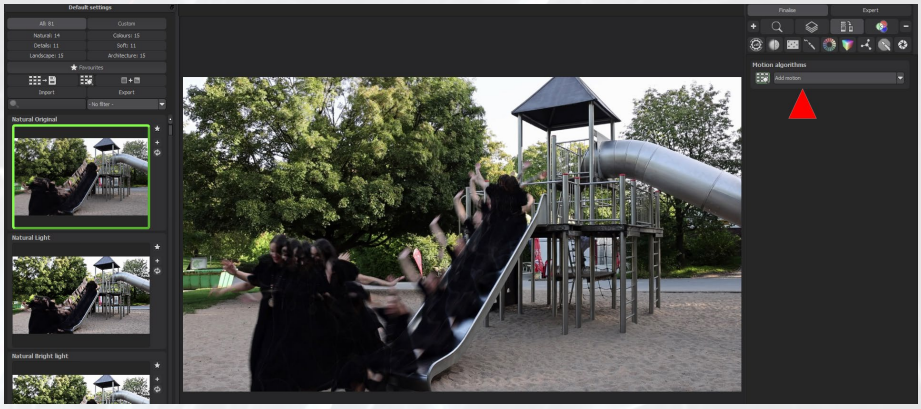
In the next query window, you can choose between different file formats. If you decide, for example, to use the default format **JPG**, click the green button again...



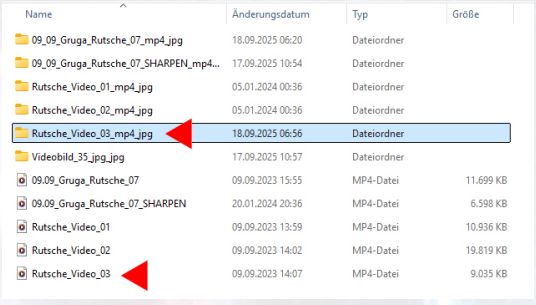
... and must make the final decision. The default setting is Every image, which in the example would mean that every image should be loaded directly, i.e. **98 out of 98 images** in the example.
Particularly for larger video files with a large number of images (frames), it is advisable to use one of the other options and reduce the number of converted images.
Once you have made your selection by clicking on the desired button, in the example **Every 2nd image**, you will see the result image in post-processing as usual (next page), which in this case was calculated from **49 frames**.

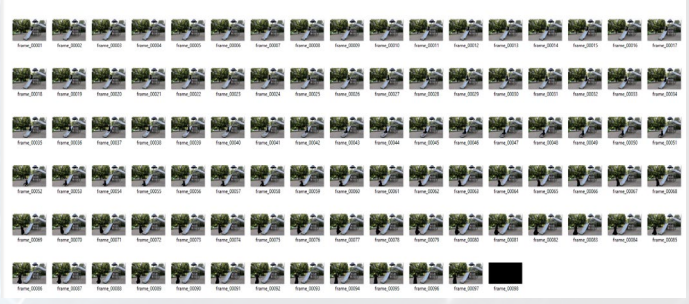
Display result image

Even after a video file has been imported, the merged image is displayed using the default **Remove motion (multipass)** algorithm and the **Natural Original** preset ...



... and when switching to **Add motion**, you can see, as with an imported image sequence, which movements **NEAT** effectively and perfectly eliminates or emphasises from video sequences.



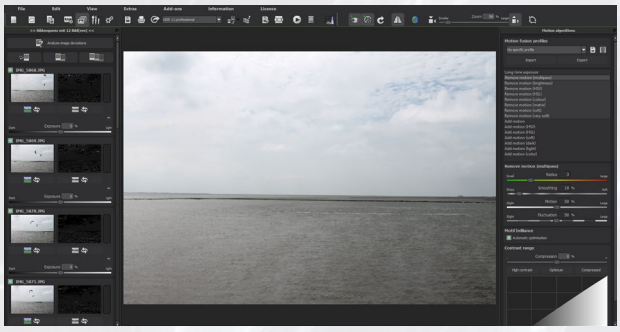


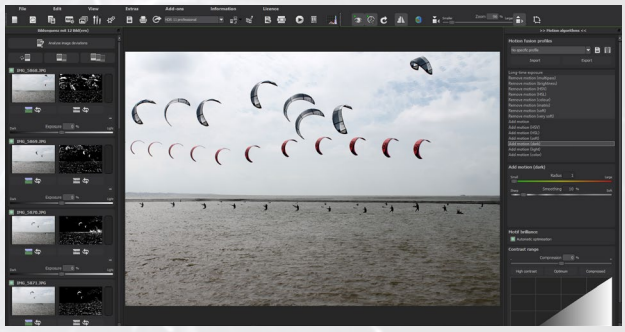
Automatically created folder with all frames: At the same time, another folder containing all frames (98 in the example) is created in the folder from which you loaded the video file (see graphic on the right), from which you can select the desired individual images if required. If you do not need this option, the folder can also be deleted.

The subsequent processing steps are identical to the flash workflow with an image sequence.

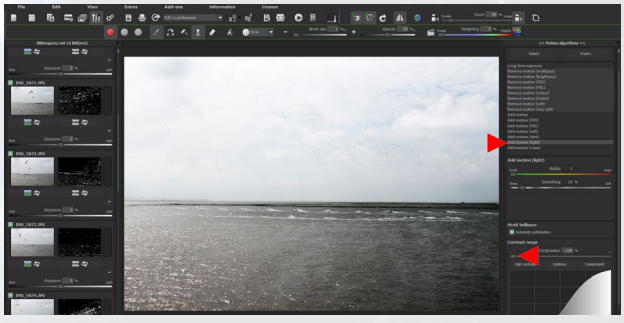
6. Manually editing image sequences – Introduction

As we have seen, the automatic mode with all standard settings delivers good to very good results in many cases. Even for shots taken without a tripod, the automatic image alignment ensures very good results, which is a guarantee of success in today's world, where most photos and videos are taken with mobile phones.
After loading an image or video sequence, the automatic mode displays the result with the default settings **Remove Motion (Multipass)** for the **motion algorithms** and **Natural Original** for the **presets**.
The preceding chapters you have seen that in Post-processing you can quickly vary the image statement from slightly to significantly by selecting a different preset or switching to a different motion algorithm.



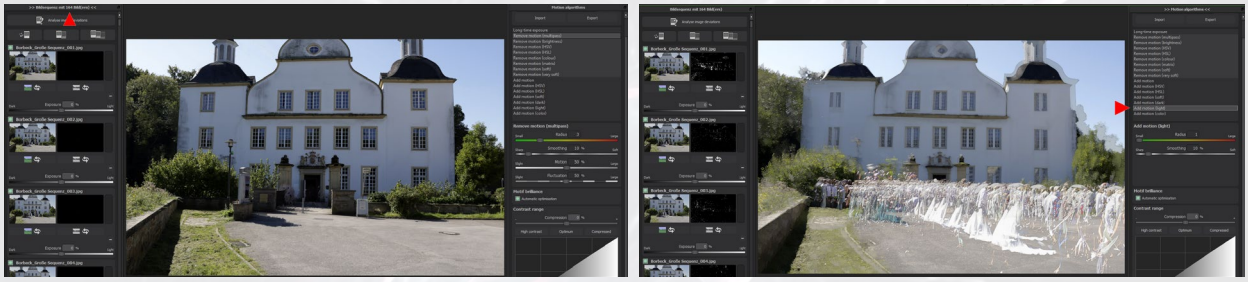


In the areas of **Edit image sequence**, the **'heart' of the programme**, and **Edit weights**, you have numerous options at your disposal with which you can individually and intuitively optimise your image or video sequence according to your personal taste, correct unwanted image parts, or realise creative and unusual image ideas, especially with the additive motion algorithms.
The quality of the resulting image, as you see it in post-processing, is determined exclusively in these areas.

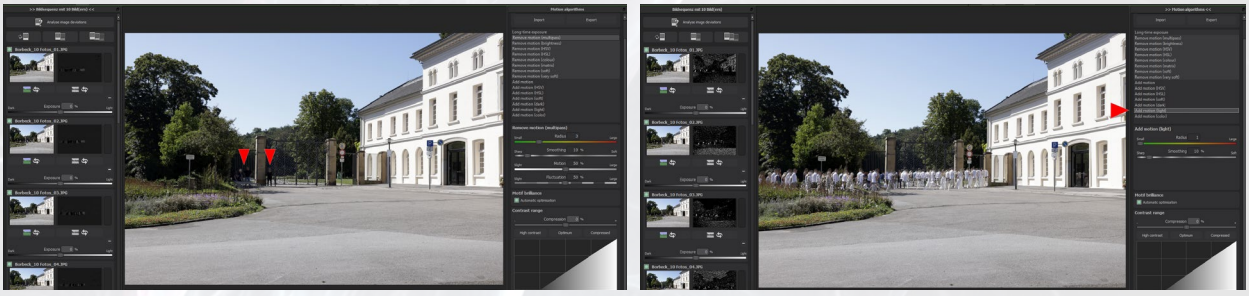


Here you can virtually look over the shoulder of the process of how movements are effectively removed or added, and either follow the automatically generated result or intervene interactively and use the numerous design options.
The visualisation of movements in the additional modules Image Sequence Player and **Motion map** impressively show the individual movement sequences in animation or as a 'thermal image'.

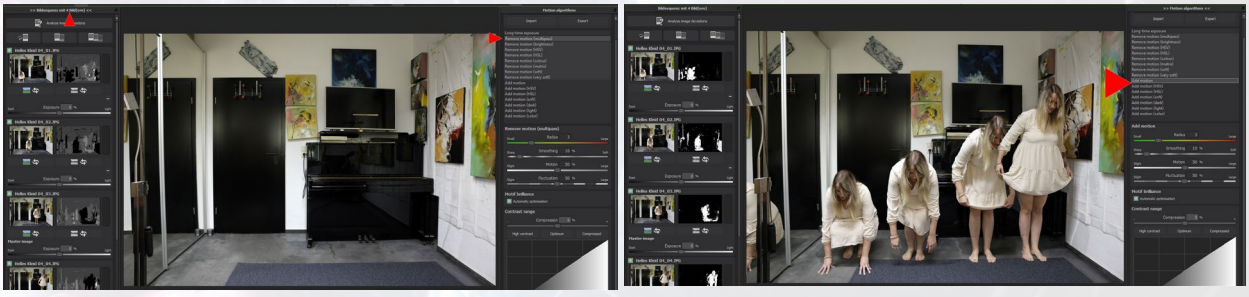
Photography tips as a guide: A tripod is always better than shooting freehand. In an age where mobile phones have largely replaced cameras and snapshots have replaced planned photography with a tripod, this rule is rarely practical.
NEAT cannot compensate for severe camera shake, so a steady hand is always helpful, but thanks to automatic image alignment, even sequences of images taken handheld produce good results.



The more movement there is in a scene, the more images are needed for clean calculation as in the example with**164 images**.



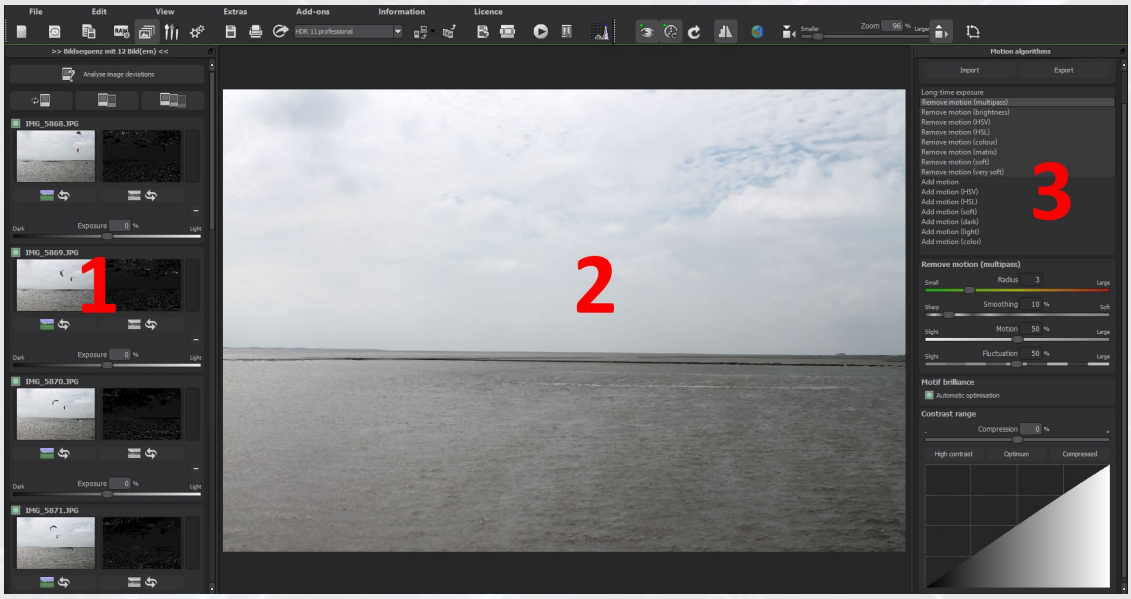
In order for all movements to be calculated out, at least **one image** in a sequence of images or video **must be without a person** or other unwanted movement. If, for example, people have **not moved** during the recording period, as shown here in the image sequence with 10 images of people at the gate, **NEAT** cannot remove them, of course, and they must be removed using **sensor error correction**, for example, if necessary.



The **minimum number of images is three** (4 images in the example), because with **one image** there is no movement to calculate (**NEAT** is not a cropping programme) and with two images the programme cannot recognise which of the two images is the ‘correct’ one.
When in doubt, more images are better than too few. With 10 to 20 images as a guideline, you will achieve good to optimal results in most situations.

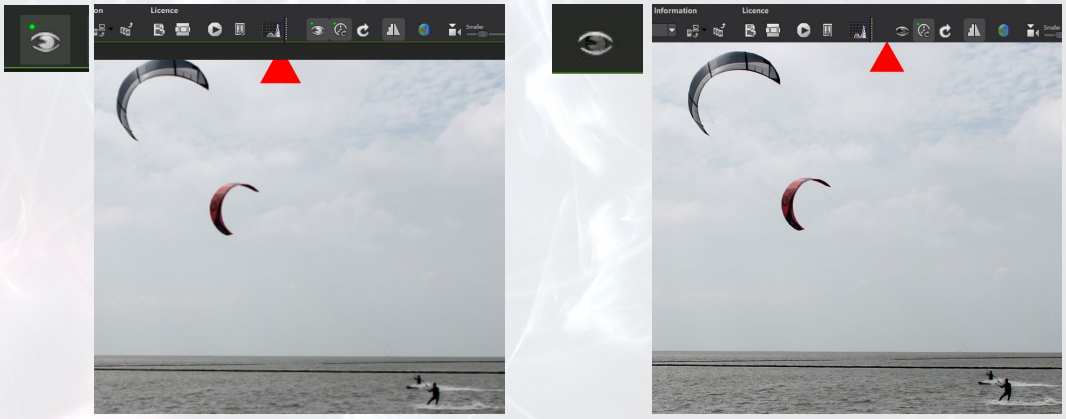
7. Edit image sequence – Interface overview

By clicking on the **Edit image sequence** button...



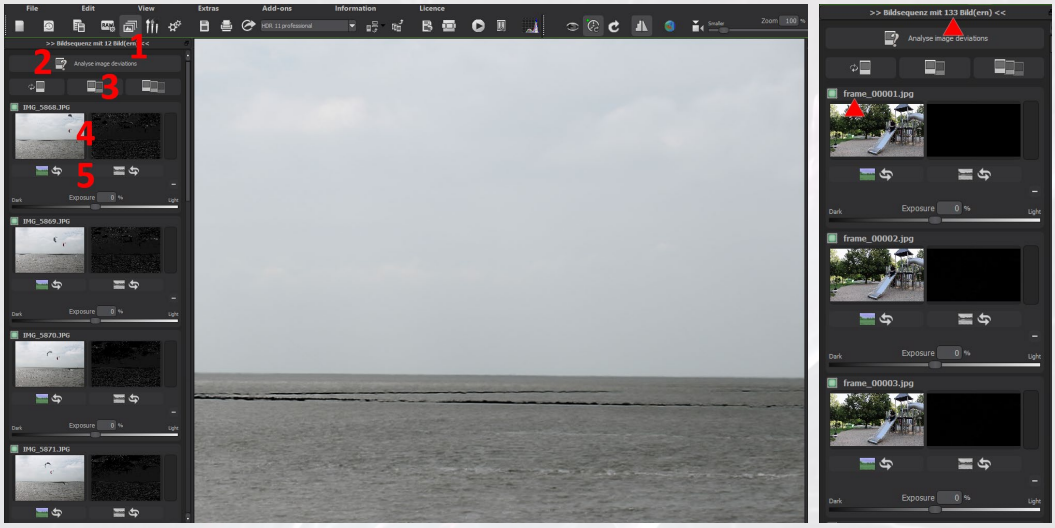
... switch to the **NEAT Fusion interface** with its three main areas:

1. **Merge area: Image or video sequence with all individual frames.**
2. **Merged image in the preview window** with the default motion algorithm **Remove Motion (Multipass).**
3. **Algorithms** and other modules.



Note: In the fusion area, it often makes sense to switch off the fast preview mode (graphic on the left) by clicking on the button with the eye symbol in order to better assess any 'weak points' that need to be corrected. Now all calculations are performed at full image size and all details are visible. Disadvantage: longer calculation times, especially for sequences with a large number of individual images.
The image sequence was provided by developer Michael Piepgras.

Overview of image sequence with individual images



1. **Display of the number of individual frames in the loaded image or video sequence.**
   Notes: The order of the image files is arbitrary because **NEAT** recognises movements from the and not from the sequence (order) of images.
   differences between images as a whole.
   When a **video sequence** is loaded, the **frames** are displayed in ascending order (graphic on the right).

2. **Analyse image deviations** (see relevant chapter).

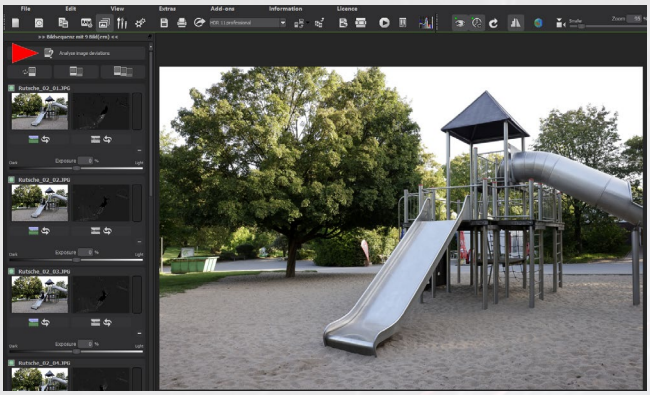
3. **Three options for how many images are active and included in the calculation.** By default, the first button is active, which means that all images in the image sequence are included in the calculation, as indicated by the green box in front of each individual image. Clicking on the middle button activates only **every second image** for the calculation. The green box now turns grey for every second image. Clicking on the third button means that only **every third image** is included in the calculation.
   Here you can quickly check which result image you would have obtained if, for example, you had only included every second or every third image from 30 shots. If the result is just as convincing, the subsequent calculation times will be faster. Otherwise, click on the button that achieved the best results.

4. **Thumbnail (preview) of an image or video sequence,** with the corresponding **weighting matrix** (mask) and the weighting parameter exposure to the right.

5. **Options to open the Selective Drawing transfer window** and transfer the **current frame** (left) or **mask** (right) directly to one of the composing layers (**image**) or as a **mask** to any layer in **Selective Drawing** (see chapter **Transfer Window**).

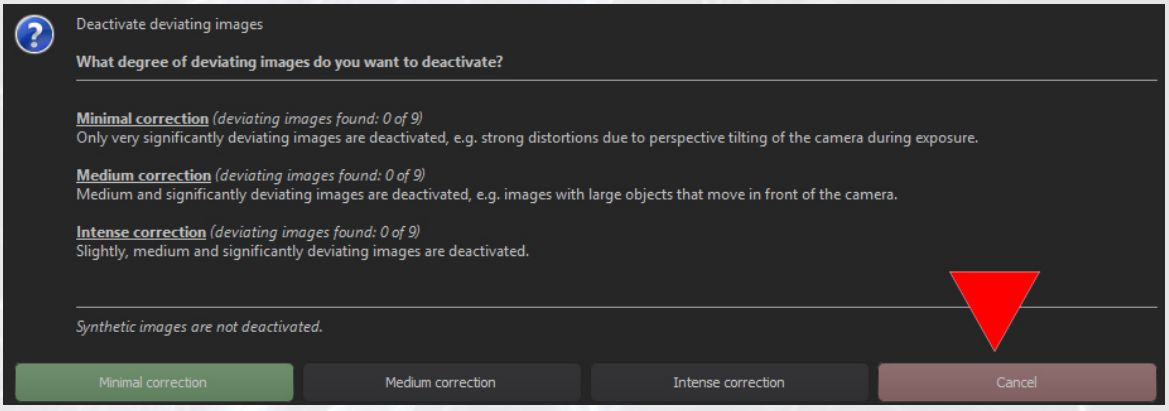
Note: The overview on the right-hand side with the **algorithms** is presented in the chapter **Algorithms and other modules**.

8. Analysis image deviations



The **Analyse Image Deviations** feature is very helpful. It analyses the image or video sequence for significant 'disturbances' and searches for images that deviate significantly from the actual motion sequence, e.g. a blurred image in shots taken by hand, and offers the option of **automatically deactivating** these images.

