# TOKYO

Tokyo PiPinator for Final Cut Pro X

Tokyo PiPinator is an advanced but simple-to-use Picture-in-Picture effect designed exclusively for Final Cut Pro X that brings the power of menu-driven animation and a wealth of useful features to creating elegant and original composites without the need for keyframing. In fact, if there's anything you need to animate and you want to do it quickly, PiPinator is the ideal tool.

Overview

Tokyo PiPinator can be found in your FCP X Effects library and there are six modules to choose from, making it easier to find the ideal set-up for the task in hand.

While the effect is perfect for single image Picture-in-Picture effects, it's very easy to use multiple layers of the effect to build up elaborate composites.

The aim of Tokyo PiPinator is to give you the maximum control over every aspect of the effect combined with the maximum ease of use, so you can spend your time being creative without having to worry about keyframes. Any changes are very quick to make and equally quick to fine tune, whether it's motion path, scaling, rotation, cropping, image offset, border and more.   You design - PiPinator takes care of the rest.
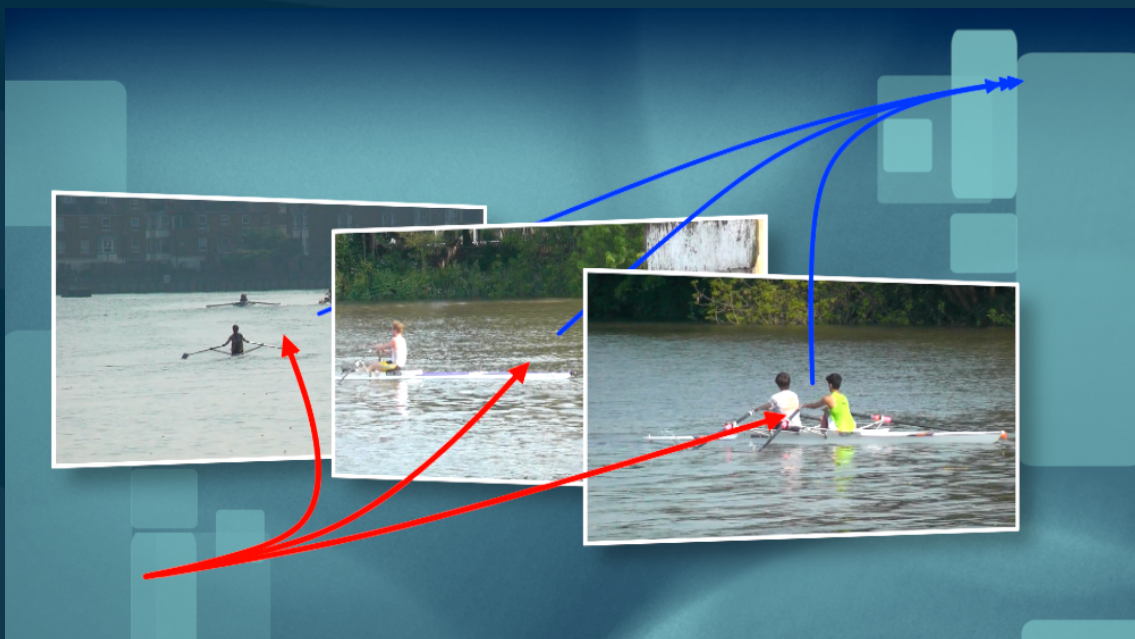
New in PiPinator 2.0

- **Bounce, spring and other oscillation behaviors**: add "elasticity" to position, rotation, shear and scale parameters with full timing controls;

- **Improved reflection control**s: add photorealistic blur, and adjust apparent distance to floor;

- **Drift stop function**: provides the option to stop drift behavior before end of clip.

IMPORTANT NOTE: These new features are only available if you use the new Elasticator module - they are not included in any of the other modules, which have been left the same in order to avoid compatibility issues with existing projects. Elasticator replaces the PiPinator Pro module which is now obsolete.


Operation

NAMING CONVENTIONS

In this manual we will be using the term "frame" to refer to the Picture-in-Picture element. The incoming animation is referred to as the "Arrive" and the outgoing animation is the "Depart" and the portion of the animation in between in called the "Hold".

