

## 19. DVE Effects Menu

DVE effects contain a wide palette of motion effects, including standard effects like wipes as well as effects that “animate” and deform images in 2D and 3D space. Also, there is a class of effects analyzing motion in images to stabilize a sequence or track an object moving through a scene.

### Creating a DVE Effect

You can place a DVE effect in the reel by selecting the desired effect from the menu using the mouse.

If one or more clips are selected in the reel, an effect clip is created for each of them and placed on top of the bar in the reel. Its length will be exactly the same as the length of the underlying clip object. Its effect extent or scope will be set to comprise the clip the effect is “fitted” to.

If nothing is selected from the reel, the new clip will be placed at the current position of the Reel cursor (see “Cursors and Markers” on page 43) and it will have a length of one (1) second.

Effect length and scope (see “Effects Clip: Fx (Red-Orange)” on page 50) can be changed any time with the dragging operations described in the Reel reference manual: With the right and left mouse button the clip can be trimmed, while the effect scope can be dragged with the mouse left button to the extent desired.

### Effect Parameters

Effect parameters can be adjusted by opening the Time Editor window (see “The Time Editor” on page 85) and selecting the clip to be modified. Its parameters, if any, will then be displayed as timecurves in the time editor window. For 3D effects and colors, special editors may be invoked from the timecurve editor window as well (see “3D View” on page 91 and “Color View” on page 96).

Some effects, like DVE 3D, can be applied to any number of layers. The Time Editor by default does only display track parameters for one layer. If more layers are added to the effect by changing the effect scope, for each additional layer the command AddTrack must be invoked from the Time Editor Track Menu. This will create a new set of track parameters for the new layer. Likewise, when a layer is removed, parameter sets can be deleted using DeleteTrack (although it is possible to keep the unused parameter set for further reference or later reuse). See “Track” on page 99 for more information.

Motion Tracking effects require definition of a pattern to track. For this purpose, the Pick Editor is used.

When programming motion effects, try not to use more key frames than necessary for the desired effect. Unnecessary control points make it harder to modify effect later on. See “The Time Editor” on page 85 for more information on control points and keyframes.

## Chapter Organization

The remainder of this chapter is organized as a separate manual page for each effect clip available. There is:

- A short description of the effect
- A list of possible inputs, denoting if image, alpha information, or both are used to calculate the effect
- A description of the output in image and mask (alpha) channel
- A parameter description. There can be two types of parameters:
  - Global parameters are present once and control global effect operation
  - Track parameters are present once for each input track
- A comment section where applicable
- A reference to other related effects

## 19.1 DVE 3D

### Description

The 3D DVE effect allows you to move, scale and rotate any number of input channels in true 3D space, composited in front of a background layer. Intersections between images are handled correctly.

Additionally, each input layer can be separately displacement mapped. Displacement mapping is a technique producing true 3D extrusions of portions of layers, controlled by a second layer. This is in contrast to pseudo 3D effects like bump and distortion that look realistic when seen from the front, but leave flat images when seen rotated in 3D.

A wave bump map for example can produce a convincing wavy look on a running move when the image is not rotated, but in rotations it will look as if a photo of the wave is rotated - and a photo is flat. In contrast, displacement mapping will really deform the image in the third dimension.

### Inputs

One or more inputs are required:

1. Input 1: The background layer underlying the input layers. If the background parameter is switched off, the first input is handled like a normal foreground input.
  - Image only, and, if used as foreground, optionally alpha.
- Input 2... Input N-1: Input layers to be moved in 3D. Each input layer has a parameter “Displacement” in its track parameter set. If this parameter is activated, the following input layer is not used as an input layer to be moved in 3D, but as a displacement map for the input layer with the displacement parameter activated. The luminance values of the displacement map determine height of the resulting displaced “3D image”, with values of 50% being “sea level”, 0% being valleys and 100% being mountains.
  - Image and, optionally, alpha.