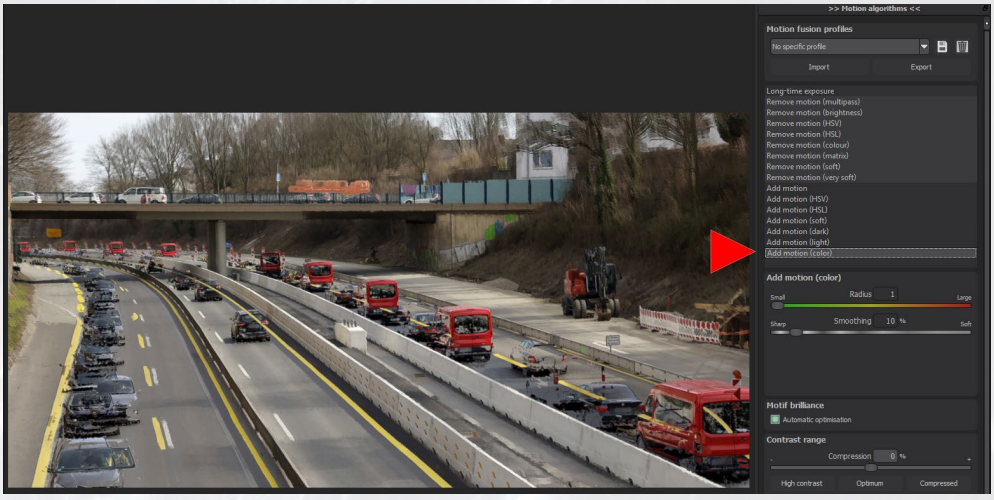
Example 1: No deviations



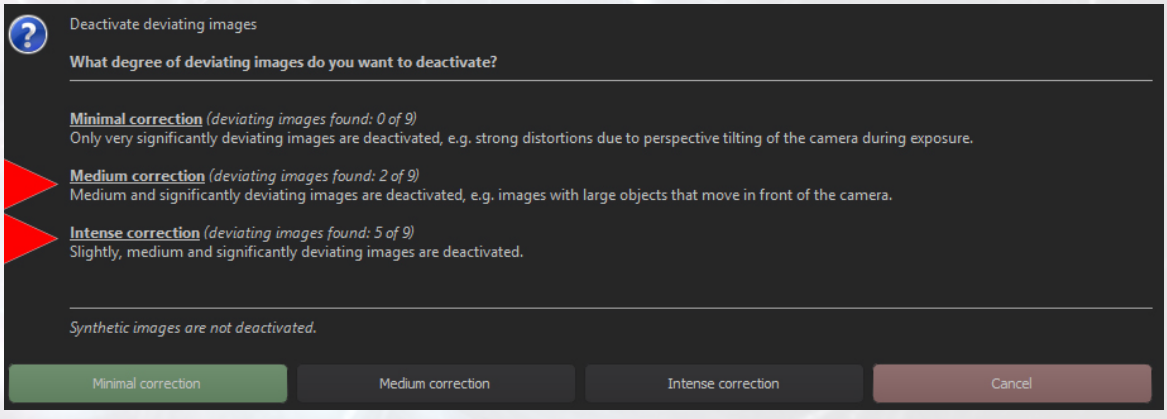
Clicking on the **Analyse image deviations button** opens the analysis window. This analysis takes into account **three stages** in its proposal as to which images should be deactivated in order to achieve a better result image:
Minimal correction: With this analysis and the default setting **Minimal correction** with the green button, images that show **significant deviations**, e.g. due to camera shake or severe distortion, are suggested for deactivation.
Medium correction: Images showing **medium to significant deviations** are suggested for deactivation.
Intensive correction is the most comprehensive option and lists **all images** with **slightly, medium** and **significant deviations.**
In this example of a sequence of nine images taken with a tripod, **no** 'disturbing' images were analysed and suggested for deactivation.
By clicking on **Cancel**, you will return to the overview.

Example 2: Image sequence with deviations

In this sequence of images, consisting of nine individual photographs taken by hand...

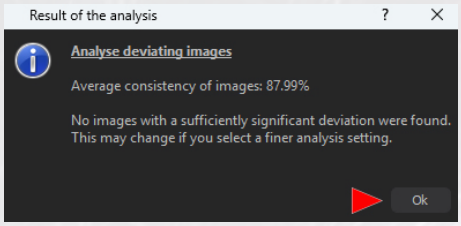


... and with the algorithm **Add Motion (Colour)** clearly shows the individual movements during the recording period, ...

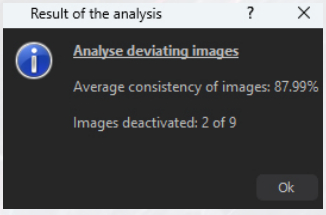


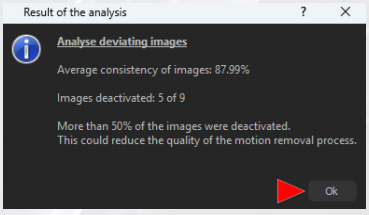
... **NEAT** arrives at a completely different analysis result:
There are **no significant deviations** (Minimal correction), **2 out of 9 images** show **medium to significantly** deviations, and all deviating images have been analysed with **5 out of 9 images**.

Deactivating the analysed deviating images



Click on the green **Minimal Correction button**, although there was no error message in this area, a message will appear stating that no images with sufficient deviation were found. Confirm this with **OK** and return to the overview, or click on the **X** to hide the information window.

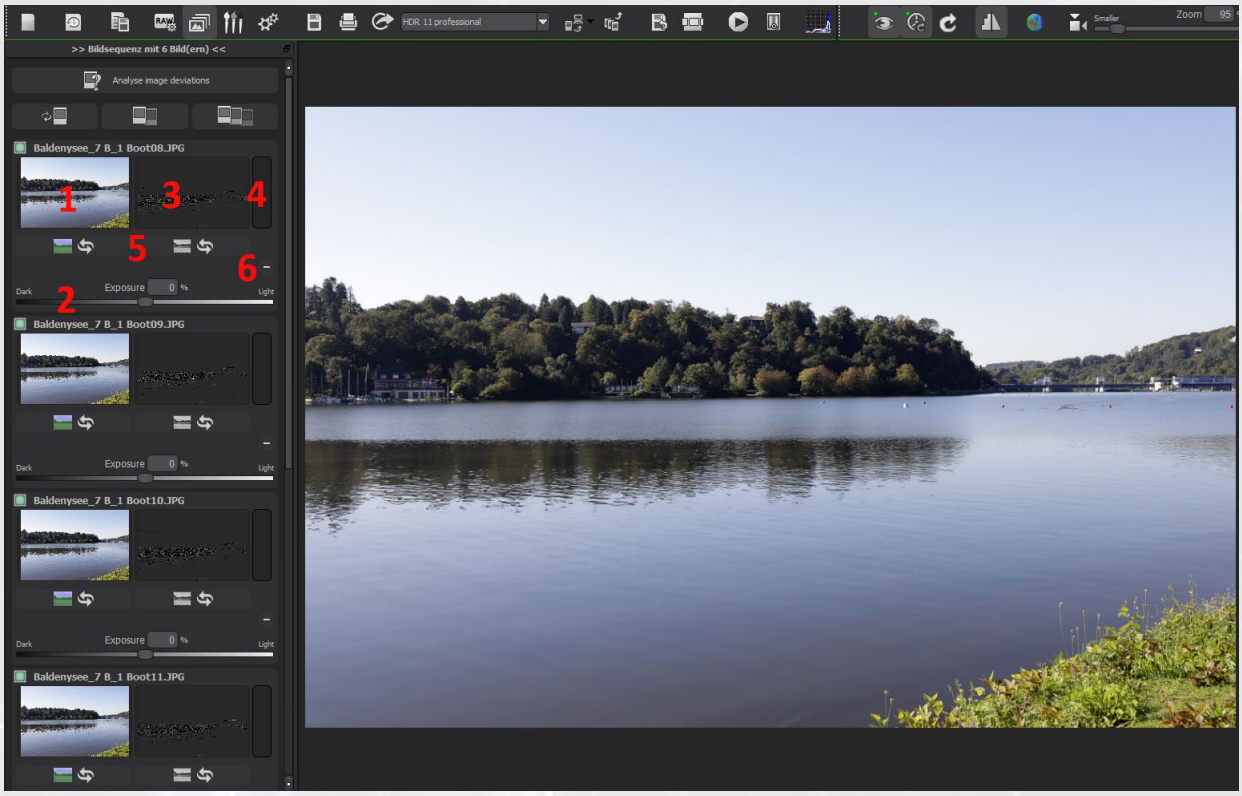




Clicking on the **Medium correction** button suggests deactivating 2 of 9 images.
Clicking on the **Intense Correction button** will display a “warning” message in addition to the suggestion to deactivate **5 out of 9 images**, stating that clicking OK will deactivate more than 50% of the images, which could result in a reduction in quality.
If you are unsure which decision will lead to a better result, first click on the middle button, evaluate the result, and then click on the right button.
Since the deactivated images remain in the listed image sequence, you can switch between all three options at any time.

In the example, **Intense Correction** was selected by clicking **OK**. All **deactivated images** can be recognised by the **greyed-out box** in front of the thumbnail, all **active images** as usual by the **green box** in front of the preview image.
The result is impressive despite the reduction to 4 images.

9. Views of the individual images of the image and video sequences



1. After switching to the **Edit Image Sequence area**, you will see a **preview thumbnail view** of **all individual images** belonging to the loaded image or video sequence on the left-hand side, as shown in example **6**.
   The individual images are listed in ascending order of file numbers.
   Each preview image includes:

2. An **exposure control** that can be used to influence **the exposure value (EV)** and thus the brightness of the individual image.

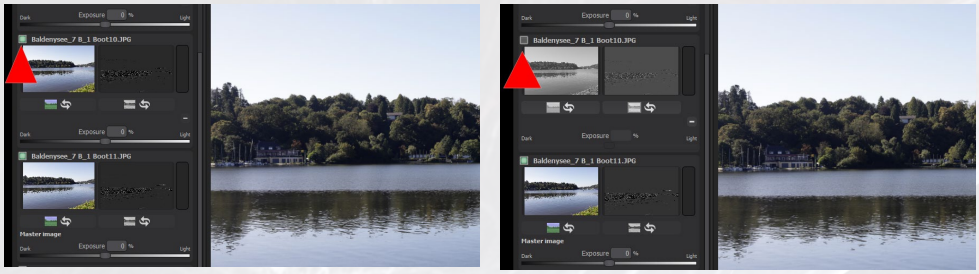
3. A **weighting matrix** associated with motion detection.

4. A button that allows you to select a **weighting colour** for the drawing mode in the **Edit Weights module**, e.g. to fix individual movements for the entire image sequence (see chapter **Edit Weights**).

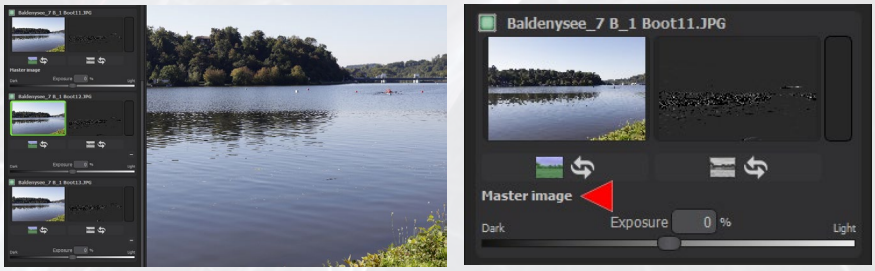
5. Buttons to open the **transfer windows of Selective Drawing** for **images** (left) or **masks** (right) (see chapter **Transfer Windows**).

6. A button to **delete** this image and exclude it from the calculation permanently.

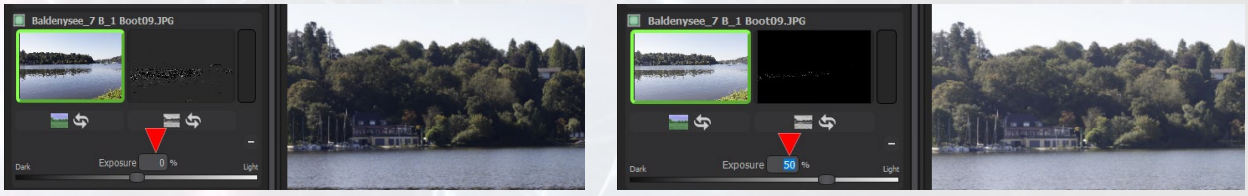
Display individual images in the preview window, additional displays and parameters



Temporarily exclude/include image from calculation: The **green button** in front of each individual image indicates that these images are activated and included in the calculation.
Clicking on the **green button** turns it **grey** (see graphic on the right) and excludes this image from the calculation. Clicking on the grey button again turns it green, and the image is once again included in the calculation.



Clicking on a selected preview thumbnail will **highlight the image in green** and display it in the large preview window in the centre.
Switching from a single image to a merged image: Clicking on the thumbnail again removes the green border and displays the merged image in the preview window.
Master image: The master image cannot be deleted (graphic on the right). It is usually located roughly in the middle of an image sequence and essentially serves as a reference point for all image alignments and brightness.

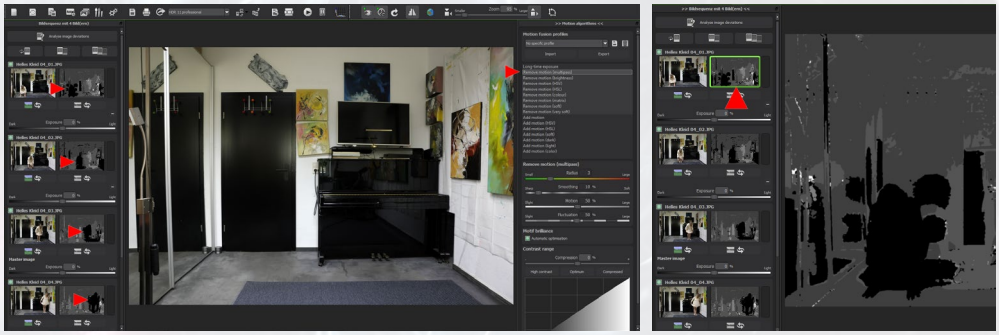


Exposure: Use this **exposure value slider** to adjust the **brightness** of the image. The default value is 0%. A **reduction of 50%** lowers the exposure value by **1 EV** (exposure value), which corresponds to **halving the amount of light**. Similarly, an **increase of 50%** would **double the amount of light**, as shown in the graphic on the right.
The visualisation in the mask shows a slight change compared to the matrix in the default setting, the preview image is **significant** and the fusion image has become **slightly brighter** due to the changed weighting.

Weighting matrix

For each individual image in an image or video sequence, the corresponding **weighting matrix visualises the areas that are given greater or lesser consideration in the calculation from the programme's perspective**. **Bright areas** are given **greater weighting** in the calculation than dark areas. These weightings are directly related to the selected **algorithms** and can be further customised using the corresponding parameters (see the **Algorithms chapter**).

For a better demonstration, a sequence of 4 images and the motion algorithm **Add Motion** has been selected. The model in the light-coloured dress moves from the black door to the black piano. The movements of the masks look accordingly and show a clear distinction between the light and dark tones.



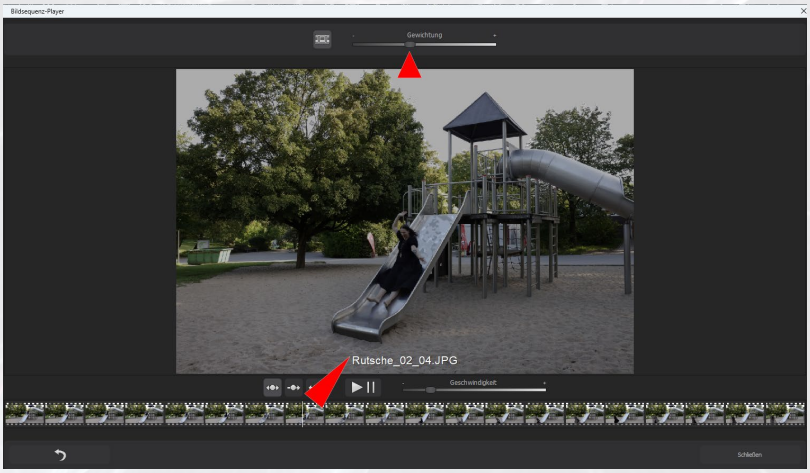
If you set the algorithm to **Remove Motion (Multipass)**, for example, the **bright areas** become **dark to black**, are **not included** in the calculation, and produce the desired result image **without motion**.

Display individual mask: Clicking on an individual weighting matrix highlights it in green (graphic on the right) and enlarges it in the preview window for better evaluation. For example, if you click on all the individual images one after the other from top to bottom, you can easily assess which individual images contribute most or least to the fusion calculation for different motion algorithms.

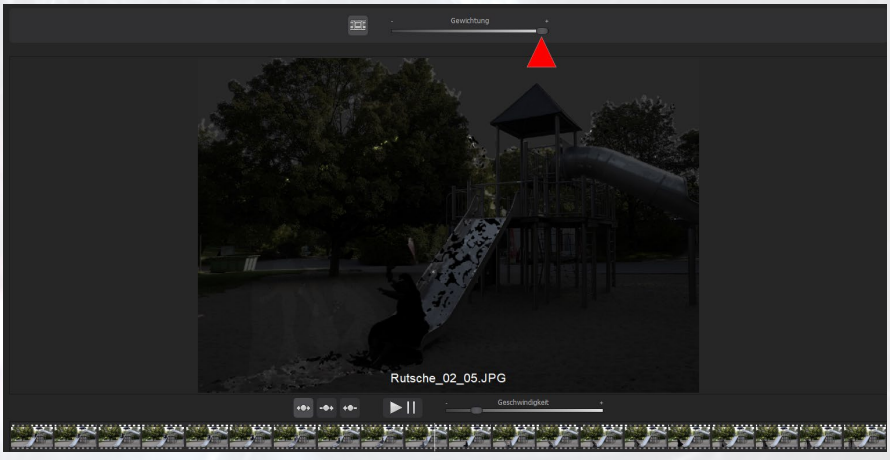
10. Quick overview of the image sequence with the player

You can see an even faster and animated overview of the individual images with the **Image sequence player**, which can be started from the toolbar in the post-processing and fusion areas and provides a **quick overview of all movements in a sequence**.

By clicking on the button with the **play symbol** ...

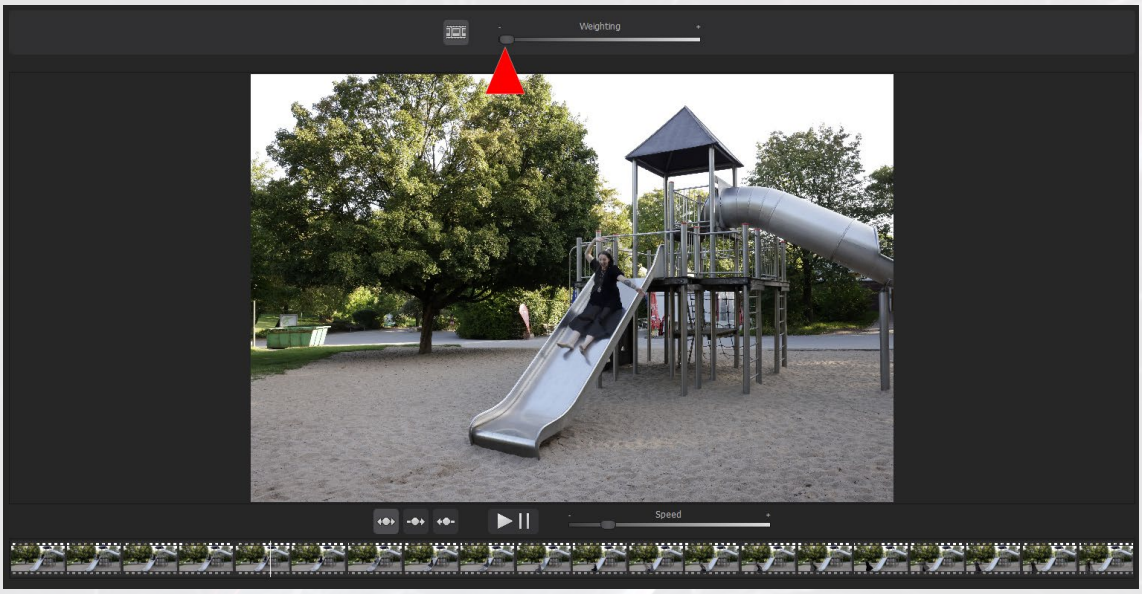


... the window with the player opens.
This image sequence player lists the same individual images from an imported image or video sequence (**9** in the example) in the bottom row from **left to right** as the fusion area lists them from top to bottom.
However, it offers several special features: The graphic shows a **combined view** of **weighting** and **image,** because the **weighting slider** smoothly blends both views as desired. In the example, the slider is positioned slightly to the left of centre and gives **slightly more weight to the image view** than to **the weighting view**.



