

Chapter 3

Creator Tools

Learning Objectives

After completing this chapter, you will be able to:

- *Create a composition using Creator tools*
- *Create a basic animation*
- *Create and animate text*
- *Create the sky and clouds effects*
- *Create the plasma effect*

INTRODUCTION

Creator tools are used to create backgrounds, noise patterns, and various other types of effects. In this chapter, you will learn to create some basic effects. Also, you will learn to animate objects in Fusion.

TUTORIALS

The compositions created in this chapter can be downloaded from <http://www.cadcim.com>. These compositions are contained in the *c03_fusion_7_tut.zip* file. The path of the file is as follows:

Textbooks > Animation and Visual Effects > Fusion > Blackmagic Design Fusion 7 Studio: A Tutorial Approach

Tutorial 1

In this tutorial, you will create a rolling ball animation by using the **Background** tool. The ball animation pose at frame 12 is shown in Figure 3-1. **(Expected time: 30 min)**

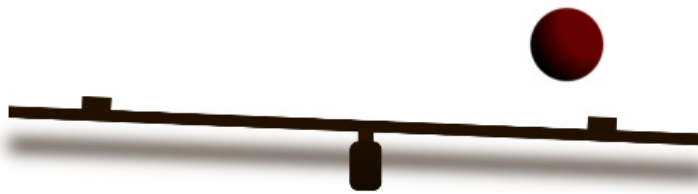


Figure 3-1 The ball animation pose at frame 12

The following steps are required to complete this tutorial:

- a. Set the frame format.
- b. Create a new background.
- c. Create a wooden plank.
- d. Create the shadow of the wooden plank.
- e. Create the base of the wooden plank.
- f. Create a ball.
- g. Animate the ball, wooden plank, and the wooden plank shadow.

Setting the Frame Format

In this section, you will specify the frame format settings.

1. Choose **File > New** from the menubar; a new composition is displayed in the Fusion screen.
2. Choose **File > Preferences** from the menubar; the **Preferences** dialog box is displayed.
3. In this dialog box, select **Frame Format** from the **Composition#** preferences tree; various frame format settings are displayed on the right in the **Preferences** dialog box.

4. Choose the **New** button from the right pane in the **Settings** area of the **Preferences** dialog box; the **Enter a name for the new image format** dialog box is displayed. Next, enter **2048x1556** in the edit box and then choose the **OK** button.
5. In the **Settings** area, enter **2048** and **1556** in the **Width** and **Height** edit boxes, respectively.
6. Enter **24** in the **Frame rate** edit box. Next, choose the **Save** button to save the changes made.

Creating a New Background

In this section, you will create a background for the composition.

1. Choose the **BG** button from the toolbar; the **Background1** tool tile is inserted in the **Flow** area. 

The **Background** tool is used to generate solid color and gradient images.

2. Press **1**; the output of the **Background1** tool is displayed in the left Display View. Next, choose the **Fit** button from the left **Display View** toolbar to fit the image in the left Display View.
3. In the **Background1** tool control window, choose the **Pick** button; the **Color** dialog box is displayed. In this dialog box, select the white color swatch from the **Basic Colors** area and then choose the **OK** button; the white color output is displayed in left Display View.

By default, the **Solid Color** button is chosen in the **Color** tab of the **Background1** tool control window. To use two or more colors, you can choose the **Horizontal**, **Vertical**, **Four Corner**, or **Gradient** button. If you choose the **Gradient** button, a green line appears in the Display View. You can change the appearance of the gradient in the Display View by dragging either end of the green line. You can also define the custom gradient by adding keys to the gradient ramp.

Creating a Wooden Plank

In this section, you will create a wooden plank by using the **Background** tool.