PiPINATOR MODULES

There are five modules, plus the New Elasticator module, to be found under Tokyo PiPinator in your Effects Browser.
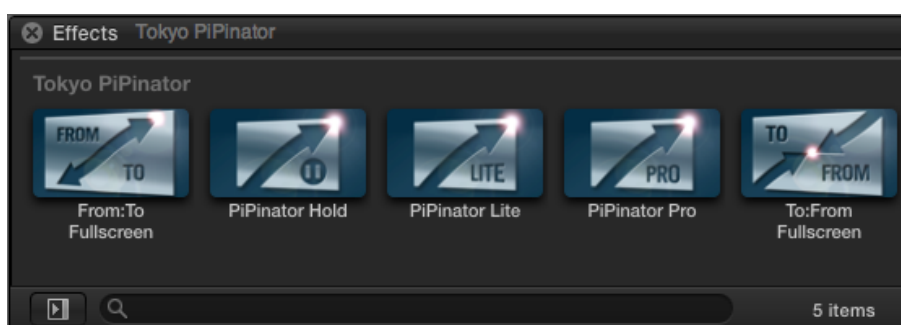
* **PiPinator Pro** gives you access to the maximum level of control of all parameters but might be a bit daunting when you're starting out as there are many to choose from. (This module is now obsolete - all its functions are available in the new Elasticator module.)

* **Elasticator** is identical to PiPinator Pro but incorporates the new features of PiPinator 2.0. It is recommended that advanced users migrate from PiPinator Pro to this new module to take advantage of these updated features.

* **PiPinator Lite** gives you a lot of the same control as the Pro version but with fewer parameters to wade through and may be an easier place to start getting familiar with the effect.

* **PiPinator Hold** is optimised for situations where you don't need either the Arrive or Depart move animations. All the other controls are available including Drift which allows for optional movement throughout the duration of the effect. This will help you get the effect set-up quicker in these situations as you don't have to zero out the position controls.

* **From:To Fullscreen** is optimised for situations where you want to take a fullscreen image, shrink it down to a smaller size, then restore it to fullscreen. You can of course do this with both **Pro** and **Lite**, but you will definitely find it quicker to use this module for this purpose.

* **To:From Fullscreen** does the opposite and is optimised for situations where you want to zoom an image up to fullscreen, hold at fullscreen and then shrink back down again.

Both the **Fullscreen** versions have a reduced set of parameters to reflect the different needs of these two operations but that shouldn't limit their usefulness.

Note that if you want no animation at all (apart from maybe drift), all you have to do is set the two speed values to zero and you will have a continuous hold phase.

This manual will detail principally the controls available for the **Pro** module, indicating where relevant which parameters are not available for the two **Fullscreen** modules.

APPLY THE EFFECT

From the Effects library drag the Tokyo PiPinator effect onto a clip in your timeline and you're ready to go.

The effect allows you to control both the incoming ("Arrive") animation and the outgoing ("Depart") animation as well as the "Hold" behavior in between, and each of these options is controllable separately from the others.

TIP: If your source frame size is not in the 16:9 aspect ratio it is best to make a compound clip of it before applying PiPinator, otherwise the effect won't work entirely as expected. If you want to use the full area of the image make sure to composite it over a background. (Using the Fill Spatial Conform does not get around this requirement unless you also compound the clip - it may look right but it won't work otherwise.)

Let's first of all look at the motion path animation.

MOTION PATH

The motion of your frame can be controlled using the onscreen controls in the canvas. You will see that there are two coloured lines with an arrow at the tip showing the direction of travel.
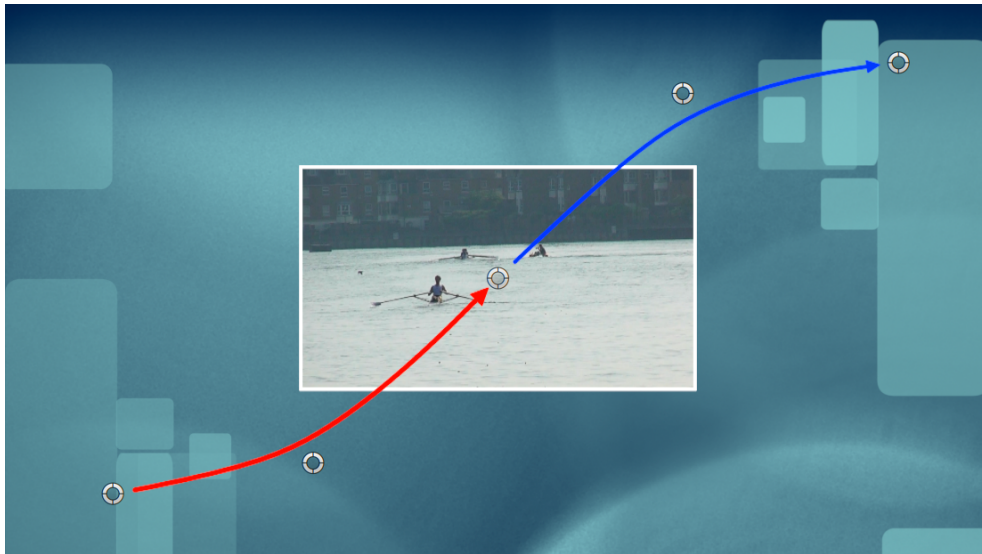

The red line indicates the arrive path and the blue one indicates the depart path and where they meet in the middle will be the "hold" position of the animation. Both arrows have a start, end and mid-point. Grab any of these controls and move them as you want to plot out your desired motion path.