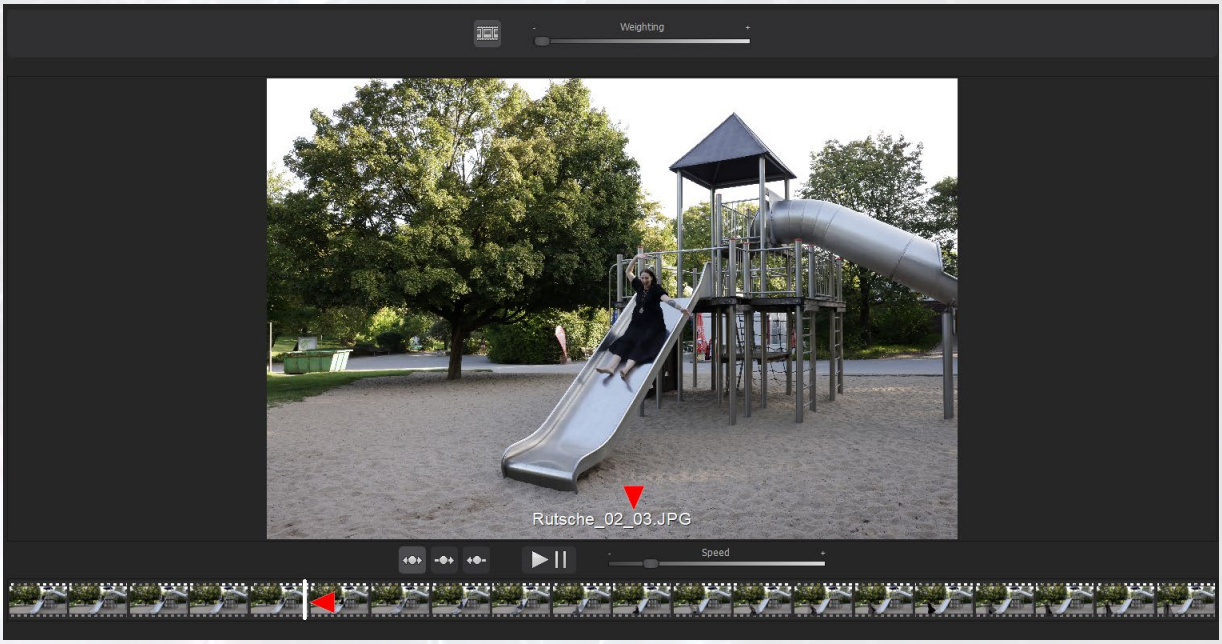
If the slider is set to the far **right**, only the **weighting** is displayed. In this setting, when scrolling through, you can quickly see where the programme has identified the areas that are more or less included in the calculation and which image areas are used by which image and added together in the fusion.

If the control is set to the far **left**, ...



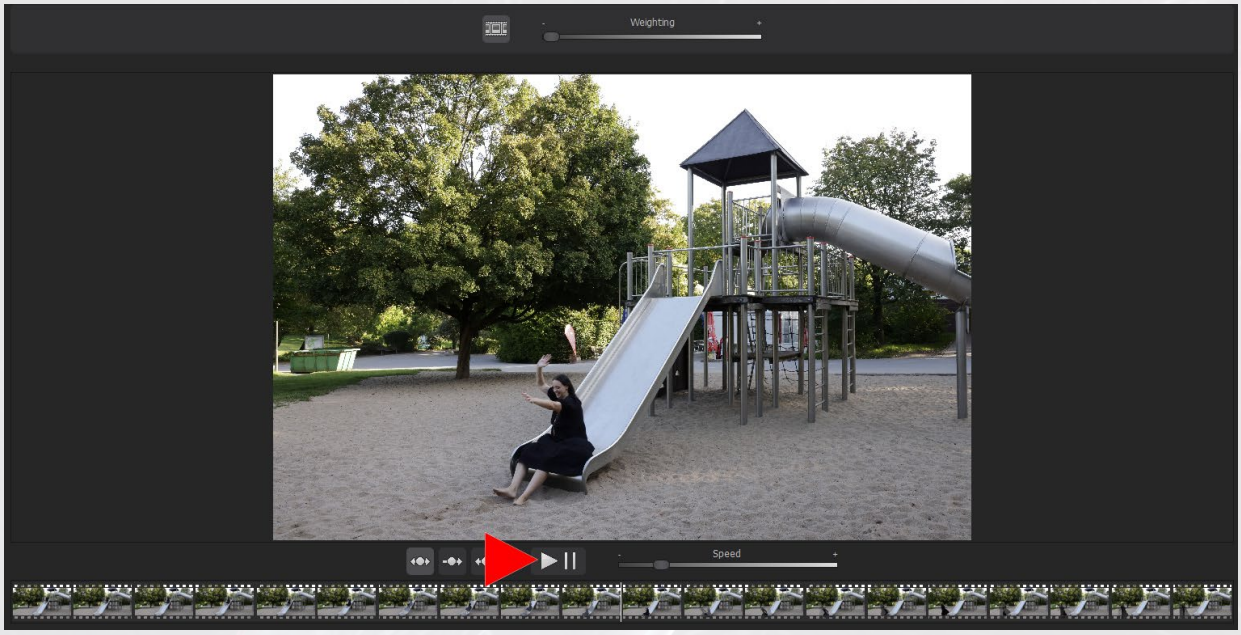
... the **single image** is displayed as it **was photographed or filmed**.
Here you can see all the individual movements very clearly as you scroll through.

Quick overview of the timeline:



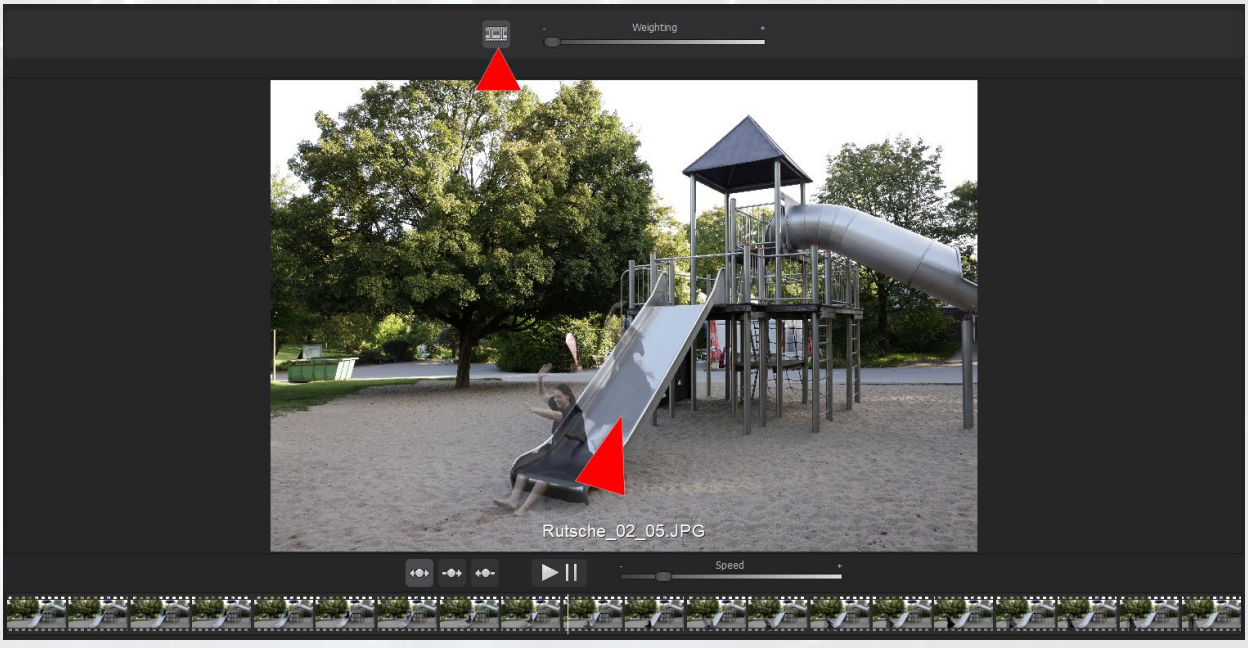
After selecting the desired view, you can click on the white line at the beginning of the first thumbnail and hold down the left mouse button to scroll through the image sequence.
Display file names: Stop scrolling and move the mouse over a thumbnail in the timeline while the image is paused. The corresponding file name will be displayed in the centre above the timeline, making it easier to find images in the fusion area, especially for larger sequences, if, for example, you have discovered an image while scrolling through that should be excluded from the calculation.

Quick animation with the player



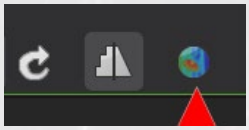
The **player** overview is even faster: clicking on the **play button** plays the image sequence and pausing it at the desired point using the pause button to the right. The speed control allows you to adjust the playback speed continuously from slow to fast.

Set playback mode: Use the buttons to the left of the play button to set the desired playback mode. The default setting is '**forward and backward**' (left). Clicking on the next button switches to '**forward' mode**, while clicking on the right button switches to '**backward**' mode.

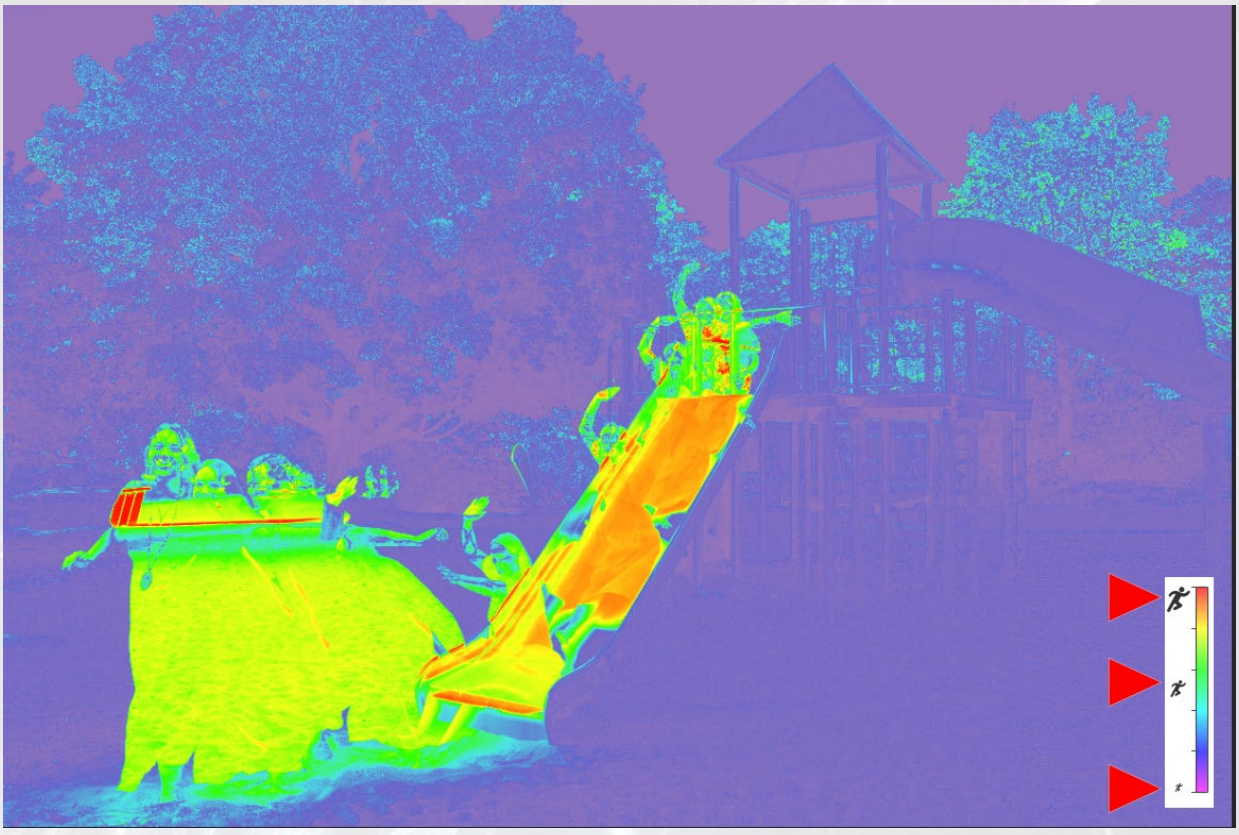


Fade: In the default blending mode, images fade smoothly during playback. Click the button to disable fading; the individual images will then 'jump' to the next image during playback or scrolling.

11. Motion-Map



This interesting movement map is displayed by clicking on the button with the “thermal image” symbol.



It shows you all the movements in the loaded image sequence ‘condensed’ into a single image using a colour representation or an ‘**infrared map for movement**’. In the example, this is the sequence with the slide as in the previous chapter, at a glance.

This map allows you to see at a glance how much movement occurs at which points in the sequence.

The display is comparable to an image from a thermal imaging or infrared camera, which shows different temperatures in corresponding colours. In **NEAT**, the **temperatures** are replaced by **movements**.

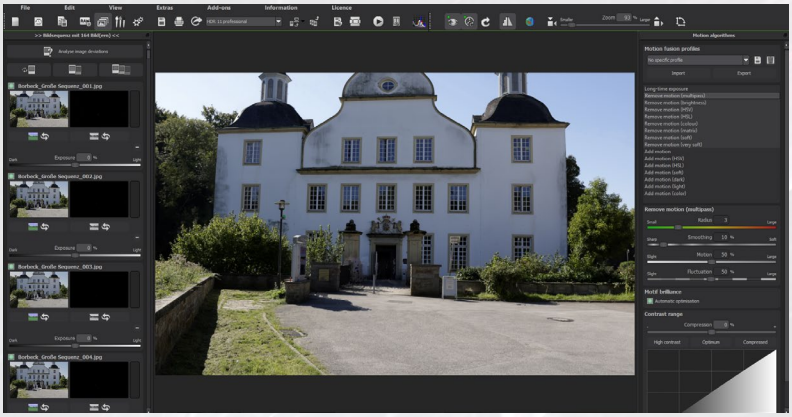
Very little movement: The colours **purple** to **blue** and the small running figure indicate that there is very little movement in these areas of the image, in the example all areas outside the slide.

Medium movement: The colours **turquoise** to **green** and the medium-sized running man visualise medium movements.

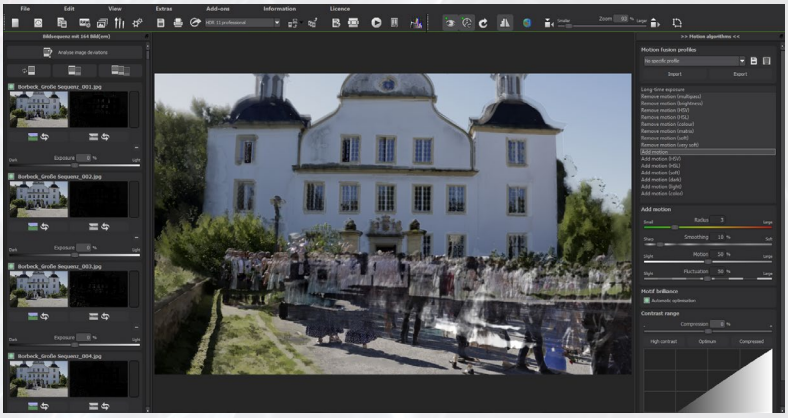
A lot of movement: The colours **yellow** to **red** and the large running man indicate a lot of movement in this area of the image.

12. Edit weights

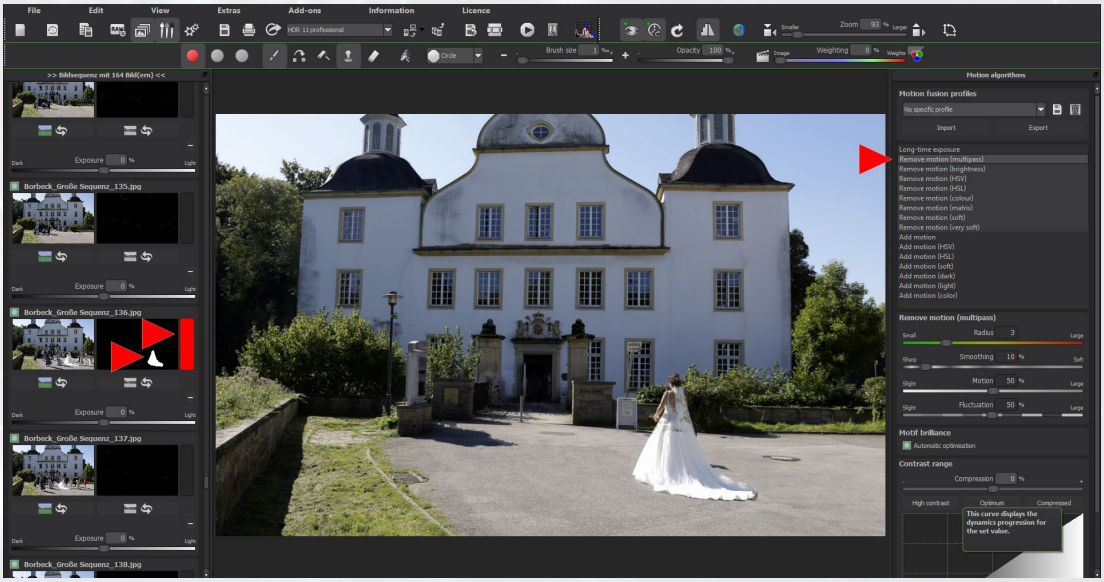
The **Painter** in the **Edit Weights module** is a powerful tool for manually editing one or more images in an image or video sequence.



With this tool, you can, for example, in an image sequence like this one with **164 individual images**, where **NEAT** has perfectly calculated all movements using the **Remove Motion (Multipass)** algorithm, ...

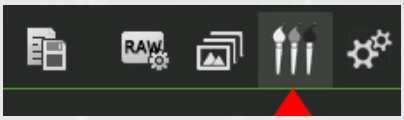


... as switching to motion impressively demonstrates ...

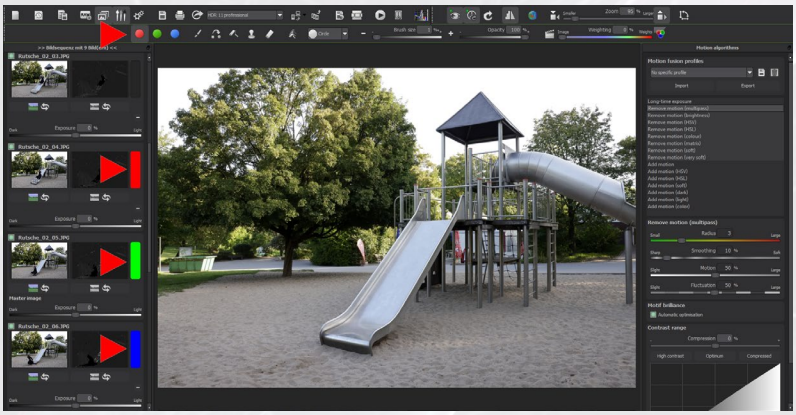


Change selective image areas or, for example, 'isolate' or fix individual persons, such as the bride here, and apply this to **all images in an image or video sequence if required.**

Switch to the **Edit weights module**



The tools in the **Edit Weights module** can be displayed in the **toolbar** from the **post-processing** or **fusion area** ...



... a **new toolbar** appears below the menu bar and three images with weighting colours are assigned in the **Edit Image Sequence area**.
Green is assigned to the **master image**.

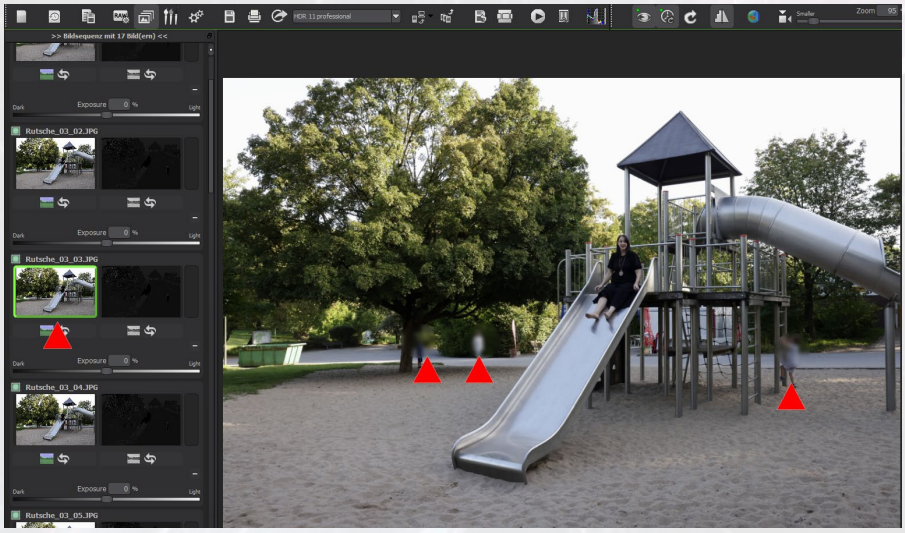
Note: This guide describes the functions required for troubleshooting or fixing individual subjects or objects.
All other functions of the toolbar are listed in keywords at the end of this chapter.

The procedure for the most common case, i.e. specifying a desired image section of a single frame for all subsequent frames in the sequence, is always the same and easy to implement:

- **Select one or more individual images** in which, for example, a person, an object or a desired cloud formation can be recognised in such a way that it should be adopted for the entire sequence.
- **Paint over** the desired part of the image using the **brush and stamping mode combination**.
- Make any necessary corrections – done!