1. Click on the empty space in the **Flow** area to deselect the selected tool tile, if any. Choose the **BG** button from the toolbar; the **Background2** tool tile is inserted in the **Flow** area. Next, press **F2**; the **Rename Tool** dialog box is displayed. Enter **WoodenPlank1** in the edit box and then choose the **OK** button.
2. In the control window of the **WoodenPlank1** tool, choose the **Vertical** button; the **Top** and **Bottom** areas are displayed in the **Color** tab. Parameters in these areas are used to specify two colors for the vertical gradient. Enter the following values in the **Top** area:

R: 0.5

G: 0.25

3. Select the **WoodenPlank1** tool tile in the **Flow** area. Press **1**; the output of the **WoodenPlank1** tool is displayed in the left Display View.

4. Make sure the **WoodenPlank1** tool tile is selected in the **Flow** area and then choose the **Add a Rectangle Mask** button from the left **Display View** toolbar; the **Rectangle1** tool tile is inserted in the **Flow** area and gets automatically connected to the purple effect mask node of the **WoodenPlank1** tool.



Note

An effect mask is an animatable shape that can be used to restrict an effect to a specific area of an image. You can attach any number of masks to a tool. Effect masks are connected to the purple effect mask node of a tool.

5. Make sure the **Rectangle1** tool tile is selected in the **Flow** area. Next, specify the parameters in the control window of the **Rectangle1** tool as follows:

Center

Y: **0.26**

Width: **0.72**

Height: **0.016**

6. Drag the red output node of the **WoodenPlank1** tool to the red output node of the **Background1** tool; the **Merge1** tool tile is inserted in the **Flow** area and a connection between the **Background1**, **WoodenPlank1**, and **Merge1** tools is established, refer to Figure 3-2.
7. Press 2; the output of the **Merge1** tool is displayed in the right Display View, refer to Figure 3-2. Next, choose the **Fit** button from the right **Display View** toolbar to fit the image in the Display View.

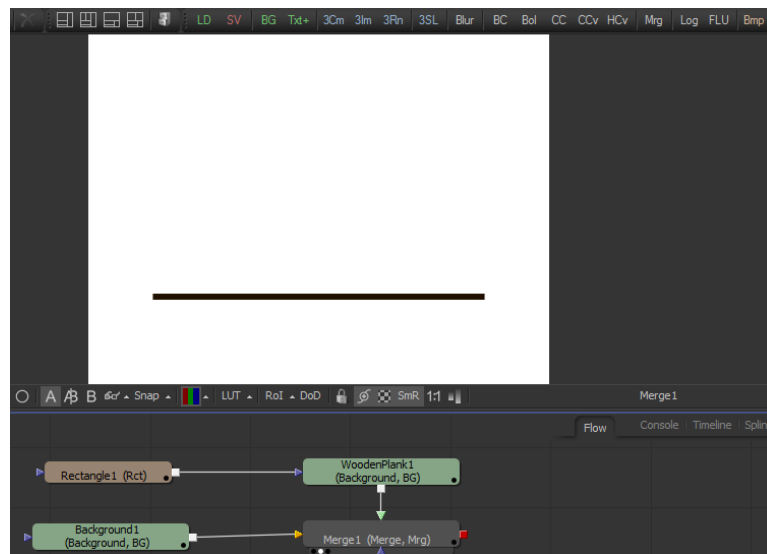


Figure 3-2 The **Merge1** tool in the **Flow** area and its output displayed in the right Display View


8. In the **Merge1** tool control window, enter the value of the **Center** parameter as follows:

Center

Y: 0.49

After entering the value, the output of the **Merge1** tool is displayed in the right Display View.

Next, you will create the left corner of the wooden plank.

9. Select the **Rectangle1** tool tile from the **Flow** area and then choose the **Add a Rectangle Mask** button from the left **Display View** toolbar; the **Rectangle2** tool tile is created in the **Flow** area. 
10. In the **Rectangle2** tool control window, select **Add** from the **Paint Mode** drop-down list and then set the parameters as follows:

Center


X: 0.23

Y: 0.27

Width: 0.03

Height: 0.03

Next, you will create the right corner of the wooden plank.