The midpoint control uses a B-spline curve which means that the control "influences" the point rather than affecting it directly, so don't panic if the control is not tied to the control line at all times. This is normal behavior.

TIP: You can of course have the frame begin entirely offscreen and have it depart entirely offscreen. In order to do this you will probably want to reset the FCP display size to something like 25% so that you can see any offscreen positions that you may choose. When you're done you can reset the display to Fit.

Once you are happy with your motion path, you can use the control at the top of the Inspector to turn off the overlay. You will still be able to see the onscreen control points but the coloured lines will disappear.
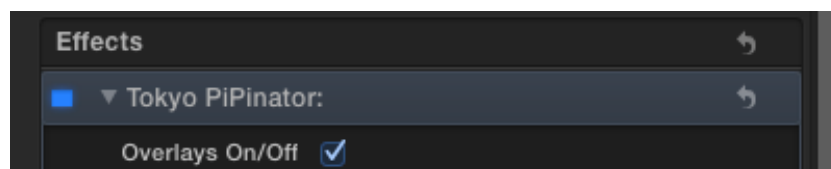
It is also possible to adjust the motion path control points using the Inspector (see below).

TIP: If for any reason you can no longer see the onscreen controls, make sure to click on the top of the effect tab in the Inspector and you will get them back. Also be aware

that resetting the effect doesn't always return the onscreen controls to their default position, but dragging any one of them in the canvas will update the reset.

*NOTE: The two Fullscreen versions have fewer control points, one for **From:To Fullscreen** and two for **To:From Fullscreen**. This reflects the fact that the fullscreen position stays locked to the centre and does not want or need to be moved and is designed to make setting up the effect as quick and simple as possible If you find you need more control, switch to using the **Pro** version.*

GRID

Talking of overlays, there is the option to turn on a reference grid to simplify the layout process and from the Grid Options pop-up menu you can select the grid aspect ratio options from 16:9, 4:3, 'Scope (2.35:1) or Square. (Not available in the Lite version.)

SPEED

Now that we've looked at the motion path, let's look at the Speed controls.
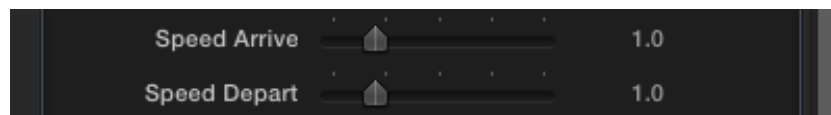
There are two speed controls, one for the arrive and one for the depart animation timings. These are global settings which affect all the animated parameters equally (with the exception of the overall fade controls which are handled separately). This means that you don't have to worry about synchronising all the different features of a complex animation - everything will arrive and depart in perfect sync.

If you don't want to use either the incoming animation or the outgoing animation and would prefer the hold to continue during that phase with nothing animating, all you have to do is set the Speed Arrive or Depart value to zero.
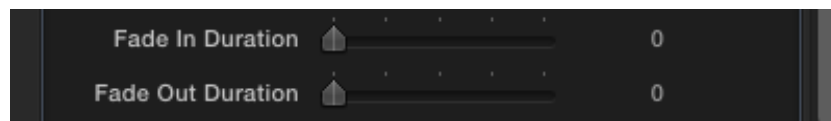
NOTE: The Lite version has one speed control that affects Arrive and Depart speeds equally.

IMPORTANT NOTE

There is however one feature to notice here. The values used in these controls presuppose that your clip length is precisely ten seconds in which case a value of 1 will equal one second and a value of 5 will equal five seconds. However if your clip is shorter or longer than ten seconds these values will be scaled. So if your clip is only five seconds long, a value of 1 will yield an animation timing of half a second; if your clip is 20 seconds long that same value will yield a timing of 2 seconds. (This is due to an oddity in the way Apple have implemented timing control.)

FADE

As mentioned above, there are controls for the global fade in and fade out of the effect which act separately from the global animation timings, so for example you can have a global animation that runs for 2 seconds but only fade in or out over half a second.
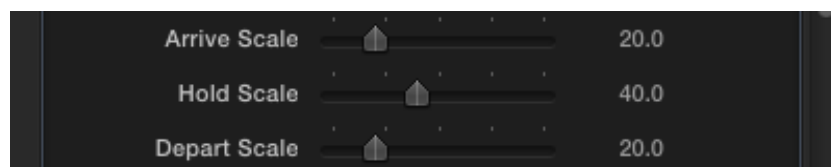

The same considerations about the values of these timings apply as discussed above, with a value of 1 equating to one second if the clip length is precisely ten seconds.