### Outputs

- Image: The composite/3D render of the motion effect
- Mask: With background active: An empty (opaque) mask. Without background active: The combination of all input track masks.

### Parameters

The 3D DVE effect has hierarchic parameters: Global parameters for camera zoom, antialiasing quality and ambient lighting, and individual track parameters for each light source and each input layer.

You can add further parameter sets for input layers by using the AddTrack or CopyTrack commands from the time editor menu bar. To add a new light source, choose AddLightTrack from the menu bar.

## Global Parameters

- Camera/Wide: Perspective parameter. Increasing this value moves the viewpoint away from the object, but at the same time the zoom is changed so that image size does not change. Values closer to 0 give wide angle lens effects.
- Camera/Antialiasing: Activates rendering with antialiasing, i.e. suppression of ‘jaggies.’ Slows down rendering process.
- Camera/Background: Determines if the first input track is used as background or as a foreground track. If background compositing is deactivated, the 3D output can be used in other composites, as masks are then passed through.
- Ambient/Intensity: Intensity of the ambient (undirected) lighting of the scene.

## Light Track Parameters (Light 1)

A new light can be created by picking an existing light track (one does always exist) and selecting the AddTrack command from the Time Editor menu bar. The light parameters of the new light will initially be a copy of the light selected.

- Light/Direction/X/Y/Z: The direction the light shines from. Light direction can be controlled using a manipulator in the 3D View. The manipulator is only visible when a light track (subdirectory) is selected.
- Intensity: Light Intensity.

## Image Track Parameters (Input 2)

- Track/TransX/Y/Z: Translation of the track in X, Y and Z
- Track/RotX/Y/Z: Rotation of the track about the X, Y and Z axis. Multiple rotations can be achieved by setting the angle to multiples of 360°.
- Track/ZoomX/Y/Z: Scaling of the track in X, Y and Z.
- Track/Displacement/Enable: Enable displacement mapping. If this parameter is set to 1, the next input track is not interpreted as a foreground object anymore, but its luminance is used to deform the actual track. A track used as displacement map does *not* have any track parameters; if there was a parameter set created for this track, the next input will “move up” to use it.

In this sense a track parameter set with displacement enabled is an exception to the normal rule: With displacement mapping enabled, a single set of track parameters controls two input layers.

- Track/Displacement/Sub: Polygonal subdivision of the object to be deformed. This parameter will be ignored when displacement mapping is disabled. Generally speaking, higher subdivision values will increase rendering quality. Rendering speed will be slower with high subdivision values.
- Track/Displacement/Blur: A blur applied to the displacement map before doing the displacement. This is very helpful to remove small bumps caused by “noisy” real life video input and to maintain a smooth surface. Also it helps to remove banding artifacts.
- Track/Hilight/Intensity: The strength of highlight effects on 3D DVE results of the track.

- Track/Hilight/Sharpness: The size of highlights.

## Comments

There is a specialized editor for programming 3D effects. See “3D View” on page 91 for more information.

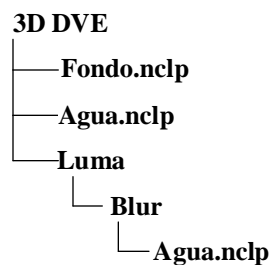
The 3D View and Monitor display of 3D renderings with displacement mapping may be misleading, as fine details will probably not be visible in the low resolution display. To see the actual result, use the Single Field/Frame view or Monitor high resolution mode once in a while.

If banding effects or undesired small bumpy textures appear on the displaced surface, use the blur parameter to remove these effects.

As a displacement map, you can use other images as well as the output of the noise effects, or the stripe or wave pattern generators (see “Wave Patterns” on page 248 and “Stripe Patterns” on page 250). With the noise generators, all kind of fractal or wavy patterns can be created quite easily.

In many cases, especially when “real life” images are involved, it helps to place the input for the displacement under a blur and luminance filter. Too much detail is not ideal for good displacement maps.