11. Make sure the **Rectangle2** tool tile is selected from the **Flow** area and then choose the **Add a Rectangle Mask** button from the left **Display View** toolbar; the **Rectangle3** tool tile is inserted in the **Flow** area and a connection between the **Rectangle2** and **Rectangle3** tools is established. 
12. In the **Rectangle3** tool control window, select **Add** from the **Paint Mode** drop-down list and then specify the parameters as follows:

Center

X: 0.75

Y: 0.27

Width: 0.03

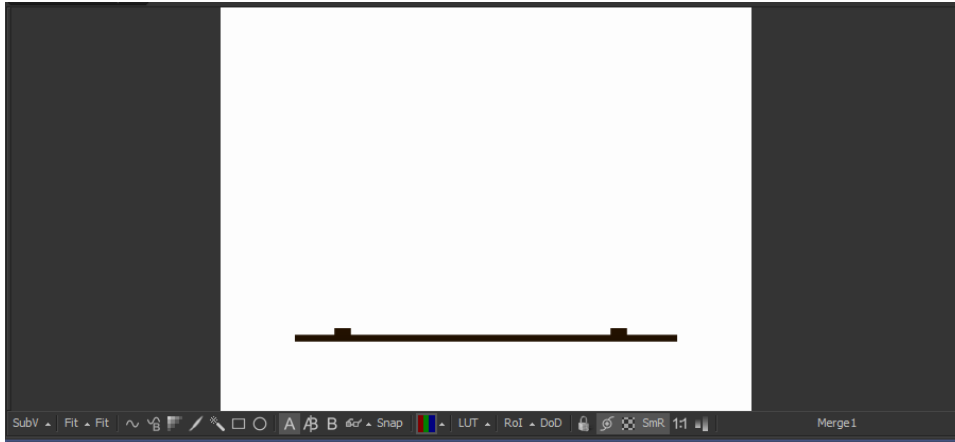
Height: 0.03

After setting the parameters, the output of the **Merge1** tool is displayed in the right Display View, as shown in Figure 3-3.

Creating the Shadow of the Wooden Plank

In this section, you will create the shadow of the wooden plank.

1. Select the **WoodenPlank1** tool tile from the **Flow** area. Next, press and hold CTRL and then select the **Rectangle1** tool tile.
2. Choose **Edit > Copy** from the menubar. Next, click on the empty space in the **Flow** area to deselect the selected tool tile, if any. To paste copied tools, choose **Edit > Paste** from the menubar; two new tool tiles with the name **Rectangle1_1** and **WoodenPlank1_1** are inserted in the **Flow** area.



*Figure 3-3 The output of the **Merge1** tool*

3. Press F2 to rename the **WoodenPlank1_1** tool as **WoodenPlankShadow1** and **Rectangle1_1** tool as **Rectangle4**.
4. Drag the red output node of the **Rectangle4** tool tile to the purple node of the **WoodenPlankShadow1** tool tile; a connection between the **Rectangle4** and **WoodenPlankShadow1** tools is established.
5. Drag the red output node of the **WoodenPlankShadow1** tool tile to the red output node of the **Merge1** tool tile; the **Merge2** tool tile is inserted in the **Flow** area and a connection is established between the **Merge2**, **WoodenPlankShadow1**, and **Merge1** tools.
6. Press 2; the output of the **Merge2** tool is displayed in the right Display View.

7. In the **Merge2** tool control window, enter the value of the **Center** parameter as follow:

Center
Y: 0.456

8. Select the **Rectangle4** tool tile from the **Flow** area and enter **0.02** in the **Soft Edge** edit box of the **Rectangle4** tool control window.

After entering the values, the output of the **Merge2** tool is displayed in the right Display view, as shown in Figure 3-4.

Creating Base of the Wooden Plank

In this section, you will create base of the wooden plank.