NOTE: The Lite version has one fade control that affects Fade in and out speeds equally.

SCALE

Working down the Inspector menu, we come to the scale controls, Arrive Scale, Hold Scale and Depart Scale.

These values can each be adjusted separately and their timings are controlled by the global speed control. The default values of 20/40/20 give you an animation of your frame that starts at 20%, grows to 40% and holds, and then departs towards a final size of 20%.

These values can of course be adjusted any way you want them. Note that a value of zero will shrink the frame to nothing, if desired, while a value of 100% will mean the frame is the full width and height of the canvas.

If you don't want the frame to scale at all and instead hold a fixed size throughout, simply set all three controls to the same value.

If you want the scaling to continue during the hold phase then look for the Scale Drift controls described below.

*NOTE: Arrive and Depart Scale are not available for the **From:To Fullscreen** module and conversely Hold Scale is not available for the **To:From Fullscreen** module.*

ROTATION

As with scale, you can control the arrive, hold and depart rotation of the frame independently and on any or all of the three axes, X, Y and Z. You can choose the Rotation Anchor Point from the pop-up menu - but note that the anchor point operates from the uncropped edge so if you are using cropping you might notice that the edges don't necessarily match up.
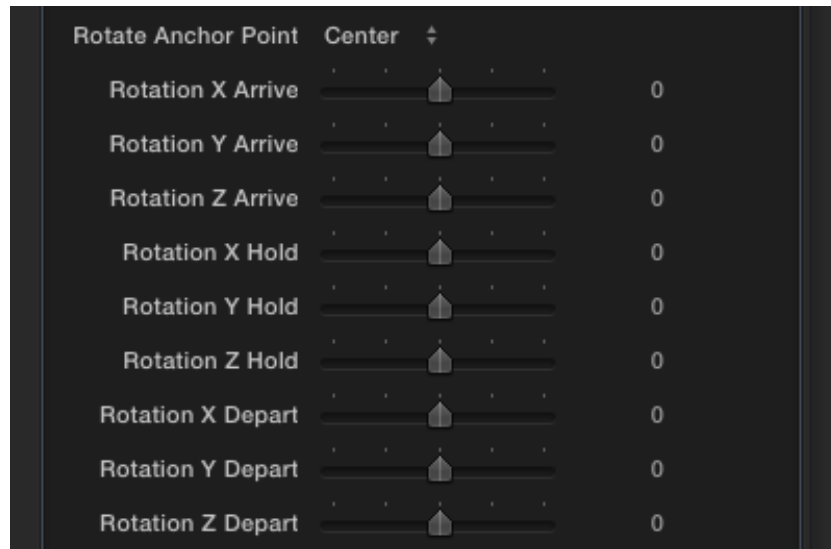
The defaults for all these values is zero, meaning there is no rotation on any of the axes. As with the scale option, you can control the initial rotation of the frame (the Arrive phase), the hold rotation (how much the frame stays rotated during the Hold phase), and the rotation value at the end of the Depart phase. For example, values for the Y rotation of -20/20/-20 would give an animation in which the frame starts rotated 20 degrees to the left, rotating to a constant 20 degrees right during the hold phase, and animating towards a final value of 20 degrees left again.

If you want the rotation to continue during the hold phase then look for the Rotation Drift controls described below.

*NOTE 1: The **Lite** version has controls for the Hold rotations only. If you want the frame to rotate into position, use a multiple of 360 degrees on the relevant Hold rotation control.*

*NOTE 2: Arrive and Depart Rotation are not available for the **From:To Fullscreen** module and conversely Hold Rotation is not available for the **To:From Fullscreen** module.*

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CROP AND OFFSET

One of the most tiresome problems in designing Picture-in-Picture effects is managing the dynamic cropping and offsetting of the image. This is where PiPinator really comes into its own because all those fiddly processes become extremely easy to control and fine tune without giving you a headache.

As with Scale and Rotate, you can independently affect the start (Arrive), hold and final (Depart) Crop with just a few sliders.

For ease of use, the crop options are limited to equal amounts to both left and right, and/or equal amounts to top and bottom, but this doesn't mean that you are limited in how you frame your image. It's a simple matter to use the offset controls to get just the framing you want once you're happy with your crop.

Note that a crop value of 1 gives no cropping at all, while a value of zero crops the frame to nothing. This is something you might want to exploit creatively so that the image "wipes" on or off from the center.