Here is an example setup for displacement maps:



**FIGURE 52. Non-Additive Mix Example**

## See Also

“3D View” on page 91

“Noise” on page 237

“Plasma” on page 240

“Wave Patterns” on page 248

“Stripe Patterns” on page 250

## 19.2 DVE Background

### Description

2D DVE effect to scale, move (in 2D) and rotate (in Pseudo-3D) any number of input tracks in front of a background track

### Inputs

2 or more Inputs:

1. Background Track
  - Image only
- Input 2... Input n-1: Image tracks to be moved
  - Image and mask; the mask is used to cut out part of an image

### Outputs

- Image: A composite of the transformed inputs 2... n-1 in front of the background
- Mask: An empty (opaque) mask

### Global Parameters

None.

### Track Parameters (Input 2ff)

- RotX/Y/Z: Rotation about the x, y or z axis (in degrees).
- Wide: Depth or perspective.
- ZoomX/Y: Zoom (or scale) value.
- MoveX/Y: Movement in X/Y

### Comments

As usual, for each further input track, use AddTrack from the time editor menu to create a new parameter set.

### See Also

“DVE 3D” on page 191

## 19.3 DVE No Background

### Description

2D DVE effect to scale, move (in 2D) and rotate (in Pseudo-3D) any number of input tracks without a background track

### Inputs

1 or more Inputs:

- Input 1... Input n: Image tracks to be moved
  - Image and mask; the mask is used to cut out part of an image

### Outputs

- Image: The transformed inputs 1... n
- Mask: A combined mask of all input tracks

### Global Parameters

None.

### Track Parameters (Input 2)

- RotX/Y/Z: Rotation about the x, y or z axis (in degrees).
- Wide: Depth or perspective.
- ZoomX/Y: Zoom (or scale) value.
- MoveX/Y: Movement in X/Y

### Comments

As usual, for each further input track, use AddTrack from the time editor menu to create a new parameter set.

Without doing a composite of the result in front of a background, the result may look as if it was not antialiased. However, the generated mask is just not premultiplied with the image channels, as otherwise no antialiased compositing would be possible.

### See Also

“DVE Background” on page 194

## 19.4 DVE With Shadow

### Description

2D DVE effect to scale, move (in 2D) and rotate (in Pseudo-3D) any number of input tracks in front of a background track. It will also project a shadow from each of the foreground tracks on the background.

### Inputs

2 or more Inputs:

#### 1. Background Track

- Image only
- Input 2... Input n-1: Image tracks to be moved
  - Image and mask; the mask is used to cut out part of an image

### Outputs

- Image: A composite of the transformed inputs 2... n-1 in front of the background
- Mask: An empty (opaque) mask

### Global Parameters

None.

### Track Parameters (Input 2ff)

- RotX/Y/Z: Rotation about the x, y or z axis (in degrees).
- Wide: Depth or perspective.
- ZoomX/Y: Zoom (or scale) value.
- MoveX/Y: Movement in X/Y
- ShadX/Y: Shadow displacement relative to the image track
- SInt: Shadow intensity. 0 signifies no shadow.
- SBlur: A blur to make the shadow soft edged.

### Comments

As usual, for each further input track, use AddTrack from the time editor menu to create a new parameter set.

### See Also

“DVE Background” on page 194



## 19.5 Shadow Mask

### Description

2D DVE effect to create a shadow mask of any number of scaled, moved (in 2D) and rotated (in Pseudo-3D) inputs and places it in the alpha channel of the background track. It does the same shadow creation as the DVE with Shadows, but does not create images nor composites. This effect can be used to create a shadow mask to be piped in a compositing effect.

### Inputs

Two or more Inputs:

1. Background Track
  - Image only
- Input 2... Input n-1: Image tracks to be moved
  - Image and mask; the mask is used to cut out part of an image

### Outputs

- Image: The background tracks image channels are piped through
- Mask: The shadow masks created from the remaining input tracks

### Global Parameters

None.

