

# PFClean 2.1 Tutorial

## Effects Stack



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## Introduction

In this tutorial, we'll show how to use multiple effects to stabilize a clip, remove flicker and fix cue-marks using the dirt removal tools. The "effects stack" is where the effects processing order is defined, and also where the effects can be managed. As new effects are added, and old ones deleted, they are added to the effects stack. The effect stack is read from bottom to top and the effects it contains are applied in that order.

[Note: For more information about the effects stack, read the document entitled effects stack overview.](#)

## Download Footage

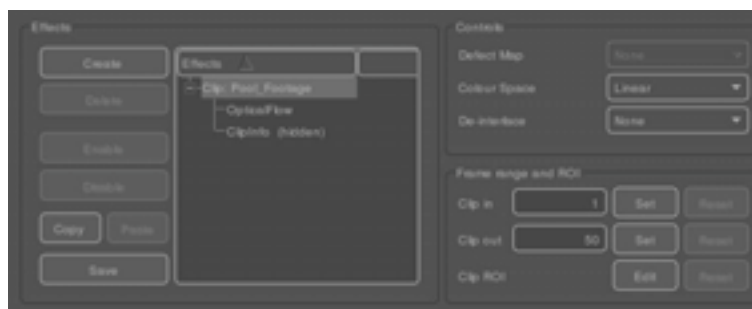
This tutorial requires you to download and uncompress the following footage to an easily accessible storage location: [http://www.thepixelfarm.co.uk/Footage/Pool\\_Footage.zip](http://www.thepixelfarm.co.uk/Footage/Pool_Footage.zip)

## Setting up footage

Load the "Pool\_Footage.####.dpx" clip into PFClean by dragging the folders into the media bins from the file browser.

Drag the clip into the media bins, highlight the clip by clicking on it with the left mouse button and press the "Select" button to select the clip for editing (or shift-double-click on the clip in the media bins with the left button).

This clip is in log space, so whilst in the clip panel, change the "Colour Space" option to "Logarithmic". This will help PFClean to improve the accuracy of operations applied to the clip.

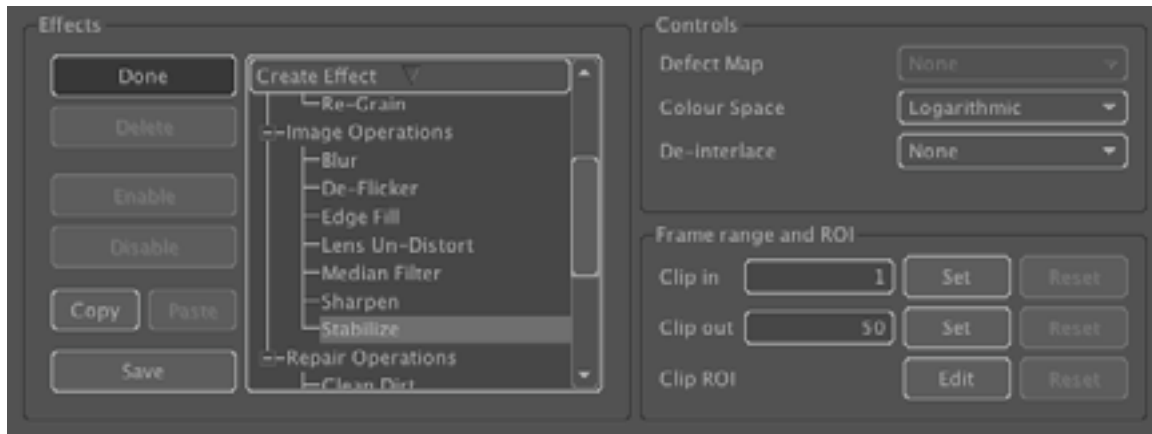


Play the clip back by pressing the "Play" button. You will see that the frame is shaking quite severely, there is significant flicker between each frame, and there are also cue marks in the top-right-hand corner of several frames. We will use a "Stabilize" effect to remove shake, "Deflicker" to correct the image flicker, and then a "Dirt" effect to clean the cue-marks.