Choosing **one** motif – alternatives to Painter

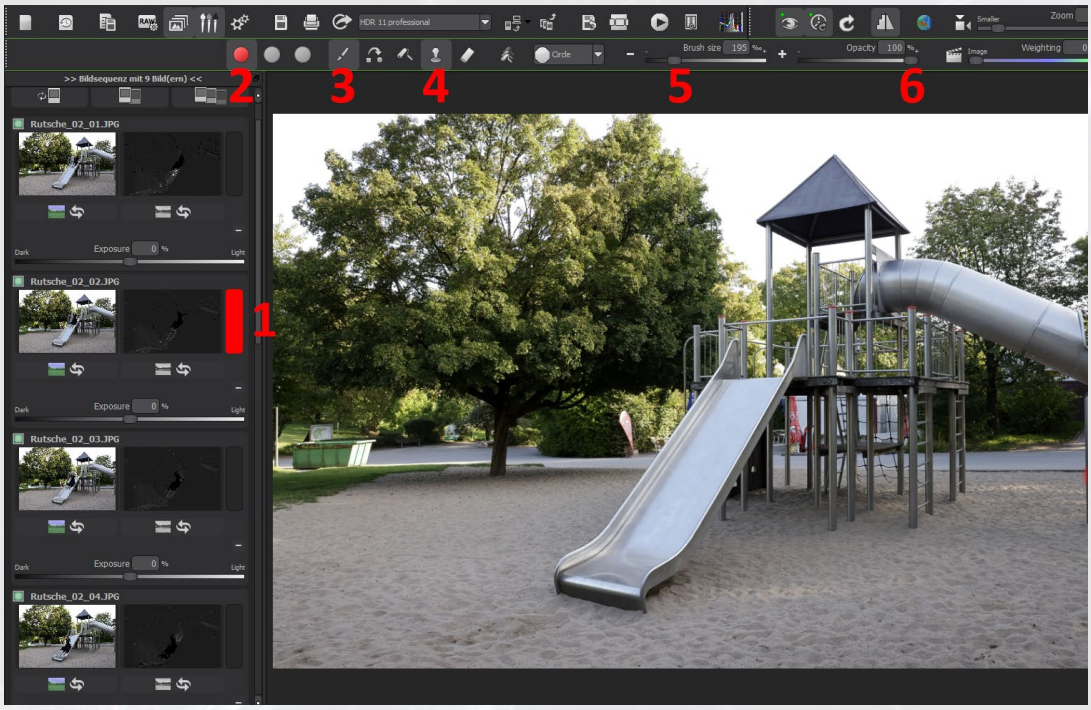
As a rule, painting over is the most precise and best option when fixing individual parts of an image in a sequence with many individual images and lots of movement. For sequences with few images, such as in the example with the slide, you can also try two alternatives:



Alternative 1: Select the desired frame: In this image sequence with **17 frames**, the desired frame can be quickly found by activating the thumbnails or scrolling through the player.
Disadvantage: Objects or subjects such as individual persons in the background, which should not be visible in the final image, must be removed, e.g. in **the sensor error correction module**.

Alternative 2: Activate every 2nd or 3rd image: In sequences with clear movement boundaries, such as here in a sequence of **9 images**, it is worth trying the option of activating every 2nd or 3rd image.
In the example, activate **Every third image** and the **Add motion** algorithm have been selected, with a very acceptable result.
Disadvantage: The selection is 'random' and may not match your personal preferences in terms of quantity or motif.

Example 1: From a sequence of **9** individual images, **3 images are to be selected** and combined into a final image using the **Remove motion (Multipass)** algorithm.



After switching to the **Edit Weights module**, the three weighting colours **green** for the **master image**, **red** above this master image and **blue** below the master image are automatically assigned.

If you now select the first frame for the desired result image, clicking the button next to the image mask automatically sets one of these three weighting colours for the drawing mode, in this example red (**1**). It does not matter whether red, green or blue is selected here. The only important thing is that it **matches** the colour activated in the toolbar.

Activating the weighting matrix (2): If the colour **red** is selected, the **same colour** must be activated by clicking on it so that the Painter recognises the corresponding weighting matrix, in this example **red**.

Activate Painter (brush) (3): Clicking on the button activates the brush or the **Increase Weight tool**, which, depending on the opacity, incorporates the painted areas up to 100% into the calculation.

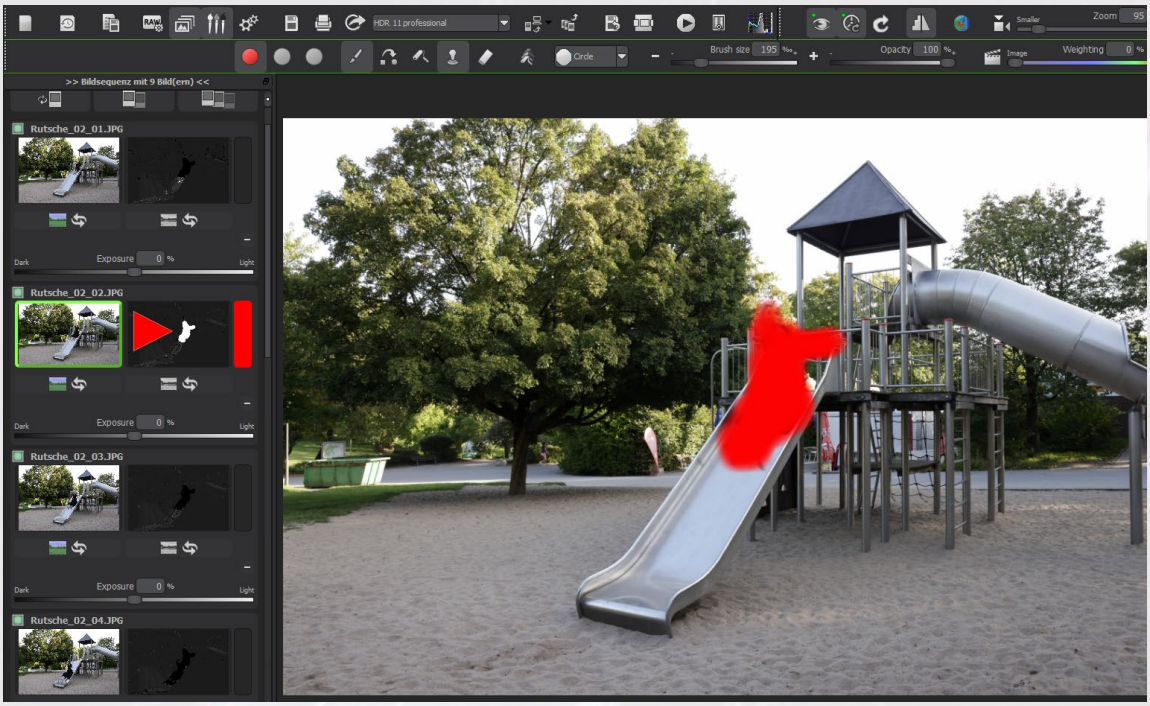
Activate Stamping mode (4): Click on the button to ensure that the **combination of brush and Stamping mode** applies the painted areas with the brush to **all images in the sequence**.

This is easy to see in the masks: the painted-over area is white, is fully included in the calculation, and in all other masks this area is black and excluded from the calculation (see next page).

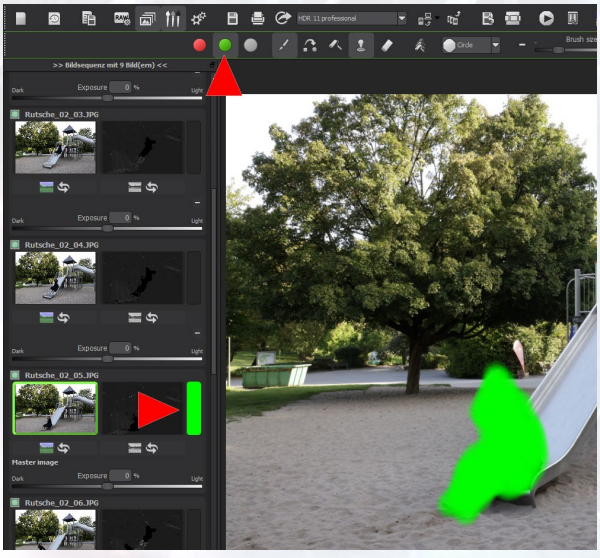
Set brush size (5): The choice of brush size depends on the areas of the image to be painted over. In the example, a small brush size is appropriate.

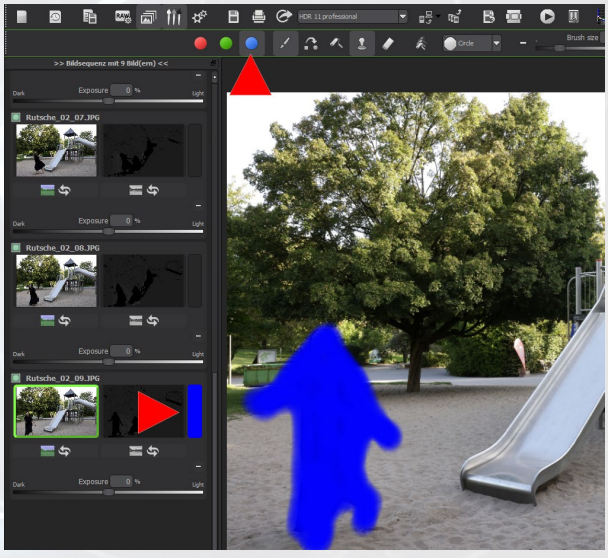
Set opacity (6): Since the selected motif should be fully visible, the opacity is set to **100%**.

Paint over the desired motif



Paint over the first motif: Once everything has been selected and set as described, paint over the motif with the brush as you would like it to appear in the final image. When you put down the brush, the final image will be recalculated.
In the matrix, this area is visualised by the white colour. In all other masks, this area is black and confirms that the combination of brush and punch mode affects all images in the sequence.



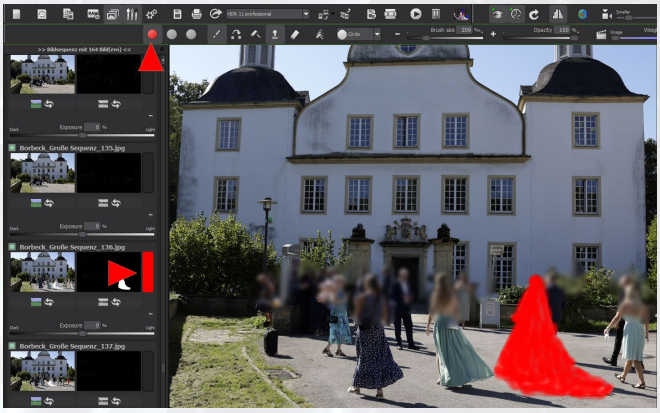


Fixing additional images: Select another image with the desired motif, choose the weighting colour, activate the identical colour in the toolbar and paint over the motif as in the first image.
Note: If necessary, you can select any number of images for your individual image design in large sequences; the weighting colours will then be reassigned.

Post-processing result image

In **Post-processing**, you can vary the appearance of the final image with its clearly and cleanly fixed individual images by selecting a suitable preset, such as Colourful in the example.

Image example 2

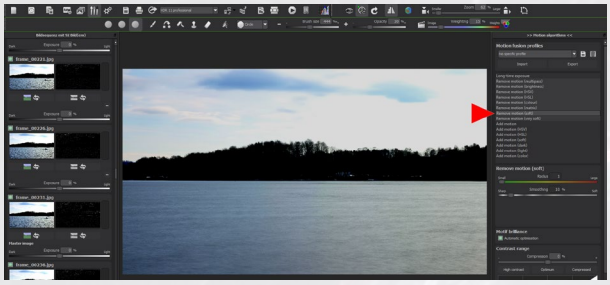


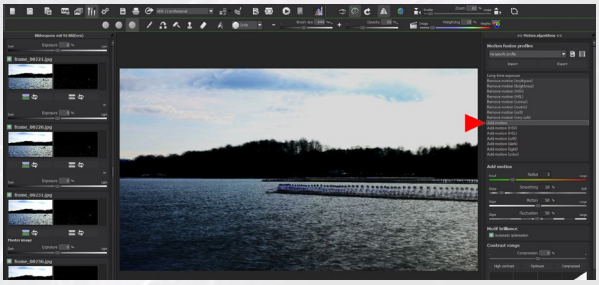
In the example of the bride shown at the beginning of the chapter, the same procedure quickly and easily produced the desired result.
In frame **136** of the **164-frame sequence**, **red** has been selected as the weighting colour and the identical colour has been chosen for the weighting matrix.

After switching to **Post-processing**, select the desired image look, in the example with the **Natural Light** preset, and, if necessary, you can further modify the image as desired in the other modules offered.

Image example 3: Cloud image, fixing the water surface in a video sequence

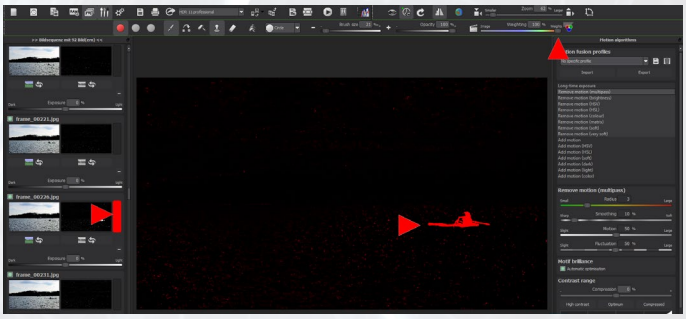
Create an image or video sequence of a subject over several minutes. In the example, a rowing boat on Lake Baldeney, the clouds and the water surface also move naturally during the recording time, which creates just as much 'disturbing' movement as other movements that **NEAT** is supposed to calculate out.



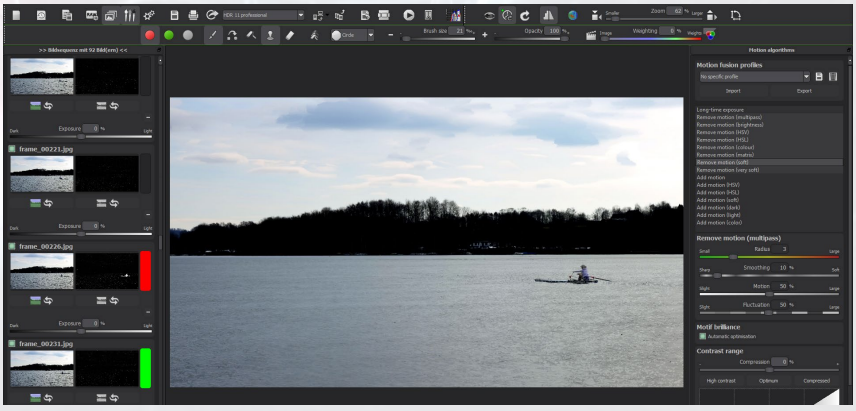


The procedure is the same as in the examples shown above. In many cases, however, you can dispense with fixing a desired cloud image or water surface with the brush, as the two motion algorithms **'Remove Motion (Soft)'** and '**Remove Motion (Very Soft)'** are 'specialised' in motifs with water and clouds and solve these challenges very effectively.
The graphic on the left shows the 'interim result' without a selected position of the rowing boat using the **Remove Motion (Soft)** algorithm, while the graphic on the right shows the result using the **Add Motion (Multipass)** algorithm.

Determine the position of the rowing boat, cloud formation and water structure

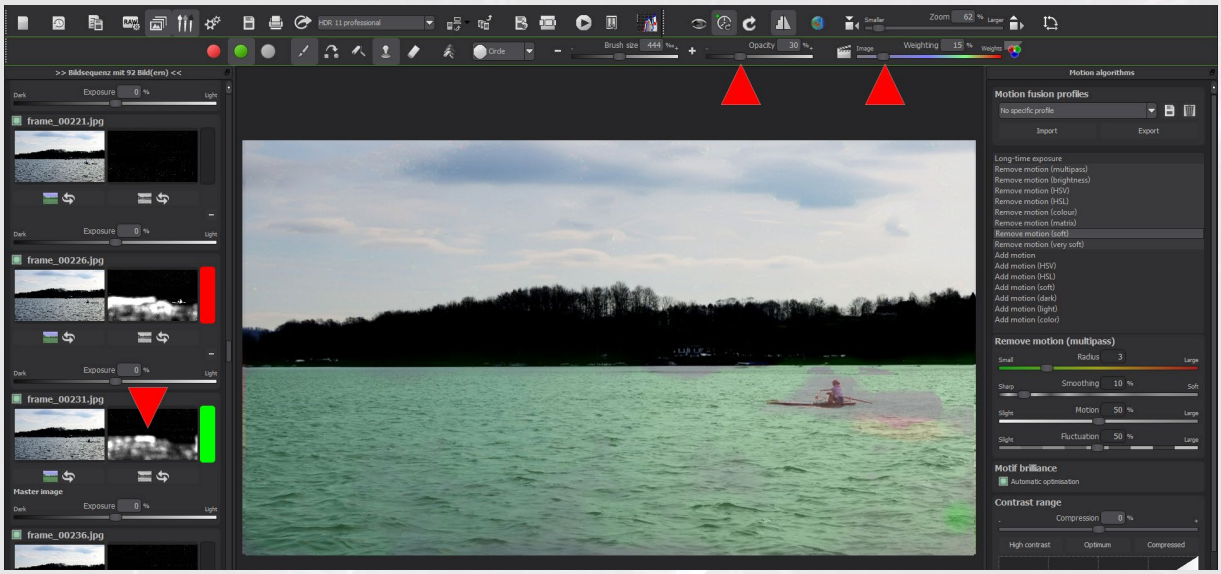


In the first step, paint over your chosen motif as usual, in this example a rowing boat, using the brush, and you can assess the result very well by moving the **weighting slider** all the way to the right...



... or in the merge view.

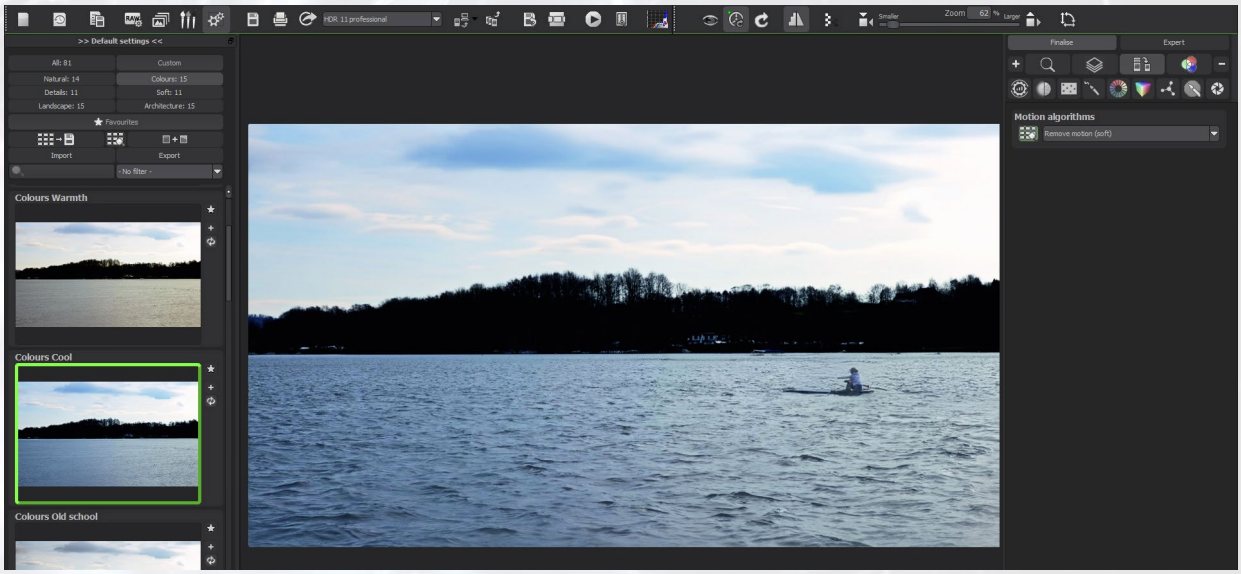
‘Roughen‘ up the water surface slightly



If you now find the water surface too smooth, select an image in which as few boats as possible are visible, click again on the button for selecting the weighting colour (green in the example) and activate the weighting matrix selected for **green**.

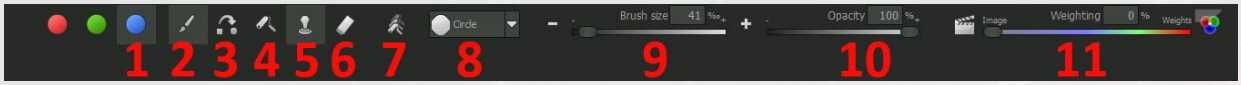
To ensure that the transitions from the slightly ‘wavy’ water surface to the boats in the final image appear natural, select a low opacity of **NEAT** around 30% and reduce the brush size in the immediate vicinity of the boats. recalculates each time the brush is set down, which takes a little longer but makes the result look more natural.

If necessary, you can also fix the sky in a selected frame, but this was not necessary here due to the chosen algorithm.



In the final image, the selected individual boat is clearly visible, the water surface does not appear too smooth, and the image look is determined in post-processing by the **Colours Cool** preset.