### Track Parameters (Input 2ff)

- RotX/Y/Z: Rotation about the x, y or z axis (in degrees).
- Wide: Depth or perspective. Default is 1.33
- ZoomX/Y: Zoom (or scale) value.
- MoveX/Y: Movement in X/Y
- ShadX/Y: Shadow displacement relative to the image track
- SInt: Shadow intensity. 0 signifies no shadow.
- SBlur: A blur to make the shadow soft edged.

### Comments

As usual, for each further input track, use AddTrack from the time editor menu to create a new parameter set.

### See Also

“Composite” on page 164

## 19.6 Motion Stabilize & DVE

### Description

The Motion Stabilize effect uses motion tracking to follow the motions of a selectable pattern of the image. Then, the knowledge about this motion is used to apply the inverse motion to the input, in effect stabilizing the image sequence. This is typically used to remove unwanted “jitter” from recordings.

The motion curves created by the tracking process can contain movement and optionally rotation and scaling information. All automatically generated motion curves can be hand-edited in the time editor. If scaling is activated, the image will be scaled up so that the selected pattern fills the screen.

To actually perform the motion tracking, use the pick editor from the Tools menu in the reel. See “Pick Editor for Motion Tracking” on page 102 for more information.

### Inputs

1. The input to be stabilized.
  - Image and, optionally, alpha

### Outputs

- Image: The stabilized image channel
- Mask: The stabilized mask channel

### Parameters

- RotX/Y/Z: Rotation about x and y axis in degrees. Motion tracking only generates z-axis rotations.
- Wide: Depth or perspective. This curve is not generated by the tracking process but can be adapted later manually.
- ZoomX/Y: Scaling in x and y in percent of monitor width
- MoveX/Y: Movement in x and y, given in percent of the monitor width. The results of the motion tracking are actually put in the Centrate parameter below.
- CentX/Y: After applying the motion tracking, contains the inverse of the motion detected and is applied like motion to the image.

### Comments

None.

### See Also

“Pick Editor for Motion Tracking” on page 102

“Tracking & DVE” on page 199

## 19.7 Tracking & DVE

### Description

The Motion Tracking effect uses motion tracking to follow the motions of a selectable pattern of its first input. Then, this motion is applied to the second input of the effect, making it follow the motion detected in the first input.

To actually perform the motion tracking, use the pick editor from the Tools menu in the reel. See “Pick Editor for Motion Tracking” on page 102 for more information.

### Inputs

Two inputs required:

1. A track to analyze motion in, also used as a composite background
  - Image only
2. The image clip that is to follow the analyzed motion
  - Image and, optionally, alpha

### Outputs

- Image: The animated second input composited on the first input track
- Mask: An empty (opaque) mask

### Parameters

- RotX/Y/Z: Rotation about x and y axis in degrees. Motion tracking only generates z-axis rotations.
- Wide: Depth or perspective. This curve is not generated by the tracking process but can be adapted later manually.
- ZoomX/Y: Scaling in x and y in percent of monitor width
- MoveX/Y: Movement in x and y, given in percent of the monitor width.

### Comments

If no inputs aside of the first input are available, motion is detected but of course not applied. You can use the generated curves to apply them in other effects. A good candidate for example is Corner Pin.

Using four separate motion tracking effects, you can track four points in an image and then copy the curves to corner pin to have an image follow and deform according to the points.

### See Also

“Pick Editor for Motion Tracking” on page 102

“Motion Stabilize & DVE” on page 198

## 19.8 Wipe

### Description

A programmable wipe, using either a set of motion parameters and/or a set of alpha channel tracks supplied in additional inputs.

The motion parameters available are the same as for all 2D DVE effects. Instead of animating the image, they animate the “wipe mask”. To understand that, animate the Zoom X parameter - the result will be a horizontal clip on the source track from the right and the left.