## Create a Stabilize effect

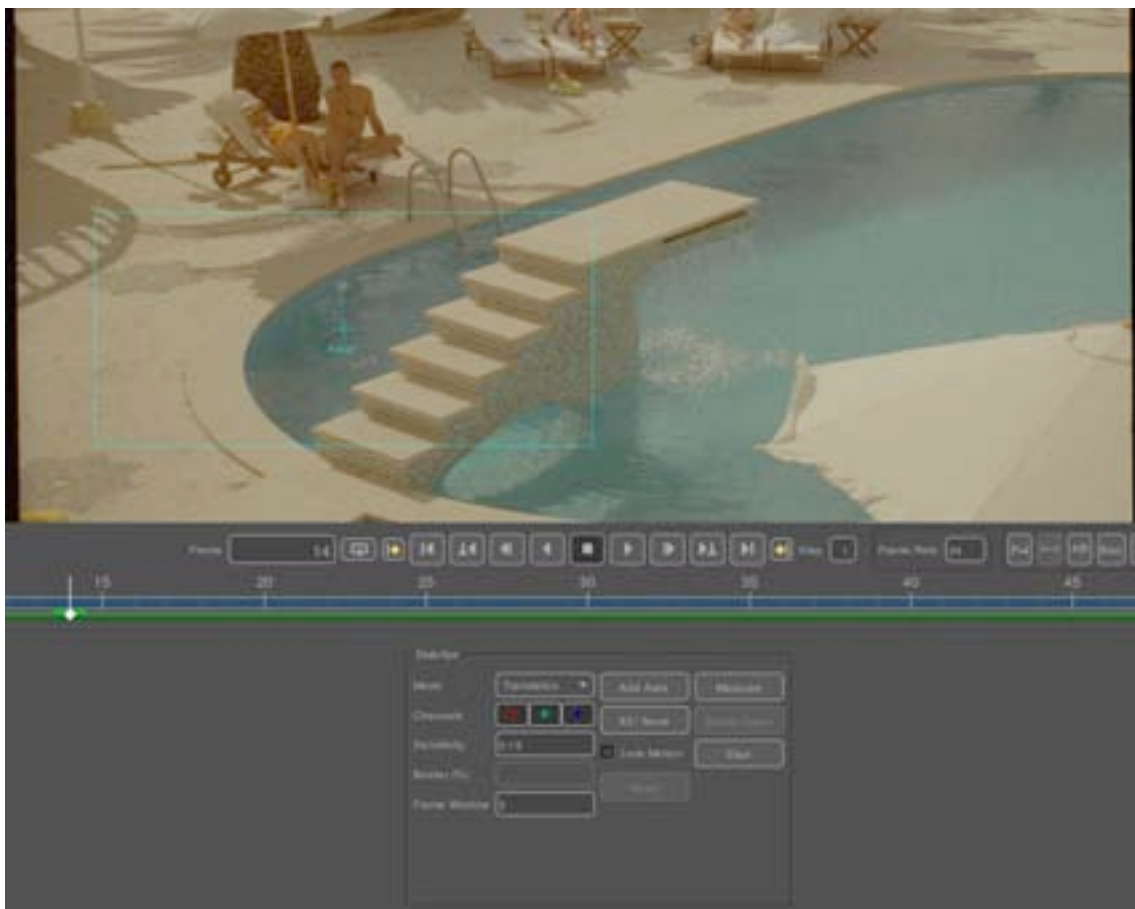
First of all, we'll remove the shake using a "Stabilize" effect.

To create a stabilize effect, click "Create" to display the list of available effects. Effect are organised into logical groups to make finding them easier. Scroll down to the "Image Operations" group and find "Stabilize". To create an effect simply click it with the left mouse button. The "Create" button has changed labels to "Done", so click "Done" to stop effect creation and switch to the Stabilize toolset.



You will see a purple overlay drawn in the viewer window that indicates the area of the frame that will be stabilized. By default, this is set to the border region around each frame, and the size of this region is controlled by the "Border" parameter.

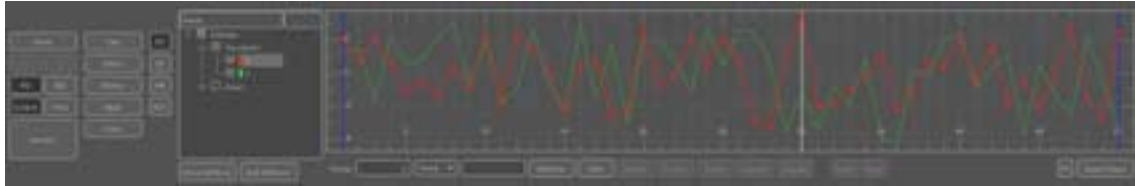
Alternatively, you can also stabilize using image data from specific areas of the frame, which is the method we will use in this tutorial. This will speed up the stabilization because only pixels inside the area will be examined. To specify which area to stabilize, click the "Add Area" button and then draw a rectangle in the viewer window. Click and hold the left mouse button to place the centre of the rectangle, then move the mouse to adjust the size. Try and place the rectangle somewhere that does not contain a lot of different types of motion (see image below).