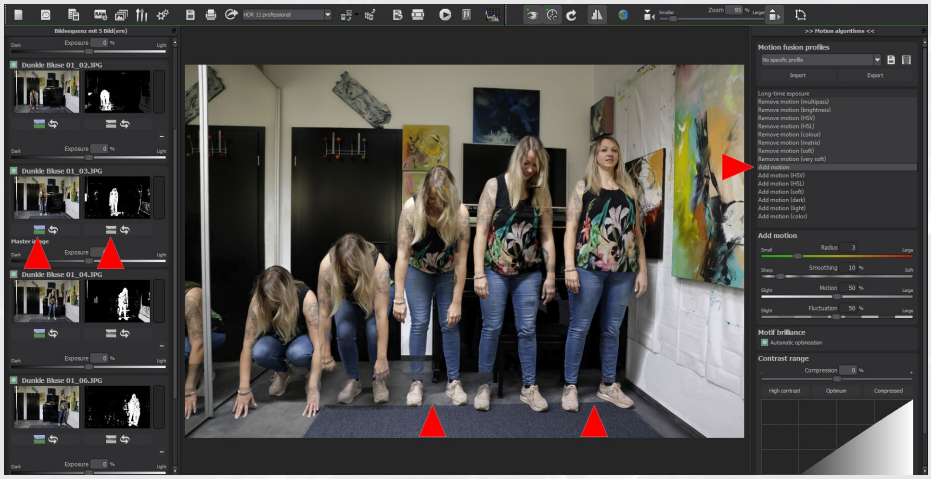
Toolbar



For most tasks, the **brush, Stamping mode, Size** and **Opacity** used so far are sufficient.
For additional options such as **deleting** one or all of the weights entered, further tools are available that enable all desired adjustments or reversals in the event of incorrect weightings:

1. Activate the selected **weighting matrices**, in the example **blue**.
2. **Increase brush/weights**: In conjunction with the controls for **brush size** and **opacity**, the brush can be quickly adjusted to the areas to be painted over.
3. **Blur** to **smooth** weighting ranges retrospectively**.**
4. **Delete function:** After activating this tool, move it like a brush over the areas that need to be corrected or deleted. If **stamping mode** is also activated, deleting the areas you move over will affect all images, which is usually the desired effect.
5. **Stamping mode**, which can be activated for the **brush** and **blur** tools: When this mode is active, **all images in the image sequence are processed with the selected weighting colour**, increased in all other images and decreased in all other images.
6. **Reduce weight:** This tool can be used to reduce the weightings of an individual image. In the mask, you will see these overpaintings in black.
7. **Delete weights: Deletes all drawn weights.**
8. **Select an alternative brush form:** Clicking on the button or the small arrow next to it will bring up a selection of different brush forms that may be more suitable for the areas you want to paint over.
9. **Adjusting the brush size:** Use the slider to set the desired brush size.
10. **Adjusting the opacity**: Use the slider to set the desired opacity. **The default value is 50%**.
11. **Visualising weighting:** If required, the slider can be used to display the **image** (left) or the **weighting** of the image fusion to a lesser or greater extent (to the right).

13. Transfer-windows



These two **transfer options** below the image and matrix thumbnails are practical and save time because you can **switch to selective drawing with just one intermediate step and quickly manipulate selected image parts or masks**.

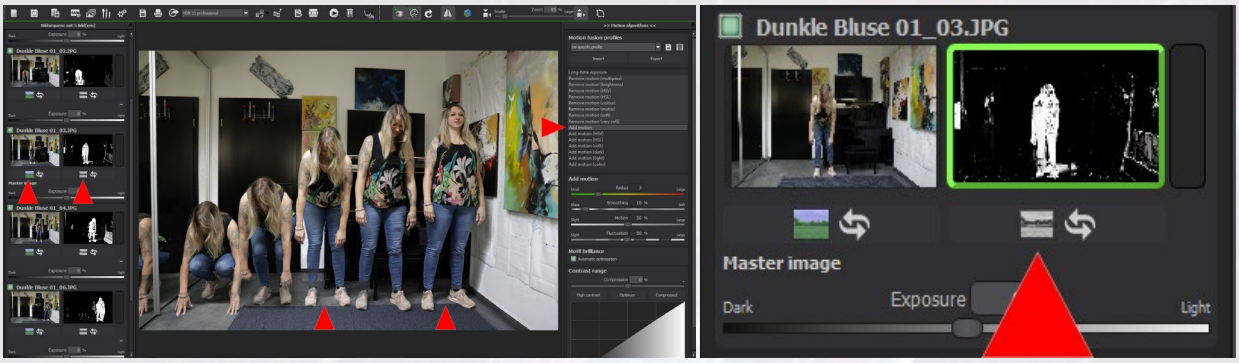
Image transfer: Click the **left button** to transfer the desired **image** from the current image sequence to a **composing mask** in **Selective Drawing**.

In the example of a sequence of 5 images, you could manually 'compose' an image such as the one shown in the graphic above, which was automatically generated by the **Add Motion** algorithm, in the composing masks, or create any number of variations of the sequence with fewer individual images.
Since this 'composing' also works very well and usually faster in the **Edit weights** area with the brush, as we have seen, this option is only mentioned here, but not described.

Mask transfer: Click the **right button** to transfer the **corresponding mask** for **Selective drawing** to one of the available masks, e.g. to the effect masks.
For image sequences with different brightness levels or focus planes, where the subject does not move and which are combined in **HDR** or **FOCUS** to produce professional results, these greyscale images can be used, for example, in **effect masks** to accentuate, soften or enhance or reduce colours in contours at lightning speed.
In **NEAT**, these contours 'wander' with each individual frame, so it usually makes more sense to select image sequences in which the masks are clearly recognisable, as in the example, and are clearly distinguishable from the neighbouring images.
After transferring to **Selective drawing**, you can achieve effective effects in such or similar image sequences in a flash and, for example, enhance, reduce or recolour details, contrasts, brightness or colours, thereby creating interesting and exciting variations of the resulting image, as shown in the following two image examples.

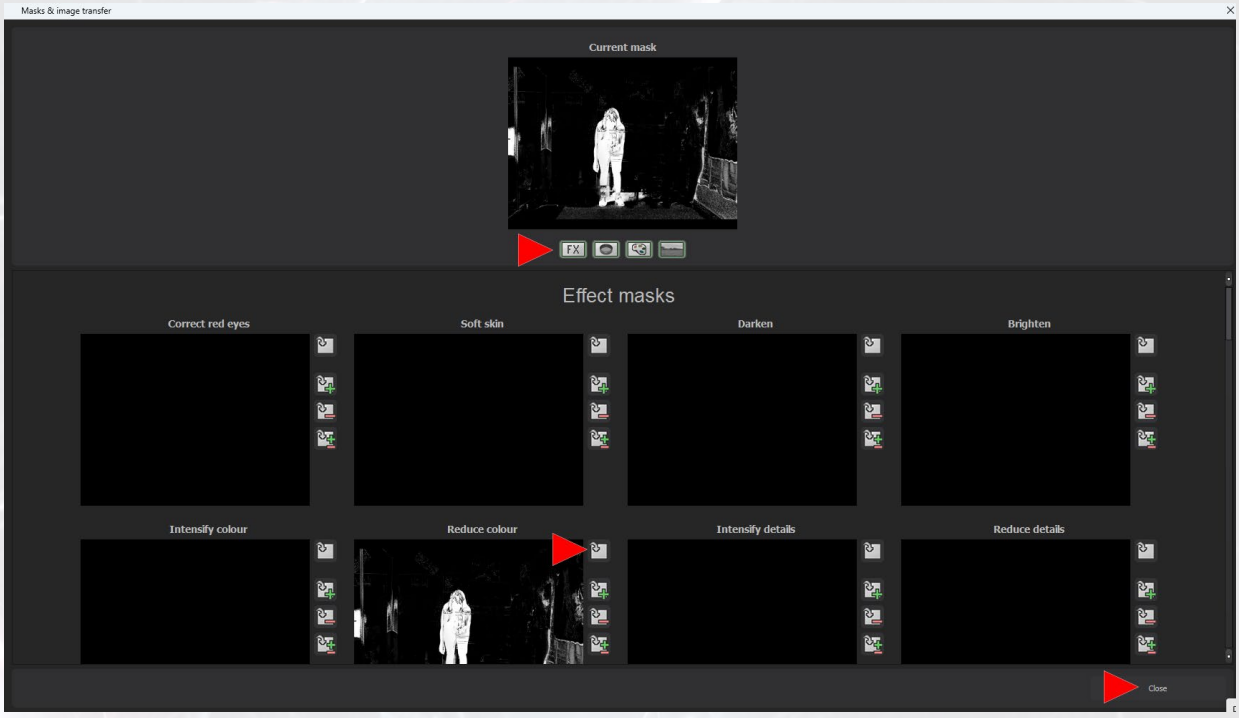
Note: The **Selective Drawing** module is described in detail in the **Selective Drawing** guide.

Example 1: Reducing and enhancing colours



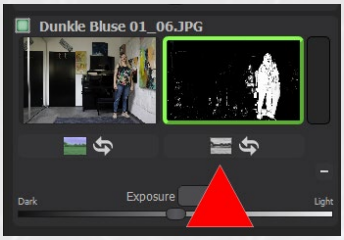
In this example, the **colours** should be **reduced** in the middle position and **intensified** in the outer position.

Reduce colours: If the **weighting matrix** associated with the selected image is activated, clicking on the button (graphic on the right) opens ...

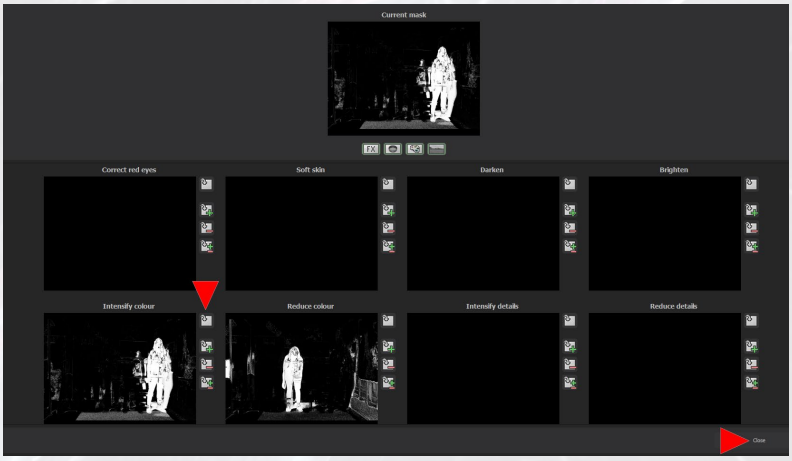


... the Transfer Window **Masks & Image Transfer** with the options below the current mask to manipulate a desired effect directly in the area of the **effect masks**, **colour filter** or **colourisation masks**. The option on the right leads to the composing masks.
In this example, the colours in the areas that are **light** or **white** in the mask should be reduced.
In the Transfer window, the first section, **Effect Masks**, is active by default with all effects displayed below it.
If you click on the arrow button next to the **Reduce Colour** effect, the mask will be inserted immediately.
Click **Close** to return to the merge area.

Intensify colours



The colours should be intensified in the last image of the sequence.
After activating the weighting matrix, switch back by clicking on the button ...



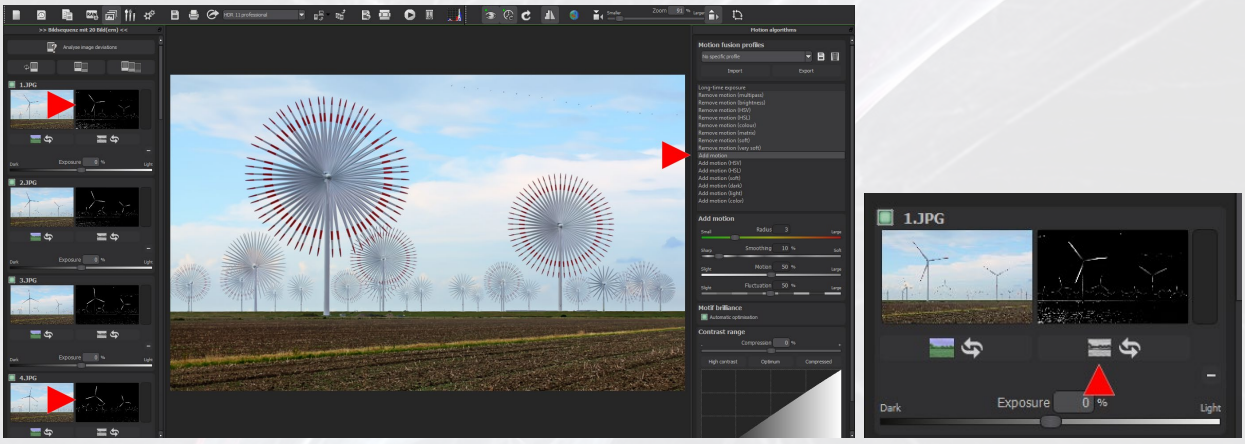
... to the transfer window and insert the mask into the **Intensify Colour** effect mask.
Clicking **Close** will return you to the merge area, and after switching to **post-processing** ...

... you will immediately see the result image, which now looks even more exciting and interesting in conjunction with the **Addition motion** algorithm.
If necessary, you can correct the effect in the effect masks either globally using the **intensity slider** or individually using the **tools**.

Example 2: Recolouring in the Colouring masks

Each selected effect mask performs a specific task, such as enhancing colour. This means that the effect can be assessed immediately in the post processing.

For other areas, such as **Colouring masks**, you must activate these masks directly in **Selective Drawing** and determine or paint in the desired effect. Therefore, the result can only be seen after individual mask manipulations in post-processing.

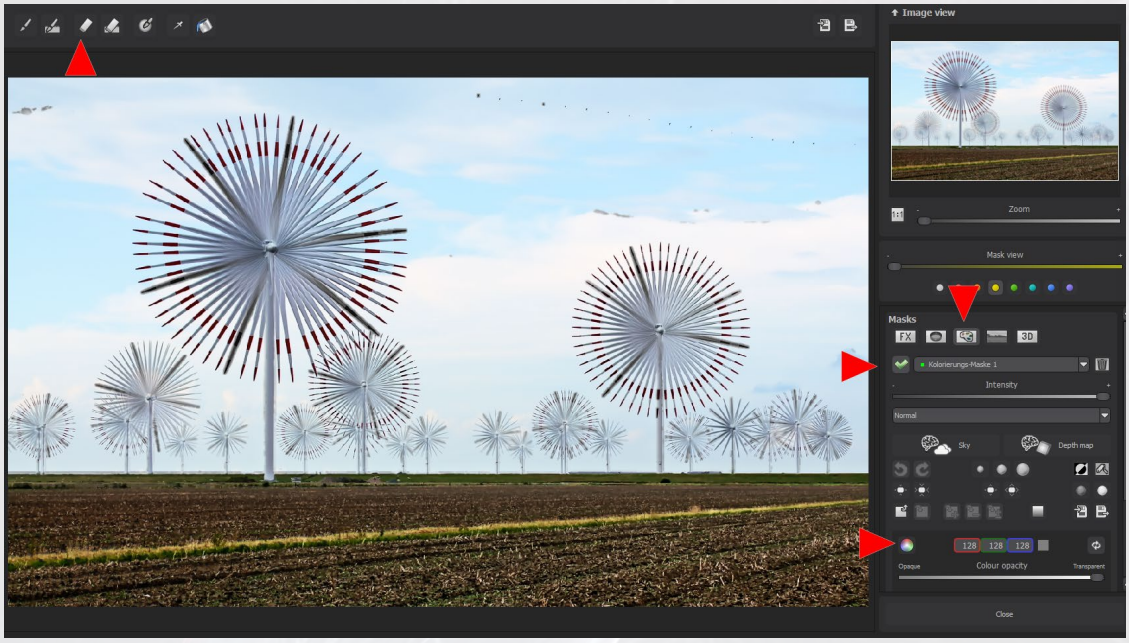


In this image sequence with 20 individual images and the **Add Movement** algorithm, which you are familiar with from the chapter with the sample images, the rotor blades in the first and fourth images are to be recoloured.

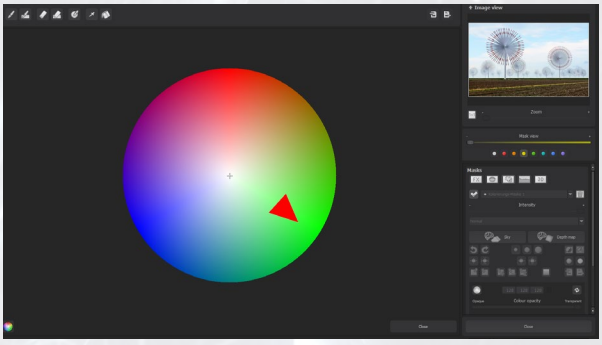
After activating the weighting matrix, click on the button to switch to ...

... the Transfer window, scroll down to the **Colouring masks** and, in the first step, insert the mask from **image 1** into **Colouring mask 1** and, in the second step, insert the mask from **image 4** into **Colouring mask 2**.

Recolouring in the Colouring mask 1



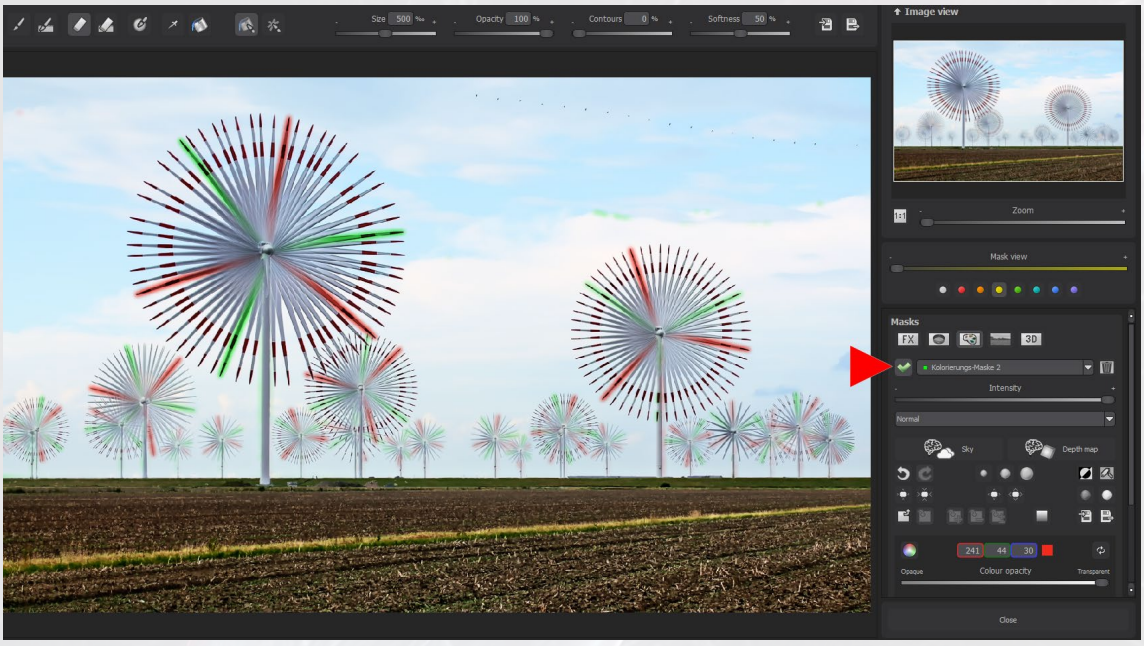
After switching to **Post-processing**, display the **Selective Drawing module** in the toolbar, activate the **Colouring** masks area and, as the first step, **Colouring mask 1** (Kolorierungs-Maske 1).
By clicking on the button with the **colour wheel** ...



... select a colour, e.g. **green**, in the window that appears ...

... and immediately see the interim result. You can quickly delete unwanted areas, such as discolouration in the sky or in the lower part of the image in the example, using the **eraser**.

Recolouring in the Colouring mask 2



In the second step, activate **Colouring mask 2** (Kolorierungs-Maske 2), select a second colour from the colour wheel, **red** in the example, and, if necessary, correct any unwanted colour changes with the **eraser**.

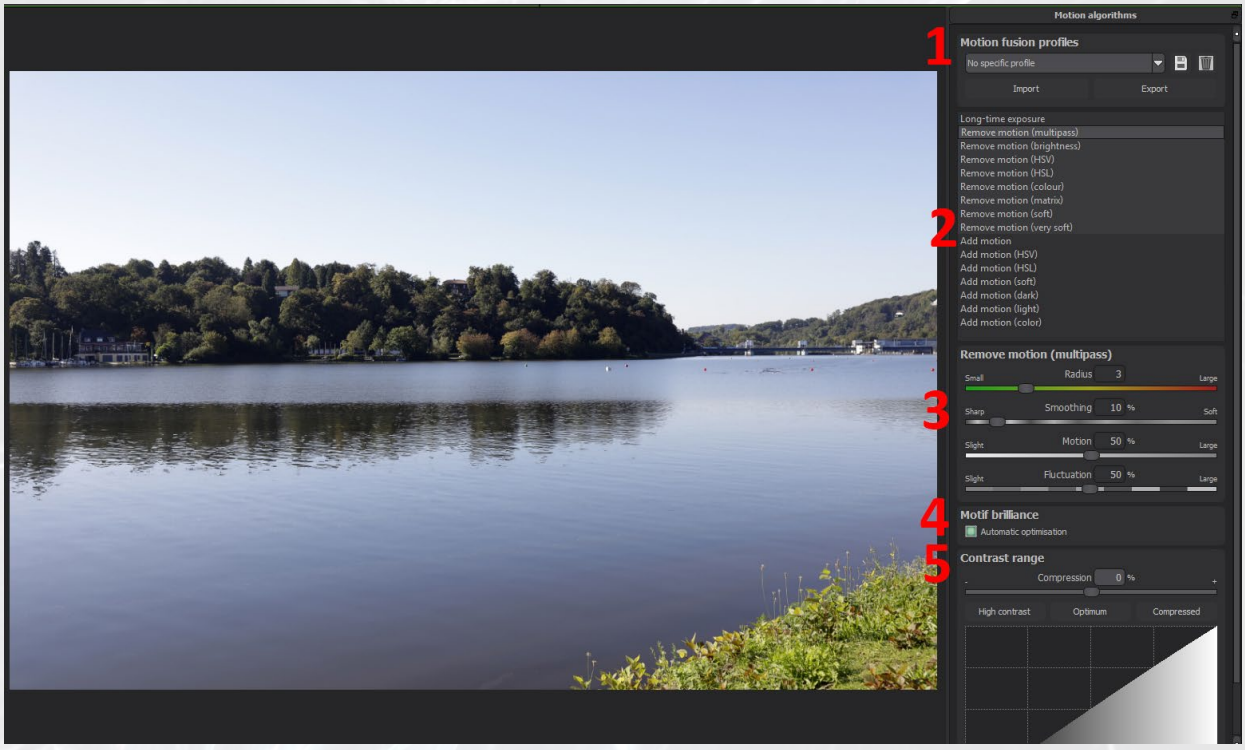
Post-processing result image: Click **Close** to switch to post-processing and view the result image with the desired look. In this example, the **Natural Dark Shadows** preset was used.
This allows you to quickly and easily realise creative ideas and create further surprising, astonishing image variations using the transfer window function.