### Inputs

Two or more inputs:

1. The wipe target
  - Image and optionally alpha
2. The wipe source
  - Image and optionally alpha
3. All further inputs: Alpha used as a wipe pattern. Where there are active pixels in the union of the input masks, the target input is visible.
  - Only alpha is used

### Outputs

- Image: The “wiped” result of input 1 and 2.
- Mask: An empty (opaque) mask

### Global Parameters

- RotX/Y/Z: Rotation of the wipe mask
- Wide: Depth or perspective of the wipe mask
- ZoomX/Y: Scaling of the wipe mask.
- MoveX/Y: Movement of the wipe mask

### Comments

None.

### See Also

“Wipe Library” on page 202

“Stripe Patterns” on page 250

## 19.9 Wipe & Shadow

### Description

A programmable wipe, using either a set of motion parameters and/or a set of alpha channel tracks supplied in additional inputs. A shadow of the wipe mask is created on the wipe target.

The motion parameters available are the same as for all 2D DVE effects. Instead of animating the image, they animate the “wipe mask”. To understand that, animate the Zoom X parameter - the result will be a horizontal clip on the source track from the right and the left.

### Inputs

Two or more inputs:

1. The wipe target
  - Image and optionally alpha
2. The wipe source
  - Image and optionally alpha
3. All further inputs: Alpha used as a wipe pattern. Where there are active pixels in the union of the input masks, the target input is visible.
  - Only alpha is used

### Outputs

- Image: The “wiped” result of input 1 and 2.
- Mask: An empty (opaque) mask

### Global Parameters

- RotX/Y/Z: Rotation of the wipe mask
- Wide: Depth or perspective of the wipe mask
- ZoomX/Y: Scaling of the wipe mask.
- MoveX/Y: Movement of the wipe mask
- ShadX/Y: Shadow offset relative to the wipe mask.
- SInt: Shadow intensity.
- SBlur: Degree of soft edges for the shadows.

### Comments

None.

### See Also

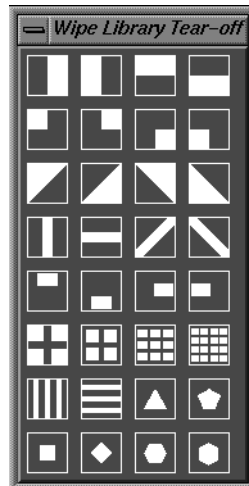
“Wipe Library” on page 202

“Stripe Patterns” on page 250

## 19.10 Wipe Library

### Description

A set of wipe presets built using a wipe pattern generator. Although the patterns can be used just “as is”, all generator parameters are available to fine tune or completely redefine wipes.



**FIGURE 53. Wipe Library**

The wipe generator works as follows: Any number of stripe sets can be created. A stripe set consists of parallel strips, each of them controlled by a separate time editor track with its own private set of parameters. If multiple stripe sets are used, the intersection of the strips defines the wipe shape. See “Stripe Patterns” on page 250 for more information.

The Wipe Library effects, if used without input channels are exactly equivalent to the Stripe Pattern effect from the FX menu.

### Inputs

1. Wipe Target image track
  - Image only
2. Wipe Source image track
  - Image only

### Outputs

- Image: The progressing wipe between source and target
- Mask: An empty (opaque) mask

### Global Parameters

None.

### Track Parameters

- Angle: The angle of the stripe set. An angle of 0 is a vertical stripe.

- **Soft:** Edge blur for the stripes of a stripe set.
- **Strip:** The width of the stripes in the stripe set. This also controls the number of stripes per stripe set. When the grade parameter is set to 50, the stripe effect will fill the screen with as many stripes, evenly spaced, as fit. Distance between the stripes is equal to the strip size.
- **Phase:** Offset position for the strips. Is usually adjusted to program the start position of the stripes, before any movement occurs.
- **Grade:** Strip pattern animation control. By animating the grade from 0 to 100 or back, the strip size increases or decreases. At a grade of 0, the strips are invisible, at 100 there is no space between them, i.e. they present a solid area. At 50, the strips are evenly spaced, being as wide as there is space between them.