In this example, we would like to remove all of the shake from the clip, so click the "Lock Motion" box to tell PFClean to try and lock the rectangle into the same place in each frame. Now, press the "Start" button to start the stabilization process.

After a few moments, the effect will finish processing. Try playing the clip through again and you will see that the motion has been removed.

To see the transformation that has been applied to every frame, click the "FC" button to switch to the F-Curve editor. Click the tick-mark called "Stabilize" to show the parameters. You will see x and y translation curves, along with the parameters describing the area you added before. Un-tick the "Area1" parameters to just show the x and y translation. You can edit these curves by first clicking on a curve name with the left mouse button to highlight it, and then using the F-Curve editing tools to adjust the parameters (see the PFClean documentation for more details).



Once you're finished, click the "Clip" button again to switch back to the clip toolset.

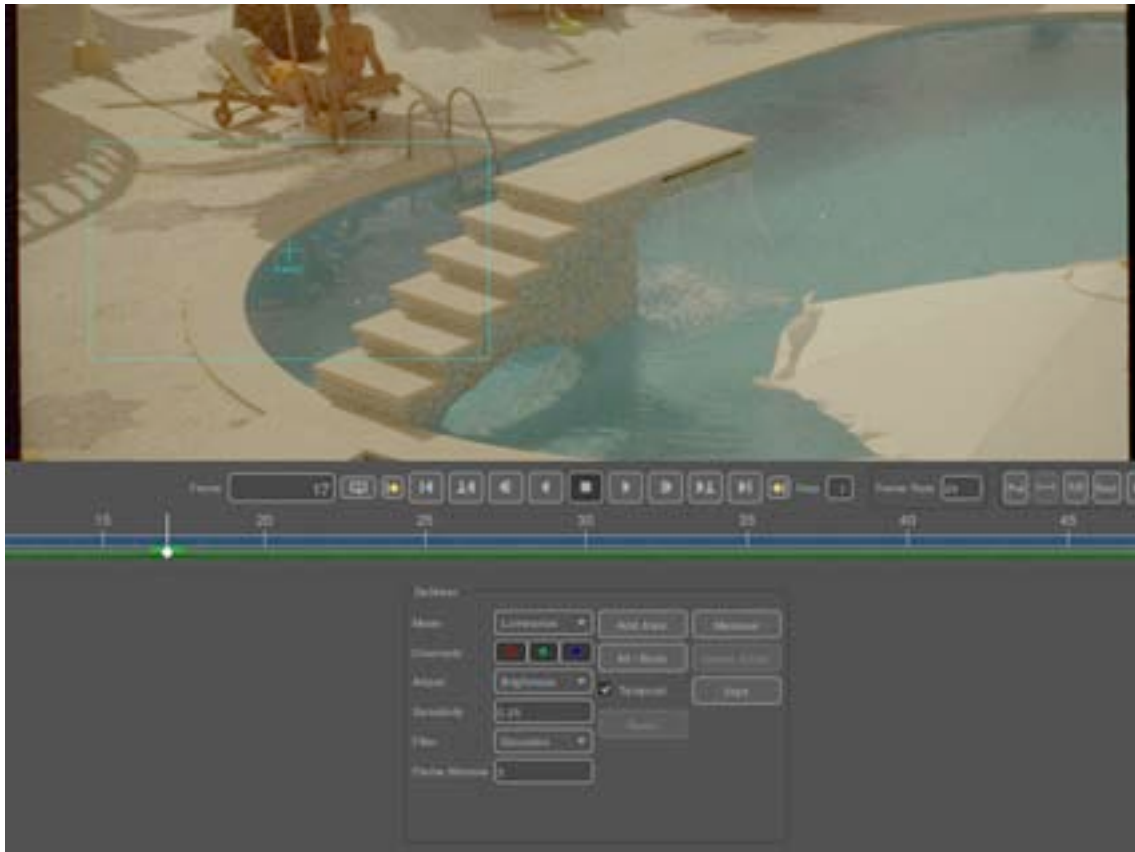
### **Create a De-Flicker effect**

The next step is to remove flicker, so create a new "De-Flicker" effect again by clicking on the "Create" button, click on "De-Flicker" and then press the button again to switch to the deflicker tools.

Looking at the clip, you will see that flicker seems to be happening equally in all channels, so first of all we will change the De-Flicker "Mode" to "Luminance". This will mean that flicker is estimated using the luminance channel of each frame.

Again, we will add an area to estimate the flicker to speed up the processing. Click the "Add Area" button and draw a rectangle in the clip in an area that does not contain large amounts of motion (see below).

To estimate flicker inside this area, press the "Start" button and wait for the processing to finish.