Note: If necessary, you can insert **different masks** in **different mask areas** or modify **one** mask in **several mask areas**, e.g. modify the mask associated with **image 2** in the **Intensify colour effect** masks and recolour this mask in **blue** in the **Colouring masks**.

14. Overview of Motion-algorithms and other modules

On the **right-hand side** of the fusion area, there are various **algorithms and methods for calculating the individual images of an image or video sequence on the left-hand side**.
Since the options of all modules are directly related to a selected algorithm, this section will be described first, followed by the other modules.

Interface overview



1. **Motion fusion profiles:** Here you can create, save, import, export and, if necessary, call up your **own profiles**.
2. **Display and selection of the various motion algorithms.** The default setting is the **Remove Motion (Multipass)** algorithm.
3. **Parameters** that are displayed for each selected algorithm and can be used to customise this algorithm as required.
4. **Motif brilliance:** This **Motif brilliance optimisation** with automatic intelligent tone value spreading is active by default.
5. **Contrast range:** In this module, you can use the three automatic optimisation buttons or the slider to adjust the contrast range as required.

15. Motion algorithms and associated parameters

In the previous chapters, the outstanding importance of the algorithms, with their influence on the individual images, the associated weighting matrices and the fusion image, has become clearly apparent.

These motion algorithms offer **various calculation methods** for an imported image or video sequence.

These different methods can lead to different results in the composite image depending on the subject and any discernible problems, resulting in slight or significant differences from the preset algorithm.

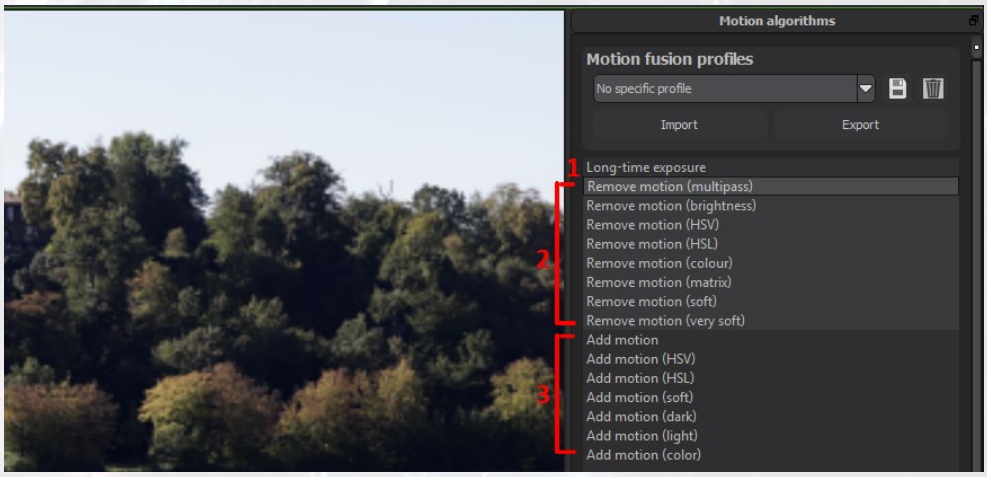
There is no single method that guarantees the desired result because there are **no qualitative differences between the algorithms**. The differences between, for example, **Long-time exposure, Remove motion (soft)** or **Add motion (light)** are no better or worse than the default algorithm **Remove motion (multipass)**.

The different calculation methods either produce very different image results or result in **different evaluations of movements**, which means that, for example, one algorithm may produce artefacts in the image, while another algorithm does not.

Trying out the different methods is very quick, with just one click.

The technical details, calculation focus areas and technical terms are displayed when you hover over them with the mouse.

The **classification** provides a useful guide when making your selection.



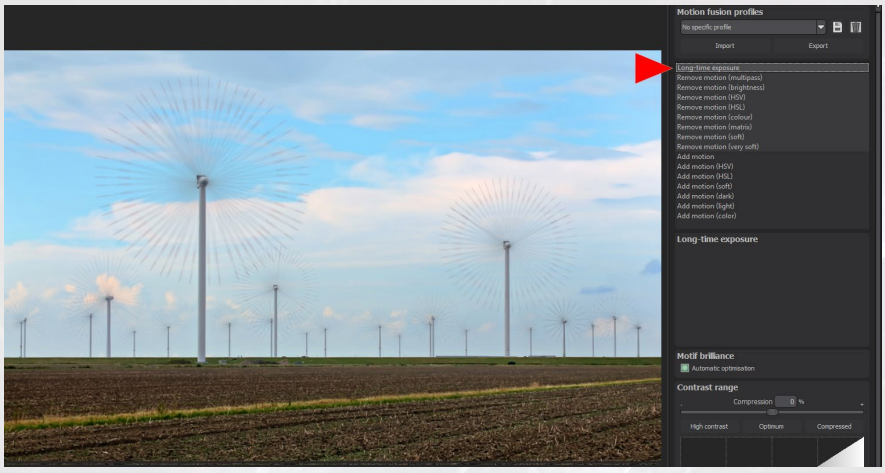
Three ‘classes’ of algorithms

1. **Long-time exposure:** With this algorithm, as with stacking, all images are superimposed on top of each other and then the average of all images is calculated.

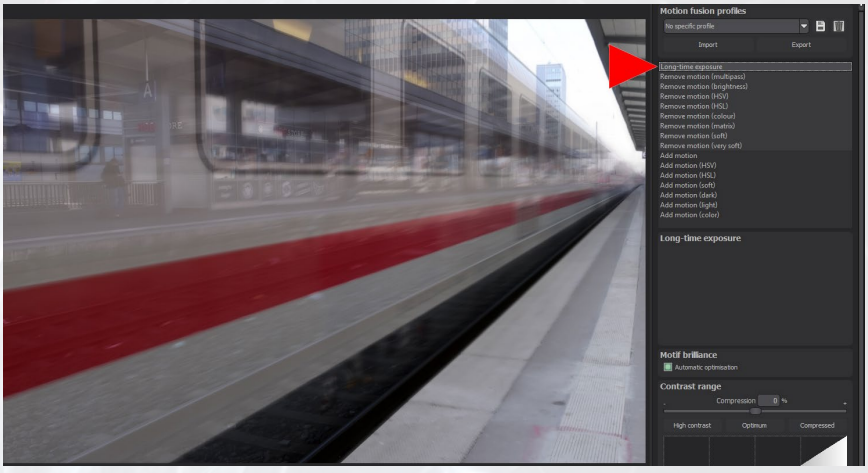
2. Category or class of **motion removal algorithms**.

3. Category or class of **motion-adding algorithms** that do not **remove** moving subjects or objects, but rather **emphasise** them.

Category 1: Long-time exposure



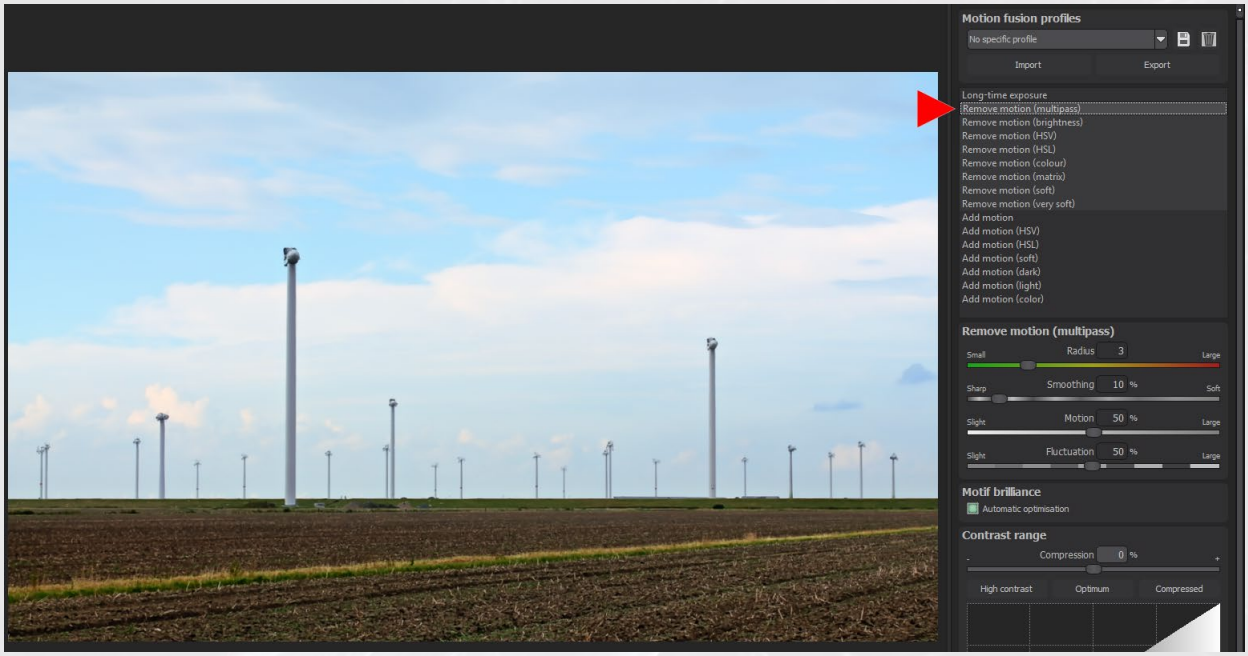
In this graphic of the example image sequence with the wind turbines already shown, the first algorithm**, long-time exposure**, has been selected. As with a real long exposure, the individual rotor blades are less visible here than in a snapshot with a very short exposure time.



An image sequence with many individual images is more advantageous for this algorithm and can lead to interesting results, as in the example of this video sequence with 132 frames ...

... or this sequence with 154 frames.

Category 2: Motion removal algorithms

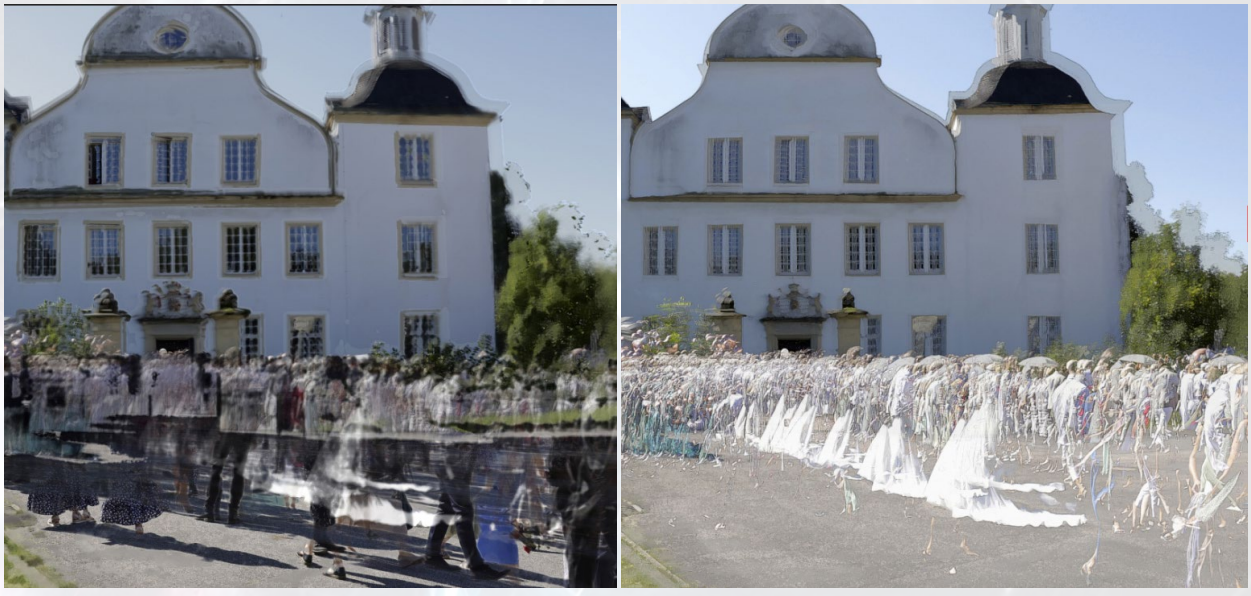


With the default algorithm **Motion Removal (Multipass)**, the result is calculated in **several passes**, taking into account the **brightness** and **colour** of the individual pixels when removing the motion, which leads to the impressive result image.
In the other motion algorithms in this category, different calculation methods determine the result image, e.g. (only) removing the **brightness** of the pixels during **Remove motion (brightness)** or the two **colour spaces HSL** and **HSV** in the two corresponding algorithms.

Remove motion (Soft) is particularly suitable for **water surfaces**, for example, while **Remove motion (Very Soft)** is ideal for cloud images or for a combination of water and clouds.

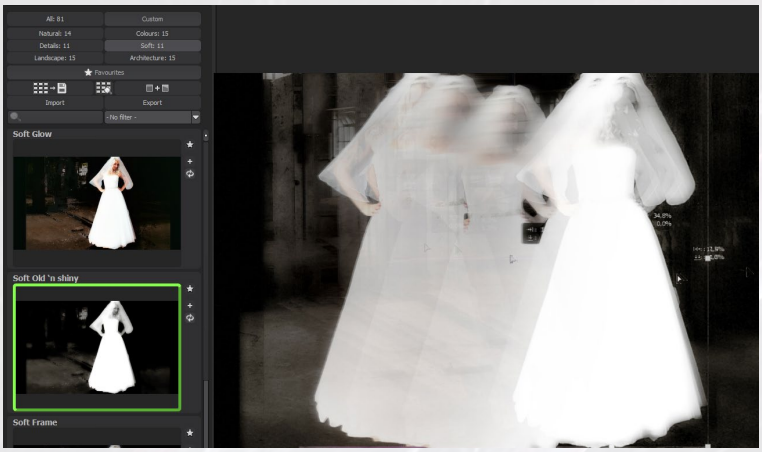
Category 3: Adding movements

If you switch to the **Add Motion (dark)** algorithm in the **third category**, for example, the result is just as impressive in **highlighting the movements**. Unlike the 'normal' **Add Motion algorithm**, which uses **pixel brightness** for calculation, this algorithm gives greater weight to **darker movements**. In the case of the rotor blades, these are the inner areas, which appear darker and more contrasting in the result.

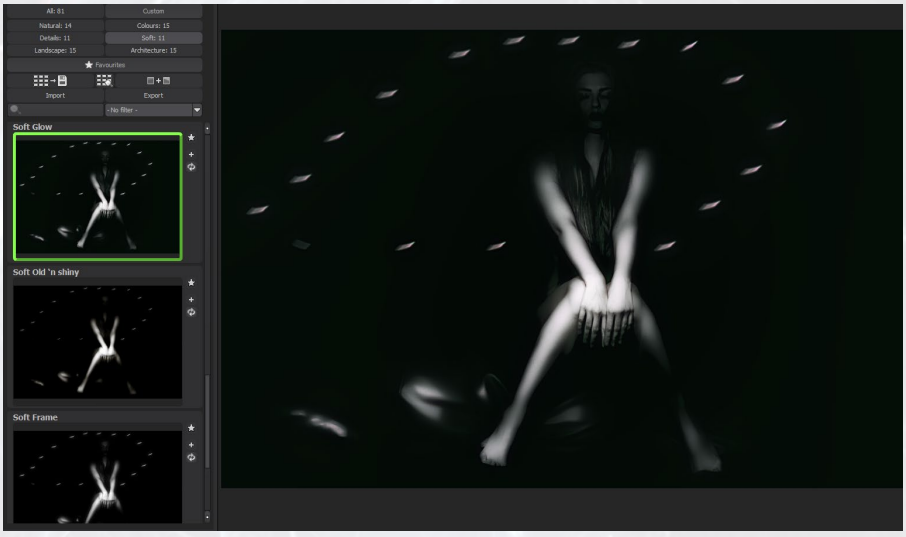


The difference between the two algorithms, **Add Motion** (graphic on the left) and **Add Motion (light)**, in which particularly bright movements are added, is striking.
The two graphs clearly show that the **overlaps** between the movements are also reflected in the merger picture.

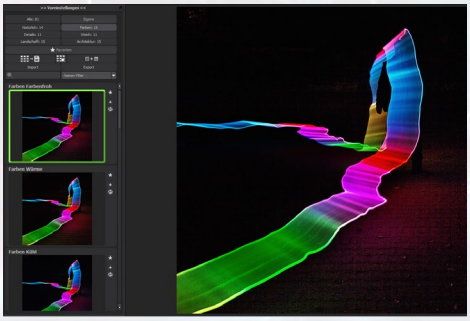
Create surprising image looks

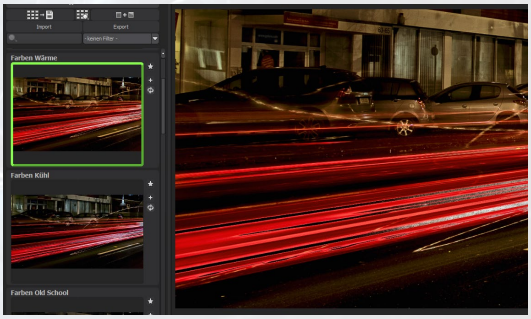


Adding motion (light) can also create a **“ghostly” look**.
For example, if a woman in a white dress runs through a scene, this algorithm will mainly show the moving white dress, while the dark areas are heavily blurred.
In combination with a selected preset, in this example **Soft Old’n Shining**, surprising and unique image compositions can be created.



Light painting works just as effectively with this algorithm for bright light sources, e.g., with a moving flashlight and the **Soft Glow** preset...





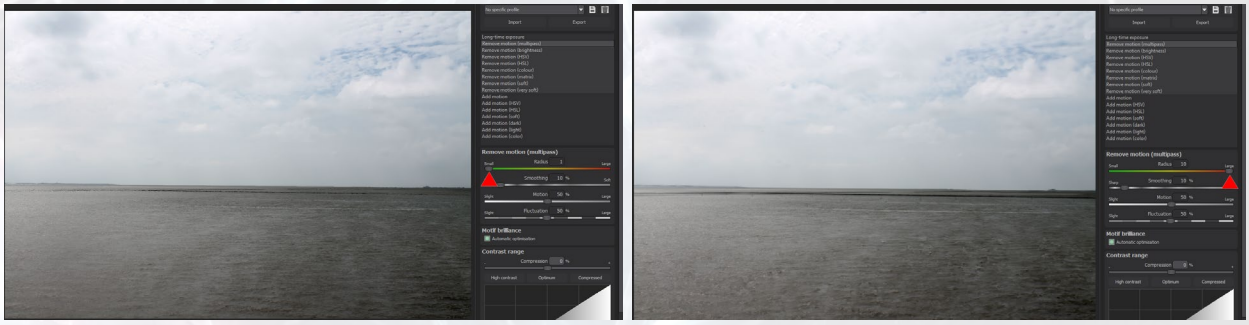
... or **add motion (colour)** for coloured light sources in the dark, where only the moving colors of glow sticks or cars are effectively staged as bands of light in the fusion image, in the graphic on the left with the preset **Colours Colourful** and on the right with **Colours Warmth**.

Influencing or optimizing results with parameters

Whenever an algorithm is selected, the corresponding parameters are displayed below it. These parameters can be used to fine-tune the fusion image, which is determined by the default settings, if necessary.
One **exception** is the motion algorithm **Long-time exposure**, for which there are **no parameters**.

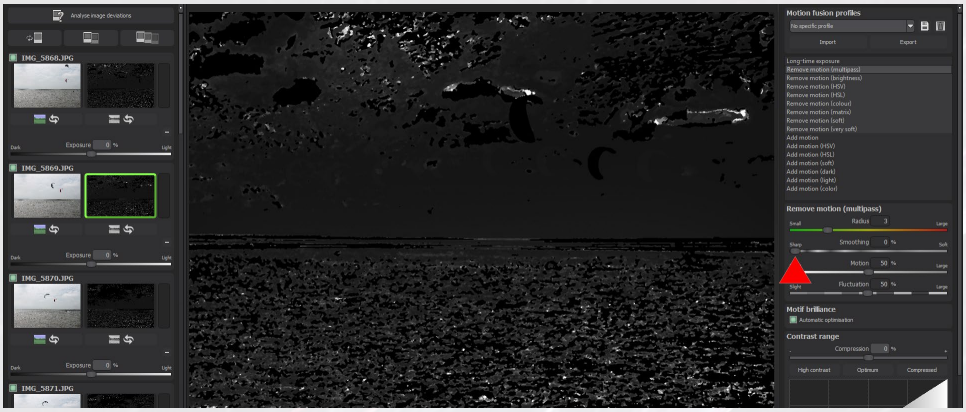
As a rule, the default settings optimize the respective algorithm so well and effectively that you can dispense with individual interventions.

The sequence with the kite surfers clearly illustrates the minimal to significant effects of changing a parameter. However, these effects are highly dependent on the image or video sequence loaded, so the descriptions of the parameters should be understood as general information and guidance.