The offset controls work just the same as the crop controls and allow you to reposition the image within the frame on either the X or Y axis or both.


*NOTE 1: The **Lite** version has controls for the Hold crop and offset only which means you cannot animate these parameters. You will need to use the **Pro** version if this is essential to your design.*

*NOTE 2: Arrive and Depart Crop and Offset are not available for the **From:To Fullscreen** module and conversely Hold Crop and Offset are not available for the **To:From Fullscreen** module.*

POSITION, ROTATION AND SCALE DRIFT

Very often you will not want to have your frame locked into a static state during its hold phase and this is where the drift controls come in.

These enable you to have your frame continue to "drift", whether in terms of position, rotation or scale or any combination, during the hold phase.
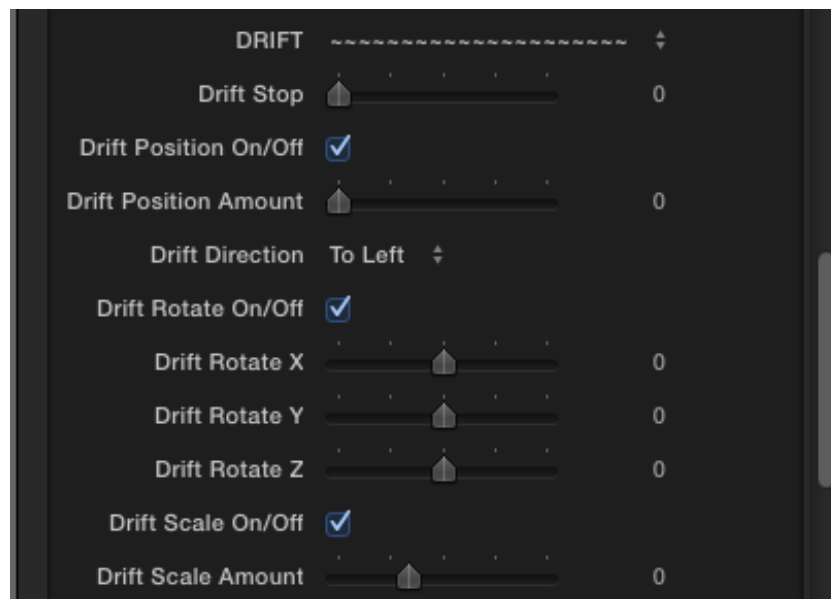

New in PiPinator 2.0 (and only available in the Elasticator module) is the option to have the drift come to a stop before the end of the clip rather than carry on continuously. Adjust the Drift Stop to enable this effect - increasing the value will cause the drift to stop earlier. A value of zero has no effect and will let the drift carry on as normal, a value of .5 will stop the drift halfway through the clip, and a value of 1 will effectively turn the drift function off altogether since it will stop the moment it starts!

Each of these options has a global on/off switch so you can easily enable or disable the effect without having to reset any of the values.

The Drift Position Amount slider affects the force of the drift, higher values moving the frame faster and lower values slowing it down.

The Drift Direction pop-up menu allows you to choose which direction you want for the positional drift:
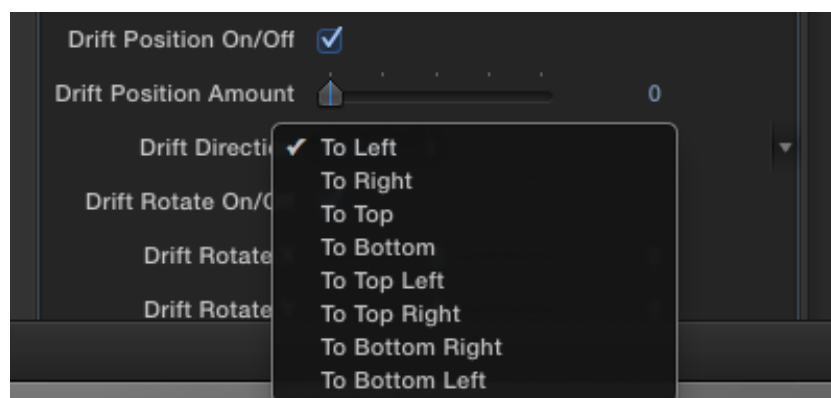
Drift Rotation can be affected in any or all of the X, Y or Z axes using the appropriate sliders which are calibrated in degrees. For example a negative value on Y will rotate the frame towards the left and a positive value will rotate it towards the right.