### **Comments**

Use AddTrack from the Time Editor menu bar to add new stripe sets to the effect; DeleteTrack to remove some not required any more.

In a way, the Wipe Library is an exception to normal time editor operation. Here, time editor tracks do not have an association with the inputs to the effects, but each of the tracks controls a particular effect subset.

### **See Also**

“Stripe Patterns” on page 250

## 19.11 Page Turn

### Description

“2.5-D” page turn effect, revealing an underlying background in the manner of a sheet of paper turned over. Actually, the effect looks as if an imaginary sticky cylinder was rolled over the page, taking the image with it, wrapping around the cylinder.

### Inputs

Two or three inputs are possible:

1. Background
  - Image only
2. If no further track is provided, this track represents front- and back side of the page to be turned. If a further track exists, it will texture the back side of the page.
  - Image and, optionally, alpha
3. Optional front side “print” of the page to be turned. If this track is provided, the track above will only be used on the backside and this track on the front side.
  - Image and, optionally, alpha

### Outputs

- Image: The page turn effect composited in front of the background
- Mask: An empty (opaque) mask channel

### Parameters

- Ang: The angle of the imaginary cylinder relative to the x axis. The default of 90 thus is a vertical cylinder, rolling along the x axis. Of course, this angle can be animated.
- Line: Position of the cylinder over the page. The default, 0, refers to the cylinder at the center of the page. Animating this value (increasing it) lets the cylinder roll over the page, rolling up the image while it goes. The movement direction of course depends not only on the Line parameter, but also on the Angle settings.
- Rad: The radius of the imaginary cylinder.
- Hilt: Controls the appearance of highlights on the turned page.
- Shadow: Shadow intensity. If 0, no shadows are projected on the background.
- Shift: Offsets the page

### Comments

None.

### See Also



## 19.12 Corner Pin

### Description

An effect that permits independent animation of the four corners of an image, then composited over a background.

### Inputs

Two or more inputs:

1. Background track
  - Image only
2. Track 2...n-1: Image to be animated
  - Image and, optionally, mask

### Outputs

- Image: The animated input tracks, composited over a background
- Mask: An empty (opaque) mask

### Parameters

- UL-X/Y: One curve for x and y coordinate of the upper left image corner
- UR-X/Y: One curve for x and y coordinate of the upper right image corner
- DL-X/Y: One curve for x and y coordinate of the lower left image corner
- DR-X/Y: One curve for x and y coordinate of the lower right image corner

### Comments

If you create self-crossing images, rendering errors may occur.

You can use the time editor cut/copy/paste to copy motion curves to the Corner Pin effect, for example from a motion tracker.

You can have a corner pin follow a motion track of the four points in an image easily by using four independent motion track effects, each for one corner. Then copy the resulting curves to the respective corner of a corner pin.

### See Also:

“Edit > Copy” on page 97

“Edit > Paste” on page 97

“Motion Stabilize & DVE” on page 198

“Tracking & DVE” on page 199

## 19.13 Link

### Description

A hierarchical DVE effect. All input tracks can have their own motion, just like in the DVE with Background. However, the second and all further foreground tracks “inherit” the movements of the first foreground track, thus making it very easy to set up combined movements of images. You can for example use the track parameters of the lower foreground tracks to set up a chain of images for a large scrolling background and then move the whole collection using link.

### Inputs

2 or more Inputs:

#### 1. Background Track

- Image only
- Input 2... Input n-1: Image tracks to be moved
  - Image and mask; the mask is used to cut out part of an image

### Outputs

Image: A composite of the transformed input tracks on the background

Mask: An empty (opaque) mask

### Track Parameters (Input 2ff)

- Zoom: Image Zoom on both axis.
- ZoomX/Y: Individual zoom for x and y axis.
- MoveX/Y: Translation in x and y

### Comments

None.

### See Also

“DVE Background” on page 194