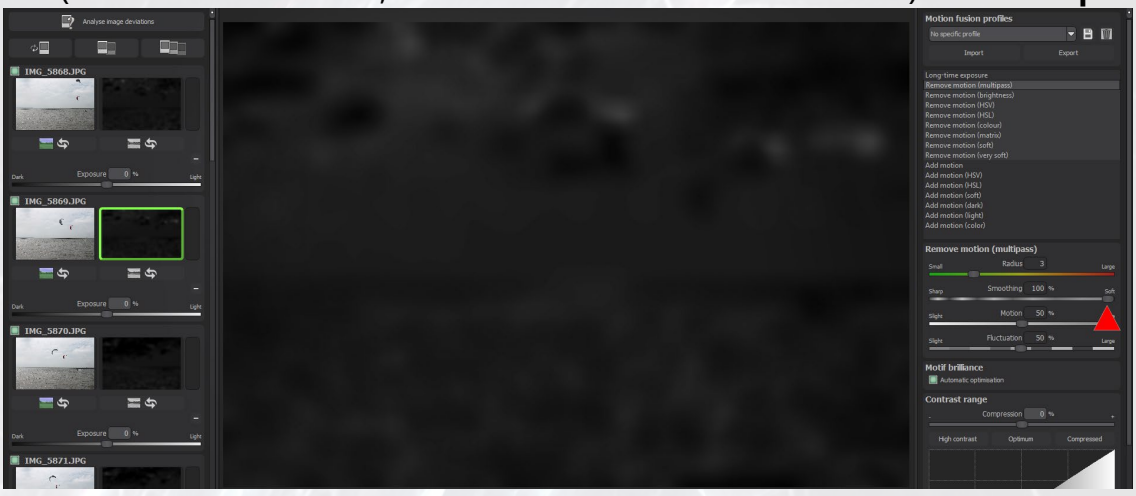


Radius: This parameter controls the **stamp size** for automatic motion calculation. The default value is **3**.
If the slider is moved all the way to the **left** to a very **low value** (left graphic), the result in this image example changes only minimally. The same applies to a very **high value** (right graphic) when the slider is moved to the **right**.
There is no universal rule that a higher radius will produce better results. In some sequences, a **very small radius may produce better results** if the moving subjects or objects are **very small**.
If these subjects or objects are **large or very large on average**, select a **larger radius** if you want to remove these movements and are not entirely satisfied with the automatically calculated result.

Smoothing parameters



The **Smoothing parameter**, which is set to **10** by default, smooths the mask or masks (for better illustration, **one** mask has been activated here) from **sharp** ...



... until **soft**. Both graphics clearly show that this parameter controls the sharpness of the **edges and the transitions**. Here, too, there is no universal rule as to which setting produces a better result.

In the example image “hard” smoothing is better, ‘soft’ smoothing or very soft blending leads to unwanted shadows and “ghost images” in the sky around the stunt kites and among surfers, which in some cases may be a desired effect for a particular image statement.

Motion parameters

This parameter, which is set to **50** by default, allows you to adjust the **intensity of the movement**.
If you have imported a sequence with **little movement** between the individual frames, a control setting with **Slight motion** will produce a better result.

In a sequence with **a lot of movement**, the result improves accordingly when the slider on the right is set to **Large**.
In the example, the differences are very small but visible. In the **slight parameter setting** (graph above), the narrow bright lines where the surfers have created white “bow waves” on their boards are “rougher” and coarser, while in the **large** motion setting they are more homogeneous with a more convincing image effect.

If you set the smoothing parameter to **soft** with this setting, you will see ghost images again with the stunt kites and surfers.

Fluctuation parameter

This parameter, which is set to the default value of **50**, is particularly dependent on the loaded sequence because it refers to differences in **brightness** between the moving subjects or objects and the background and takes into account whether there was **little or no movement** between the individual images, i.e., whether the variation in these movements was **rather low** or **high**.

If the parameter in the graphic above is dragged to the **left** towards **Slight**, unsightly artifacts can be seen in some areas of the image.

If the slider is pulled to the **right**, they disappear just as they do in the middle standard position.

Conclusion: In this image sequence, **no** parameter change led to a visibly better result image, which underscores the statement that the default settings usually do not need to be changed unless you want to achieve special effects, such as those seen with the **smoothing slider**.
Nevertheless, for critical or not quite optimally calculated image areas, it is worth experimenting with the **motion addition** algorithms if you want to achieve the best possible result image.

The algorithms include various parameters

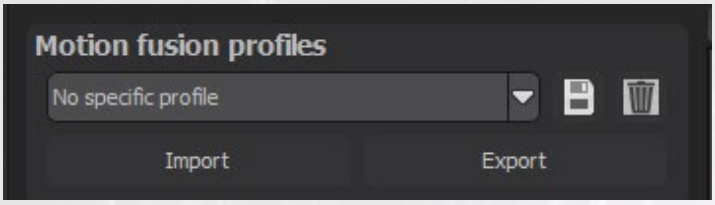
Most **motion removal algorithms** have the same **4 associated parameters**.

The exception is the **Remove Motion (Soft)** algorithm, which does not have the **motion** and **fluctuation** parameters.

These two parameters are also missing from the **motion-adding algorithms Dark, Light, and Colour**.

Special case Add movement (soft): This algorithm has **three parameters**, whereby the third movement parameter is set to the high value of **95** after loading this sample sequence, and to the average value of **50** in almost all other sequences.

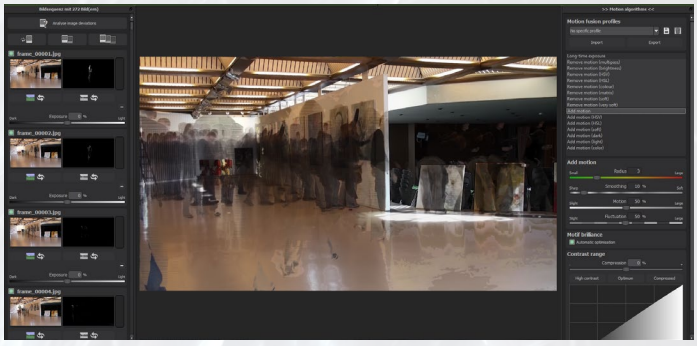
16. Motion fusion profiles



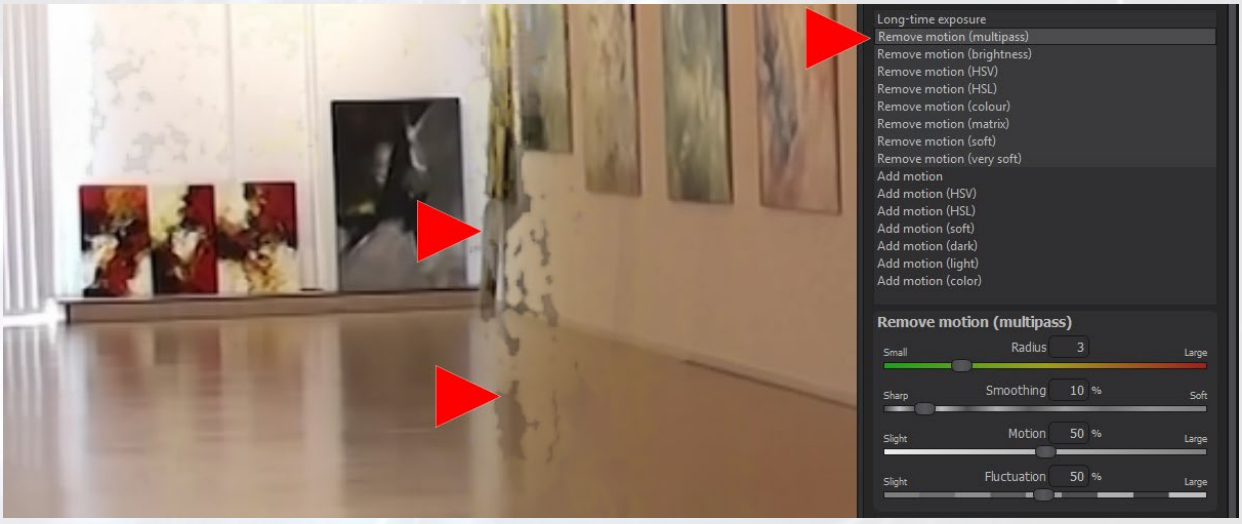
As described in the last chapter on parameters, it is rarely necessary to change the default settings for the parameters individually.

If, while experimenting with different algorithms and parameters, you have found a combination that you believe achieves the best possible result and would like to apply it to similar sequences later on, you can use these current settings to create **your own profile**, save it, import it, export it and call it up again at any time as needed.

It is best to assign the **profile name** in such a way that you can quickly find it again in similar image or video sequences.

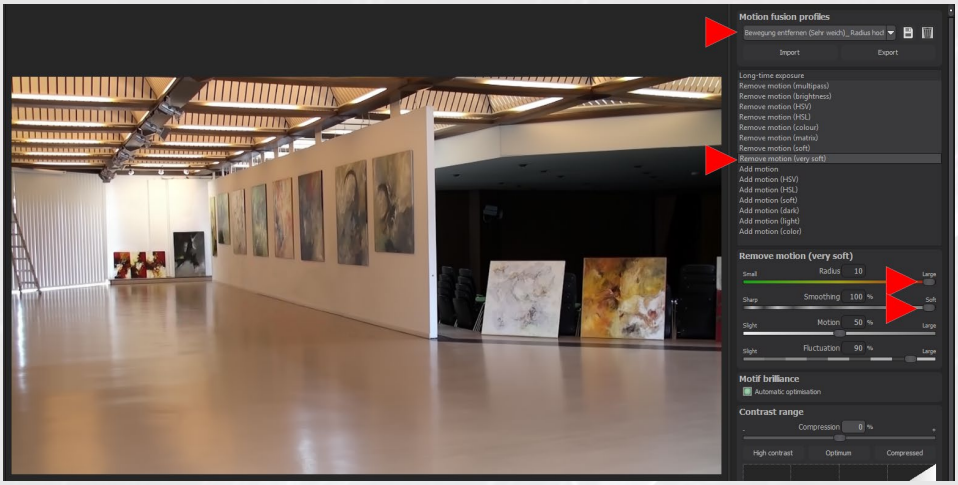


Example: The result image of a video sequence with 272 individual images from the construction of an art exhibition clearly shows the many movements during the recording period when the **Add Motion** algorithm is applied.



With the **Remove motion (multipass)** algorithm and all default parameter settings, all motion has been perfectly eliminated except for the area in the rear right part of the image where a person moved slightly during the recording time. This results in unsightly artefacts at this location.

Save the optimal combination of algorithm and parameters

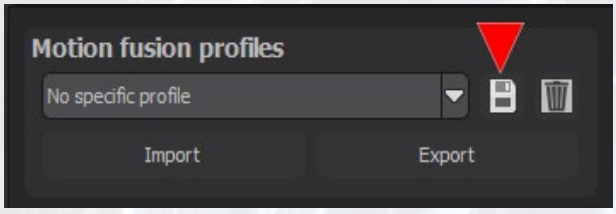


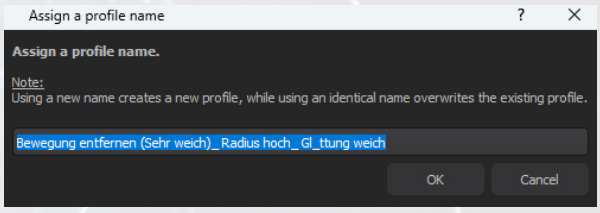
In the example, the algorithm **Remove Motion (very soft)** and the parameter settings

- **large** at the **radius**,
- **soft** when **smoothing**

A result has been achieved that is convincing in every respect.

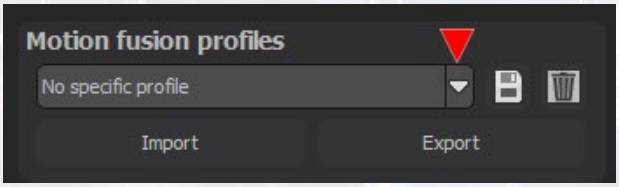
The best fusion result achieved with this combination can be quickly applied to similar motif sequences if required.

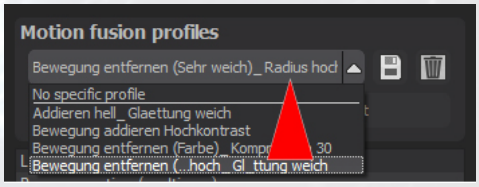




By clicking on the button, you can then assign a desired name in the dialogue box that opens, for example, **Remove motion (very soft), Radius high, Smoothing soft** (Bewegung entfernen (Sehr weich), Radius hoch, Glättung weich) and confirm your entry by clicking on **OK**.

Recall created profile

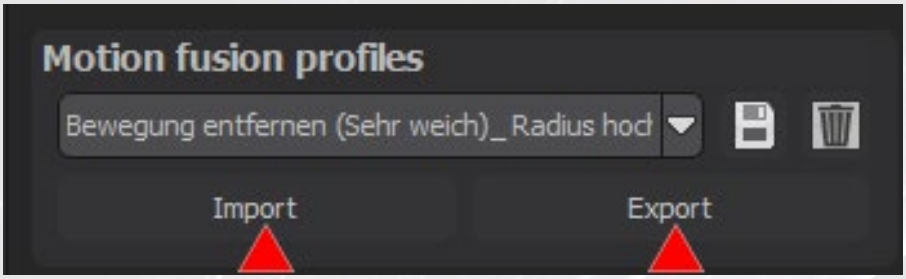




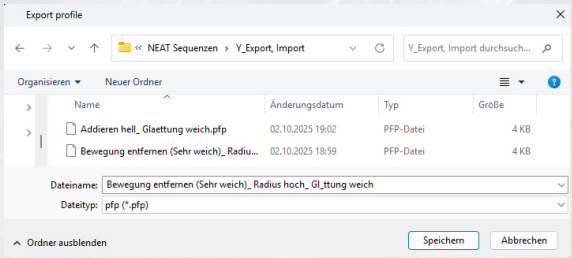
If you load a new sequence with a similar motif, **no specific profile** will be displayed by default.
Clicking on this button or the small arrow next to it will display all individually created profiles.
With a simple click, it is activated and the loaded sequence is recalculated with the saved settings.

Delete profiles: Clicking on the button with the **bin icon** will delete the current profile and remove it from the list.

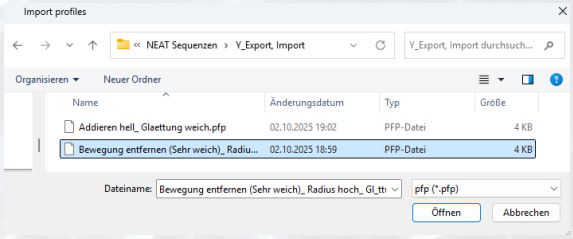
Export, import profiles



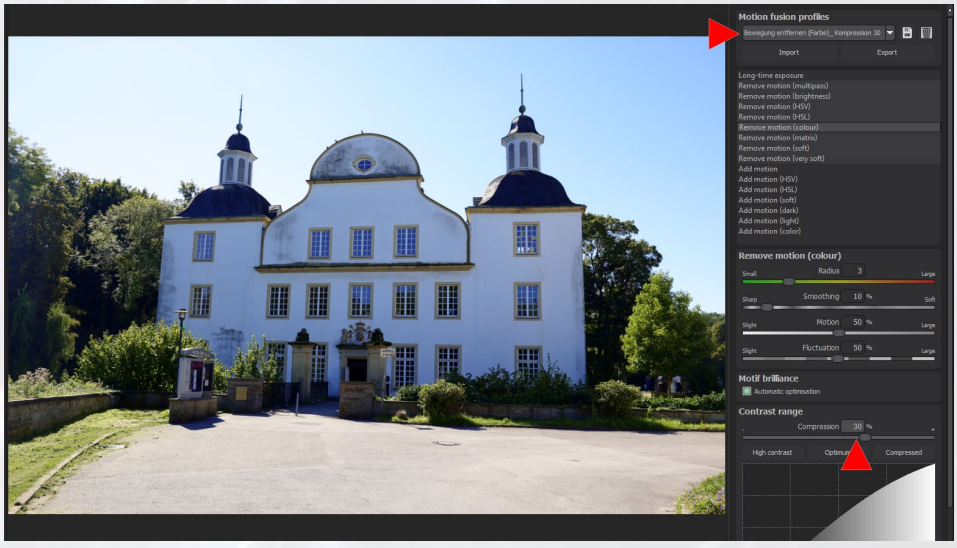
If you want to make a saved profile accessible to other users, for example, and **export** it, or try out and **import** a profile from other users, click on one of the two buttons ...



... and **export** the active profile to a folder of your choice ...

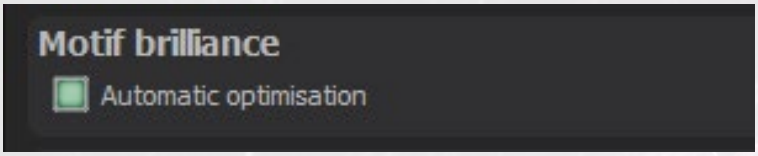


... or **import** a profile from the corresponding folder and try it out on a sequence of your choice.

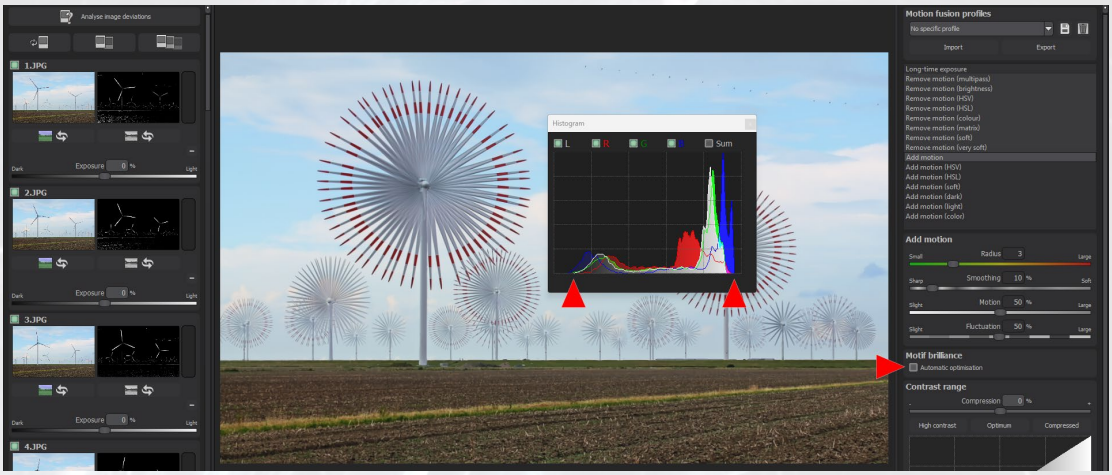


Note: All currently selected settings are saved in the individually stored profiles, including, for example, a changed contrast setting in the **Contrast range** module, as shown here in the profile **Remove Motion (Colour) Compression 30**.

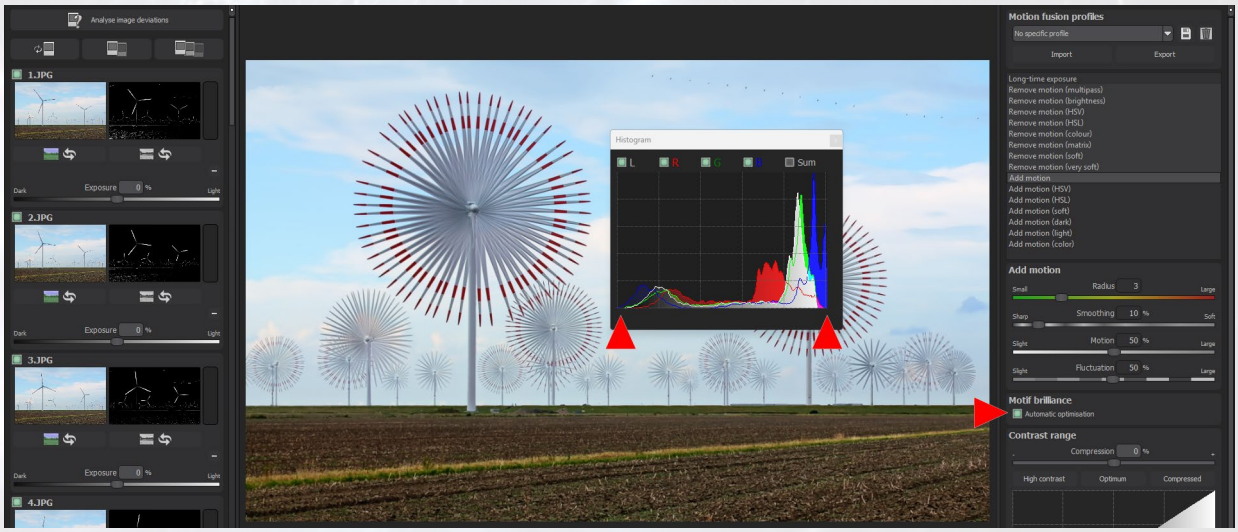
17. Motif brilliance



This module, which is enabled by default, **optimises the histogram using tone value spreading if necessary**.
Motif Brilliance checks whether **white** is **white** (right boundary) and **black** is **black** (left boundary) in the histogram showing the distribution of brightness values, i.e. whether the histogram covers the entire spectrum from white to black and enables balanced contrast.
Under optimal lighting conditions there is little or no difference between the active and deactivated module.