*NOTE 1: For simplicity, the **Lite** version does not have checkboxes to turn off the drift options. This should not be a problem as the defaults are "off" anyway and stay that way until you change them.*

*NOTE 2: Drift is not available as an option for either the **From:To Fullscreen** or **To:From Fullscreen** modules.*

ELASTICITY

A major new feature of PiPinator 2.0 (and only available in the Elasticator module) is the option to implement bounce, spring and other types of oscillation in addition to the other animation parameters built into PiPinator.
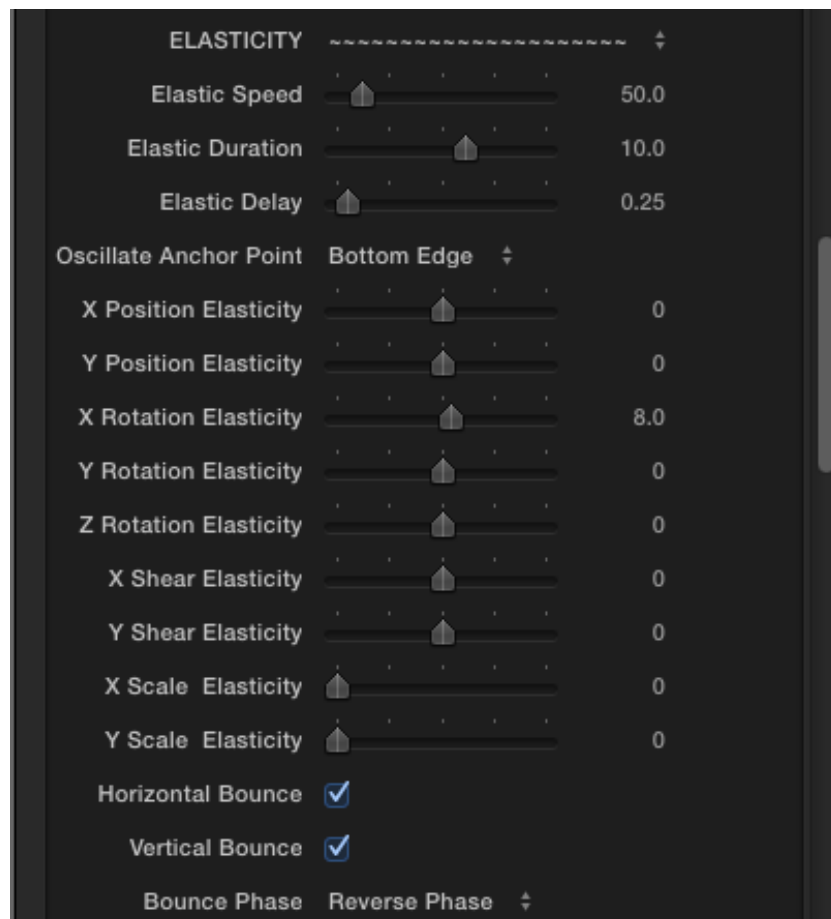
The options include **X and Y Position Elasticity**; **X, Y and Z Rotation**; **X and Y Shear**; and **X and Y Scale.**

The Position controls will make the image bounce (or spring) left and right, or up and down.

The Rotation controls will create an oscillation on the chosen axis (or axes).

The Shear controls will shear the image backwards and forwards on the chosen axis (or axes).

The Scale controls will stretch the image left and right or up and down on the chosen axis (or axes). Remember to set equal values for both X and Y if you want a uniform scale oscillation.

The values of these sliders affect the amplitude of the oscillation behaviors - the greater the value the further the image will bounce, spring or swing.

The elasticity animation will slow down in a natural way as the initial "energy" decreases.

The **Elastic Speed** parameter will determine the frequency of the oscillation, in other words the speed of the bounce, spring or swing. The greater the value the faster the speed.

The **Elastic Duration** parameter will affect how long the oscillation lasts before it slows to a complete stop. A value of 10 will cause the stop to happen at the last frame of your clip. With a higher value you can have it stop later (in other words the animation will still be continuing when the end of the clip is reached), and with a lower value you can have the oscillation come to a stop before the end of the clip.

The **Elastic Delay** parameter allows you to fine tune when the oscillation begins. If you are using PiPinator to have your image fly onto the screen and then bounce or spring, you will want to make sure that it is not bouncing or springing visibly during the arrive phase. Adjusting the delay will enable you to get a realistic effect.

The **Oscillate Anchor Point** menu allows you to choose the centre point of the oscillation behavior. You can choose from Center, Left Edge, Right Edge, Top Edge, Bottom Edge (the default), Top Left Corner, Top Right Corner, Bottom Right Corner and Bottom Left Corner.

Note that this anchor point affects the Rotation, Shear and Scale oscillation only and not the other animation behaviors. Note also that it does not affect the X and Y Position oscillation (see below).