After it has finished, play through the clip again and you will see that the flickering has been removed. You can examine the adjustments that have been made to the image brightness by clicking the "FC" button again and looking at the function-curves in the editor.

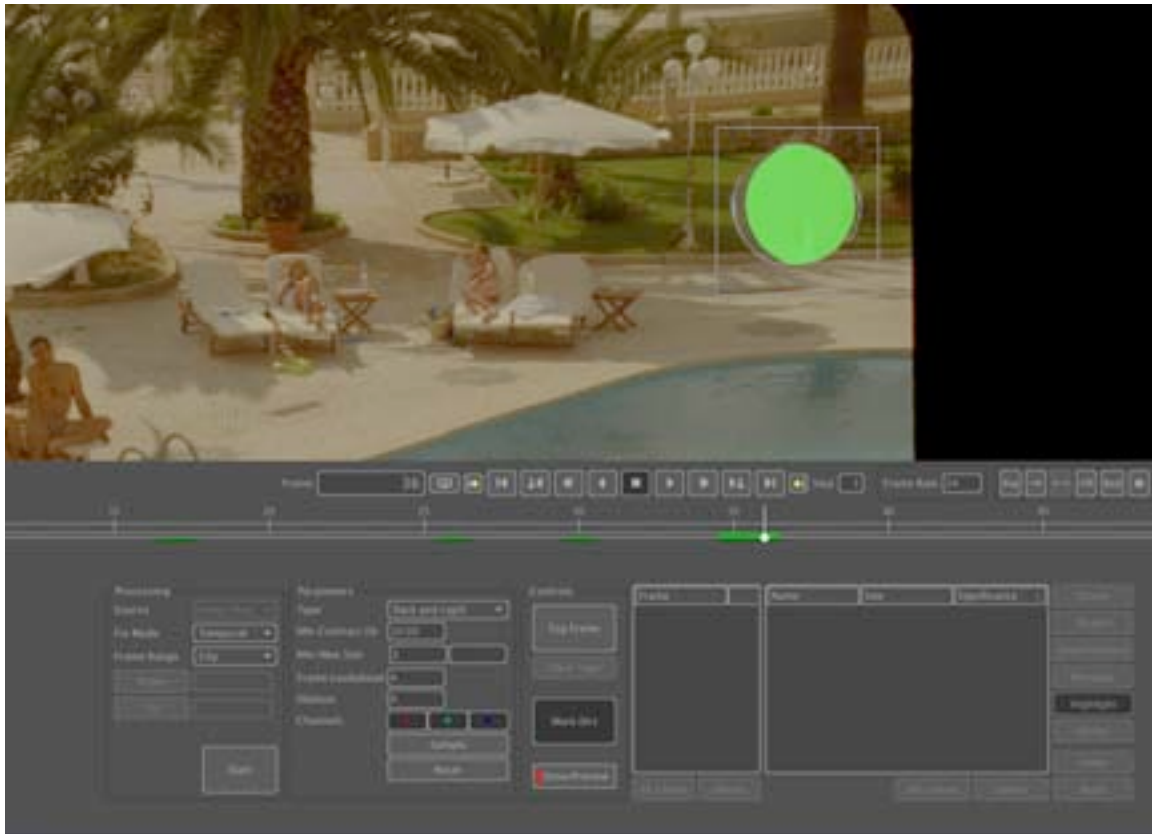
### Removing the cue-marks with a dirt effect

The final step is to remove the cue-marks in the top-right of the clip. To do this, we'll use a "Clean Dirt" effect. Repeat the steps described above to create a "Clean Dirt" effect (you find it in the "Repair Operations" section), and switch to the effect's toolset.

You can see that the cue-marks are present in frames 36 to 39. To remove them, we will use a temporal fix, and take pixels from other frames to clean the cue-marks. Because the mark is present in multiple frames, the first step is to increase the "Frame Lookahead" parameter to "4". This will tell PFClean to look 4 frames behind and 4 frames in front when removing a cue-mark.



To start removing a cue-mark, press the "Mark Dirt" button and draw a rectangle around the cue-mark by clicking and dragging with the left mouse button. When you release the left mouse button, you will see that most of the cue-mark will have been replaced by pixels from other clean frames. If some parts of the cue-mark are still visible (for example, around the edges) then you can draw additional rectangles over the remaining errors until the entire mark is removed.



Move to another frame using the left and right cursor keys, and use the "Mark Dirt" button again to remove the cue-marks in all 4 frames.

Once you have finished, click "Done" to stop editing the clip and switch back to the media bins. You can now export the cleaned clip by dragging it into the "Export" panel (see the PFClean documentation for more details).