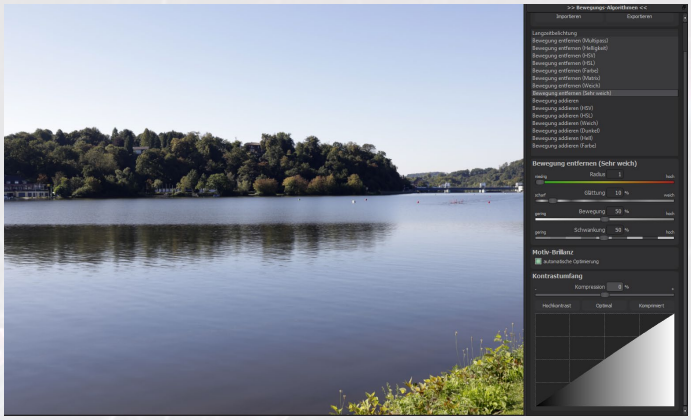


If the lighting conditions were not ideal, as in the example where the histogram was not fully utilised in the light and dark areas ('white point' too far to the left, 'black point' too far to the right), ...



... when the module is active, the tonal values are 'pulled apart' or spread out so that everything is visible.
The result is an overall image that appears **more brilliant**.

18. Contrast range



The contrast range determines the ratio between the brightest and darkest areas in the image. In this module, you can set a desired basic contrast if required, which you can select either by clicking one of the three buttons or using the compression slider:

High contrast: Automatically optimises the dynamic range to produce a **high-contrast image**.

Optimum: Sets the image to an **optimum average exposure.**

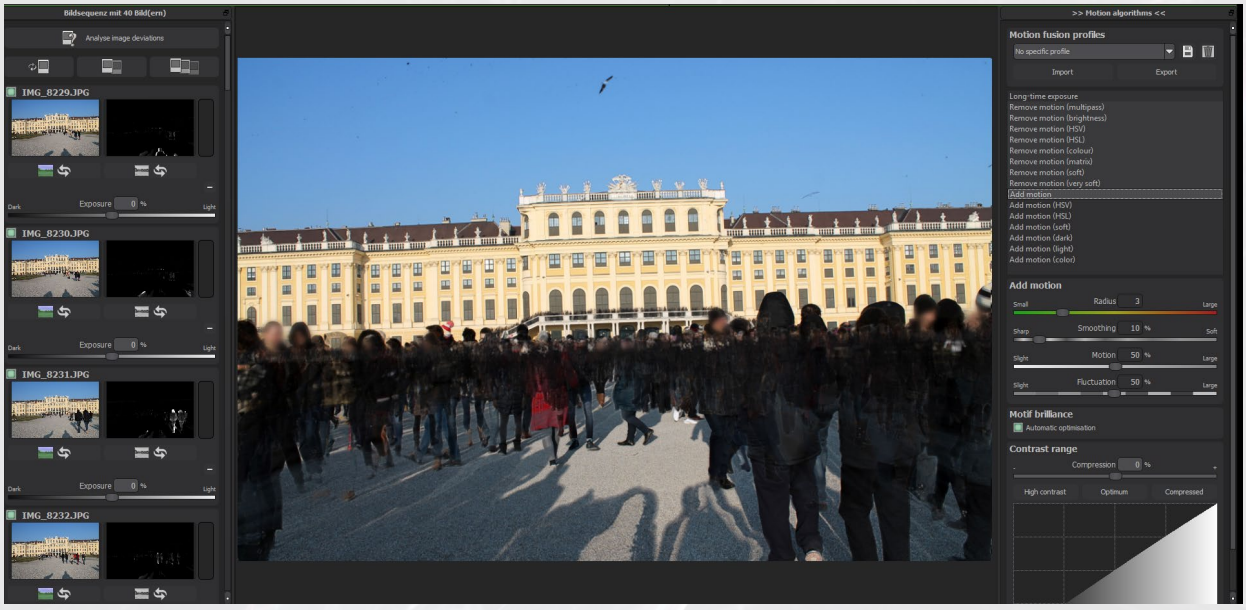
Compressed: Automatically optimises the dynamic range to a **compressed image** (positive compression value).

Compression: A **low value** (negative value) produces a **higher contrast** range, while a **high value** (positive value) produces a **lower contrast** range. The control setting always changes accordingly with one of the three presets selected. Of course, you can also set the value independently as desired.

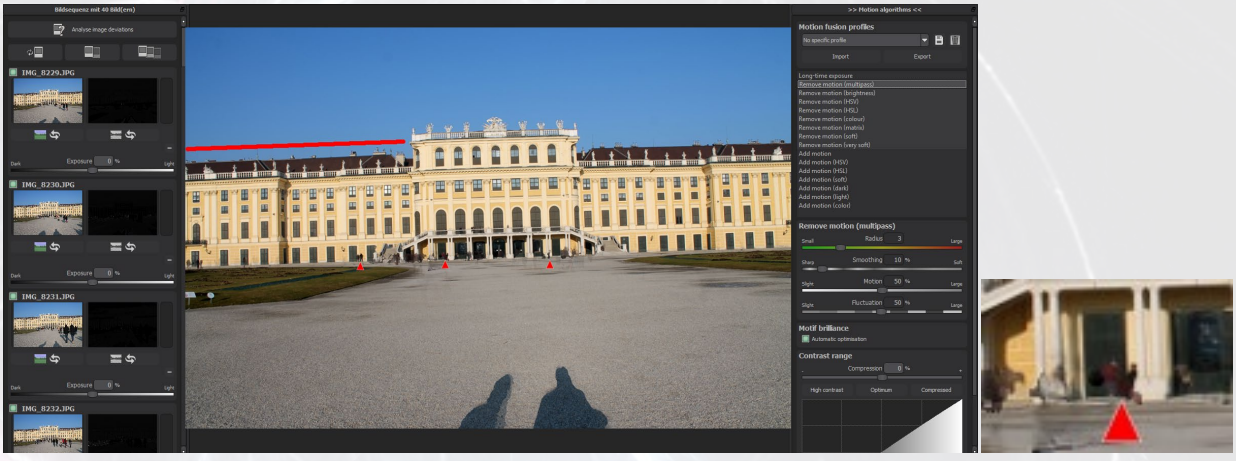
Curve display: The curve display shows the dynamic range or exposure curve for the currently set compression value.

Example Optimum: Clicking on the middle button **Optimum** makes the image appear slightly more brilliant, and the compression slider is now set to a slightly increased contrast at the negative value **-37**. The previously linear exposure line has become a slight ‘S-curve’.

19. Corrections in the RAW and sensor error correction modules



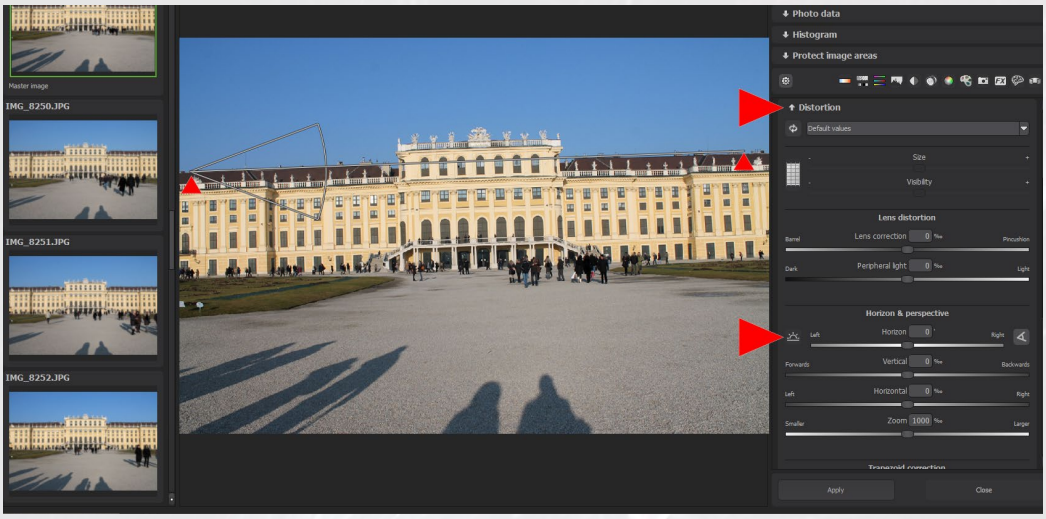
In this sequence of 40 images of Schönbrunn Palace in Vienna (source: Michael Piepgras), the selected algorithm **Add motion** shows that many tourists are obstructing the view of the palace.



In the default algorithm, **Remove Motion (Multipass)**, people who moved during the recording period have been perfectly eliminated.
Directly in front of the castle, some tourists did not move or moved very little. In the image sequence, there are also **no** individual images without people in the relevant locations that could be eliminated in the **Edit Weights** module using a combination of the **brush** and **stamping** tools.
Therefore, these areas detract somewhat from the impressive overall impression, as does the slight 'tilt' of the castle.
Both can be quickly and easily corrected in the **RAW module** and in the **Sensor error correction**.

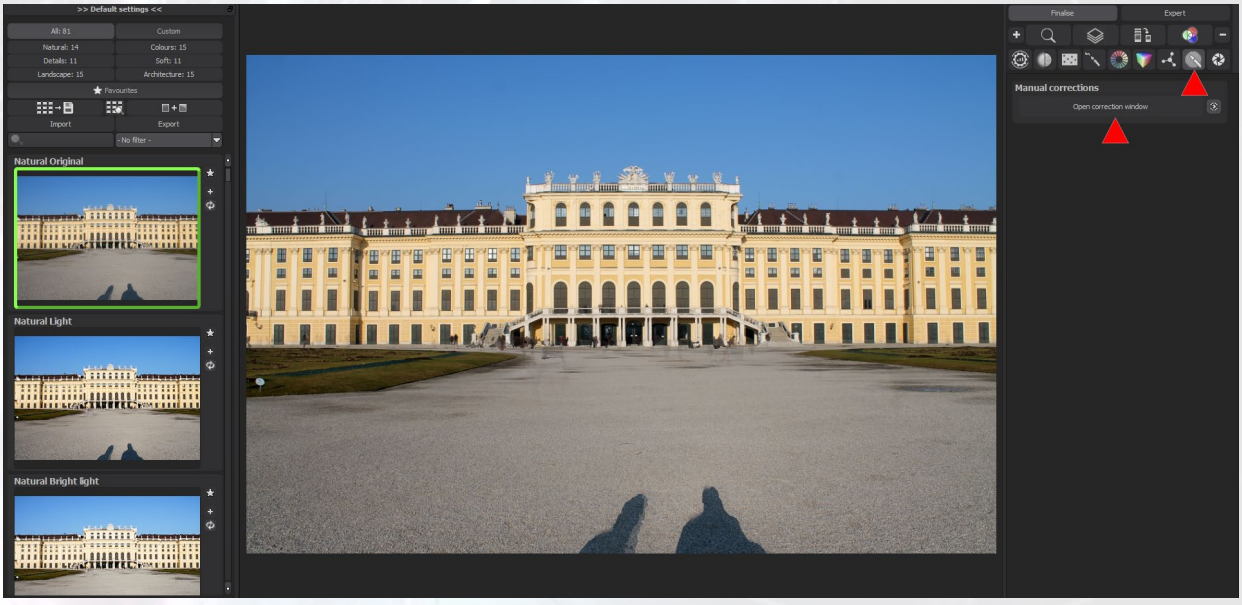
Note: Both correction options are described in detail in the guides **RAW module** and **Sensor error correction**, so only the principle with the result images will be briefly explained here.

Straighten image sequence in the RAW module



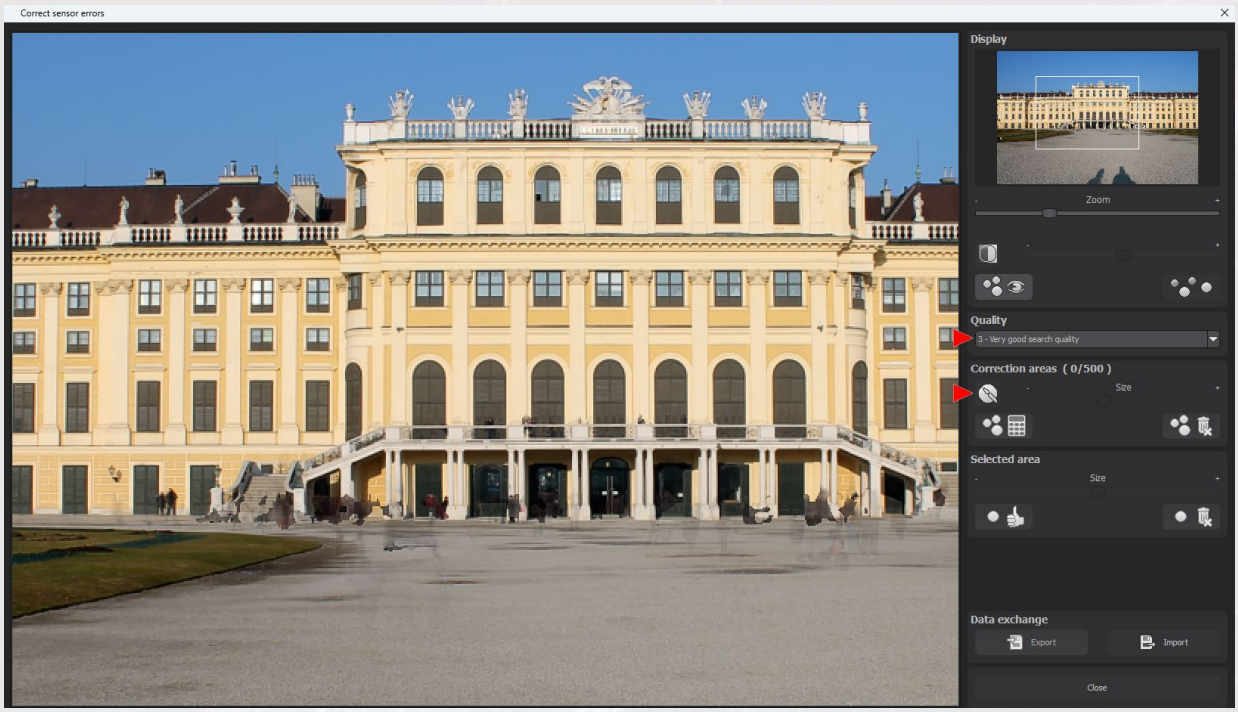
After switching to the **RAW module** and clicking on the arrow in front of **Distortion** to expand all the options available in this area, click on the **horizon icon** to activate the tool that allows you to draw a horizontal or vertical line along the horizon or, for example, a vertical wall edge.
To do this, simply click and hold the left mouse button at a starting point (in the example, on the left at the top edge of the roof) and drag the line to the desired end point (in the example, on the right at the top edge of the roof). As soon as you release the mouse button, **NEAT** aligns all images in the sequence synchronously.

Correcting faults



After switching to post-processing, you will see the 'interim result' in a preset of your choice, in this example **Natural Original**. Click on the **Sensor error correction** button in the toolbar to display the module and then click on the **Open correction window** button to switch to the **Correct sensor error** window.

The placement mode automatically replaces selected disturbances

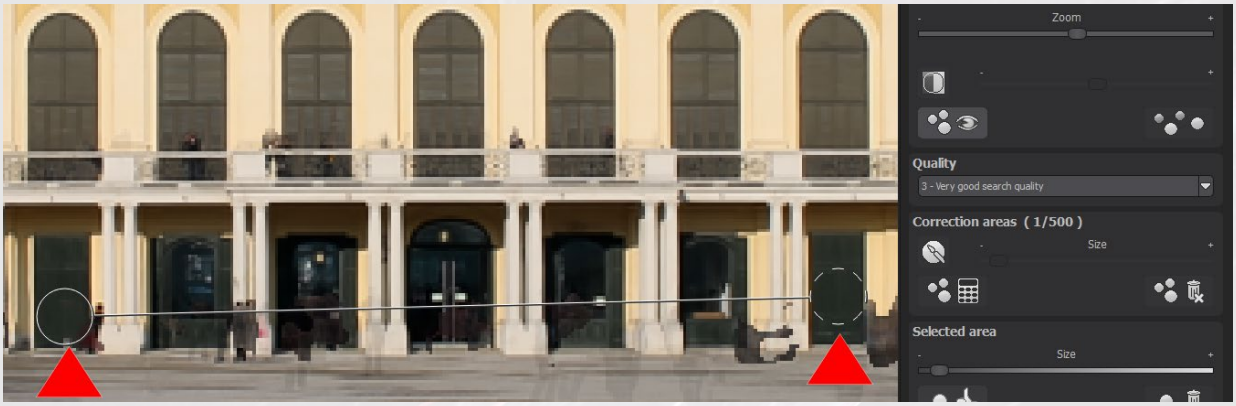


In the **Correct sensor error** editing window, you will see the large image area in the centre and all the tools and editing options on the right-hand side.
In most cases, removing imperfections are quick and easy with **one** tool such as the **brush** tool or **set mode**: **Activate the brush, position the circle on the imperfection, and you're done**!
Once you have located the interference spot with the circle, click to activate the automatic function and **NEAT** will instantly search the image for a **reference point without interference**, which is visualised by a dotted circle and replaces the **marked image area, i.e. the interference spot**.
Click the button with the brush icon again to mark the next interference point, etc. It is best to set the quality to **level 3: Very good search quality**.

Removing the first interference point

By clicking on the button with the brush icon, you activate the **set Mode** or **brush**, select a size that is slightly larger than the area to be replaced, and place the circle on the selected image area.

Remove further interference points



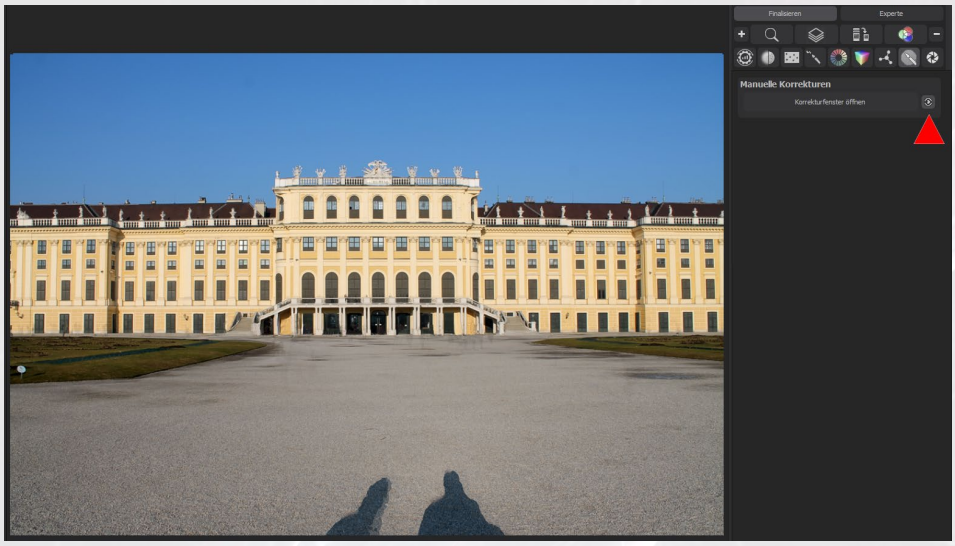
Once you have marked a fault location with the circle, the programme automatically searches for a 'suitable' comparable reference location without artefacts in the image, which can be recognised by the dotted circle.
Manual correction: If you are not entirely satisfied with the automatically selected replacement area, you can drag it in any direction by simply clicking on the dotted circle and releasing it at a position that you consider more suitable. If necessary, the position of the source area can also be corrected retrospectively using the solid circle.

Show correction areas: Clicking on button (**1**) shows **all correction areas** (37 in the example), clicking on the button on the right-hand side (**2**) shows **all correction targets**. Clicking again hides them again.

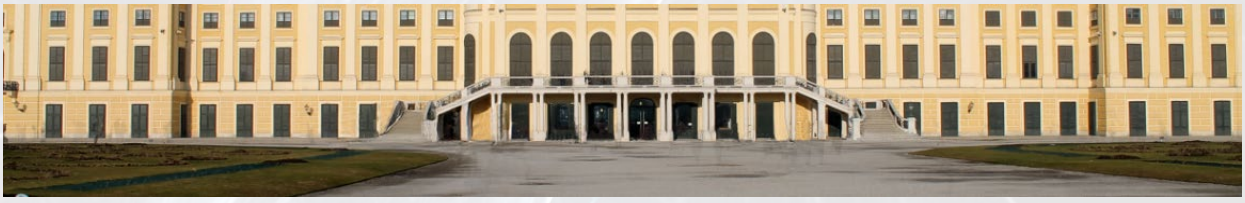
Delete correction areas: Clicking on the button with the **bin icon** and **one** circle (**3**) in front of it deletes the **selected correction area**.
Clicking on the button with the **bin icon** and **three circles** deletes **all existing correction areas**.

Save as project: Once you have made all your corrections in the **RAW module** and the **Sensor error correction** module, save the result as a project. You can then call it up again at any time and, if necessary, undo or further refine the changes in both modules.

Result image



After making all corrections, click **Close** to return to **Post-processing** and the selected preset.



The disruptive artefacts are not perfect, but they have been replaced so well and effectively that they are no longer perceived as disruptive elements...

... as confirmed by the comparison of the excerpts.
By clicking on the button with the **eye symbol**, you can switch between the editing status before and after the corrections at any time.

Note: If you select a different preset and still see annoying artefacts in some areas of the image, switch back to **Sensor error correction** and click on the button with the **pocket calculator** icon. All correction areas will immediately be adjusted to the currently selected preset.