If you want to change how the X and Y Position Elasticity behaves, in other words if you would prefer a spring-like behavior rather than the default bounce behavior, then you can deselect either the **Horizontal Bounce** switch or the **Vertical bounce** switch or both.

With the switches enabled the image will appear to hit an obstacle, floor, edge or ceiling and bounce back away from it.

The value of the X or Y Position Elasticity control will determine which direction the bounce will take. A positive value on Y for example will cause a vertical bounce as though the image has hit the floor, whereas a negative value will make the image look as though it has hit a ceiling.

Similarly, if you want to make the image bounce off the left edge of the screen, for example, you would set the X Position Elasticity control to a positive value, whereas if you wanted it to bounce off the right edge you would use a negative value.

Deselecting either switch will remove the bounce-like behavior and the image will look as though it's attached to a spring and there will be no "obstacle" to its movement.

Finally you can use the **Bounce Phase** pop-up menu to determine the phase of the positional oscillation when set to bounce mode to assist in setting up natural-looking animations. This option will effectively invert the oscillation wave. This control is best used in combination with the **Elastic Delay** value to fine tune the impact phase of the bounce animation.

Remember that all the elasticity animations will add to any other animation that you have already set up, both Arrive and Depart, and Drift.

BORDER OPTIONS

The next section gives you control over the border of the frame, including border color, blend mode, width and opacity.
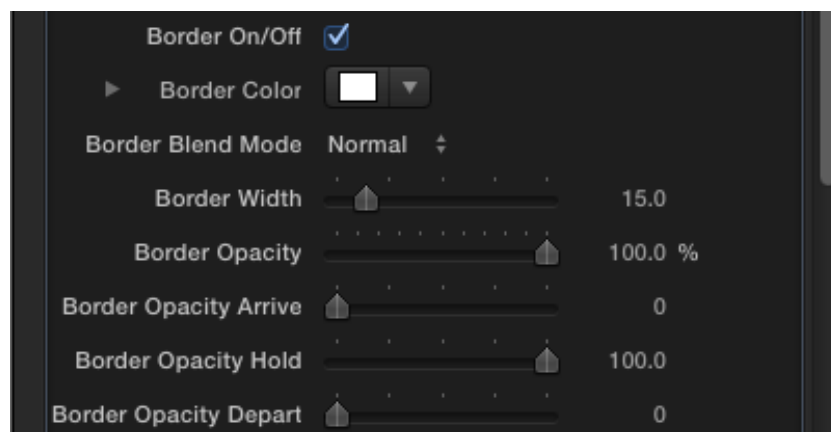

There are also the usual animation options for Arrive Opacity, Hold Opacity and Depart Opacity. The defaults for these are 0/100/0 so that the border fades in at the start and fades out at the end while being fully opaque during the hold phase. This is to facilitate animating to and from fullscreen where the border needs to fade rather than be visible at the start and end. You can of course set all these values to 100 if you don't want this fade behavior.

Note that the fade animation has been calibrated differently from the overall timing speed control with the border fading in much quicker than the other animated parameters in order to avoid a slow and ugly long fade in or out of the border.

*NOTE: Arrive and Depart Border Opacity are not available for the **From:To Fullscreen** module and conversely Hold Opacity is not available for the **To:From Fullscreen** module.*


DROP SHADOW

Next we come to the Drop Shadow section with a master on/off checkbox and controls for opacity, blur, distance and angle.
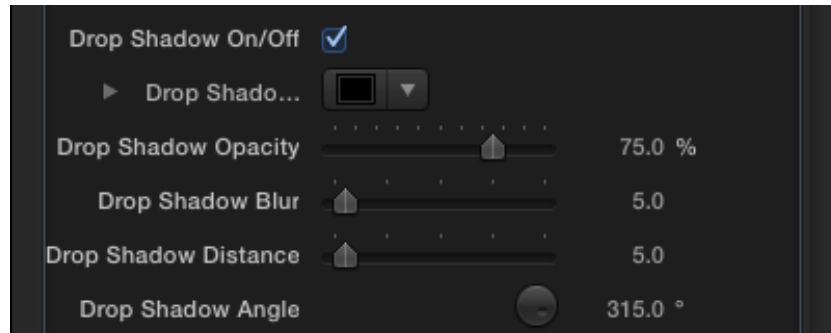
CORNER ROUNDNESS

The roundness of the frame corners can be animated just like any of the other parameters already discussed, so that you could have the corners start square, become rounded for the hold phase and return to square at the end.
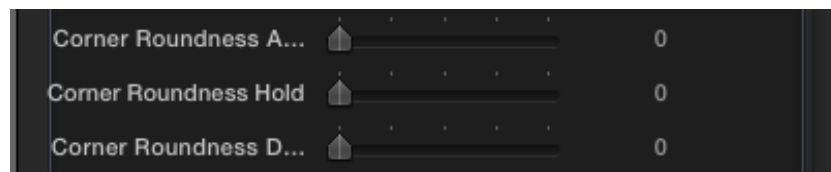
The defaults for these values is zero which means there is no corner roundness at any stage until you adjust one or other of the controls.

*NOTE 1: The **Lite** version has only one control for Corner Roundness which means you cannot animate this parameter.*

*NOTE2: Arrive and Depart Corner Roundness are not available for the **From:To Fullscreen** module and conversely Hold Corner Roundness is not available for the **To:From Fullscreen** module.*

REFLECTION

If you want a reflection for your frame, then turn on the control, adjust the Opacity (the intensity of the reflection), and adjust the offset if you want the frame to appear to be floating in space above the "floor".

TIP: Usually you will want to use reflection with a fairly neutral background - black or white both work very well, but gradients can also look fine and of course if you've got an obvious "cyc" type background, or an actual photographic floor at the right angle, the effect will look great. You simply want to make sure that there's a plausible "floor" area in your image and you'll be OK.

New in PiPinator 2.0 (and only available in the Elasticator module) is the ability to adjust the apparent distance of the picture-in-picture image from any floor background that you may have. The default may work for most cases but if you are flying in your image from the top of the screen, you may find that the reflection intersects the background and hence doesn't appear to be cast on the floor. You can use the **Floor Adjust** parameter to compensate and PiPinator will automatically adjust the maths to give you the right result.

Also new in PiPinator 2.0 (and only available in the Elasticator module), you can now use the **Reflection Blur** control to add a photorealistic blur to the reflection to simulate a floor that is not 100% reflective. The blur increases the further it gets from the source image, just as in the real world.

FEATHER

For different kinds of looks for the edges of the frame you can separately control the feather of the border and the feather of the mask.
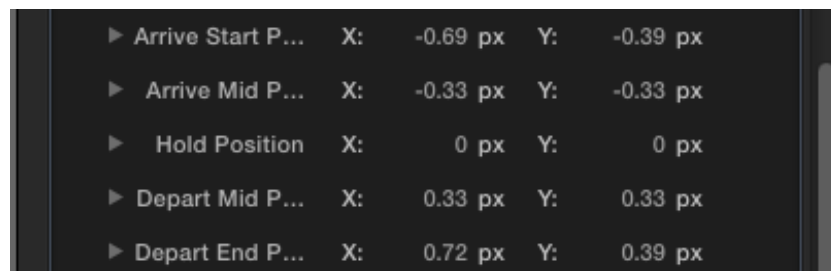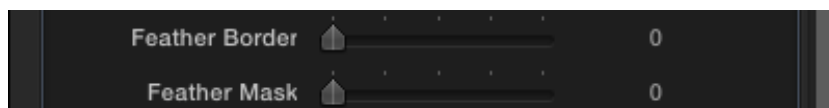

EASE ANIMATION

This slider allows you to adjust the animation curve profile with a value of zero giving a completely linear profile and a value of 100% giving an ease in (or out) effect and values in between giving greater or less of the ease effect. The ease behavior means that the Arrive animation will progress at a constant speed until it starts to reach its destination at which point it will start to slow down until it reaches the stop point. The reverse will

be the case for the Depart animation with a gentle speed up of the animation from the hold phase until it reaches a constant speed.

*NOTE: The **From:To Fullscreen** or **To:From Fullscreen** modules have a different ease behavior to suit their particular animations. Both use an ease in **and** out curve on both Arrive and Depart phases.*

ARRIVE, HOLD AND END POINTS

The next section in the menu is a set of XY position controls that allow you to enter specific values for Arrive Start point, Arrive Midpoint, Hold, Depart Midpoint and Depart End point.

	X:	Y:
▶ Arrive Start P...	-0.69 px	-0.39 px
▶ Arrive Mid P...	-0.33 px	-0.33 px
▶ Hold Position	0 px	0 px
▶ Depart Mid P...	0.33 px	0.33 px
▶ Depart End P...	0.72 px	0.39 px

You might want to use these if you need to set up very specific values for any of these variables if, for example, you were using PiPinator to set up a split screen composite and you found that it was fiddly to do with the onscreen controls. If you want to animate to or from fullscreen you might also want to zero out the XY values for the appropriate point(s), although it is easy enough to use FCP X's dynamic guides to get the frame centered if you prefer doing it that way.

*NOTE: Although the Arrive and Depart Position controls are available for the **From:To Fullscreen** module it is best to leave them at their defaults of zero. Similarly with the Hold Position control for the **To:From Fullscreen** module.*

For support and further information contact: support@tokyo-uk.com

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