1. Select the **WoodenPlank1** tool tile from the **Flow** area and press CTRL+C. Next, click on the empty space in the **Flow** area and then press CTRL+V. Rename the pasted tool as **Base1**. Choose the **Add a Rectangle Mask** button from the left **Display View** toolbar; the **Rectangle5** tool tile is inserted in the **Flow** area and a connection between the **Base1** and **Rectangle5** tools is established.

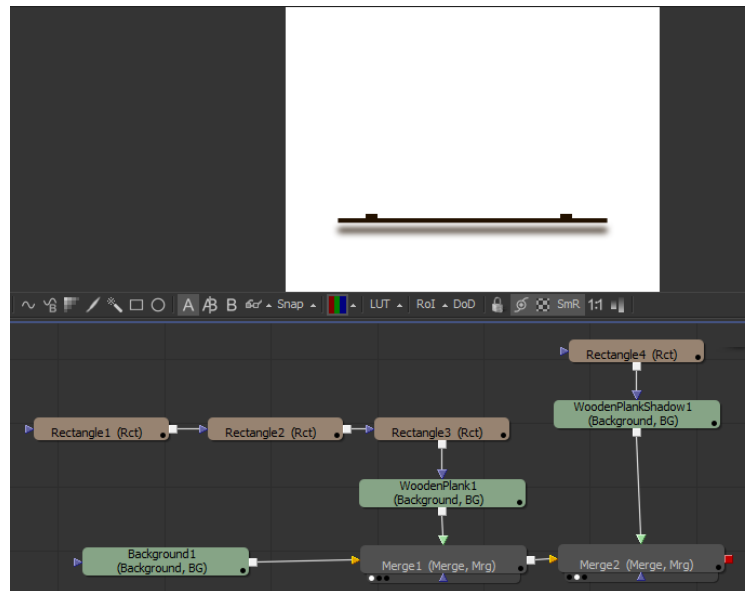


Figure 3-4 The Merge2 tool in the Flow area and its output displayed in the right Display View

2. Drag the red output node of the **Base1** tool tile to the red output node of the **Merge2** tool tile; the **Merge3** tool tile is inserted in the **Flow** area and a connection between the **Base1**, **Merge2**, and **Merge3** tools is established.
3. Press 2; the output of the **Merge3** tool is displayed in the right Display View.
4. Select the **Rectangle5** tool tile from the **Flow** area. In the control window, set the parameters as follows:

Center
 X: 0.23 Y: 0.3

Width: 0.016 Height: 0.02
5. Select the **Merge3** tool tile from the **Flow** area. In the control window, set the parameters as follows:

Center
 X: 0.77 Y: 0.447
6. Select the **Base1** tool tile from the **Flow** area and press CTRL+C. Next, click on the empty space in the **Flow** area and then press CTRL+V. Next, press F2 to rename the pasted tool tile as **Base2**.
7. Select the **Rectangle1** tool tile from the **Flow** area and press CTRL+C. Next, click on the empty space of the **Flow** area and then press CTRL+V. Rename the pasted tool as **Rectangle6**.

8. Drag the red output node of the **Base2** tool tile to the red output node of the **Merge3** tool tile; the **Merge4** tool tile is inserted in the **Flow** area and a connection between the **Merge3**, **Base2**, and **Merge4** tools is established.
9. Press 2; the output of the **Merge4** tool is displayed in the right Display View.
10. Drag the red output node of **Rectangle6** tool tile to the purple node of the **Base2** tool tile; a connection between the **Rectangle6** and **Base2** tools is established.
11. Select the **Rectangle6** tool tile from the **Flow** area. In the control window, set the parameters as follows:

Center

Y: **0.198**

Width: **0.033**

Height: **0.067**

Corner Radius: **0.56**

12. Select the **Merge4** tool tile from the **Flow** area. In the control window, set the parameters as follows:

Center

Y: **0.508**

After entering the values, the output of the **Merge4** tool is displayed in the right Display View, as shown in Figure 3-5.

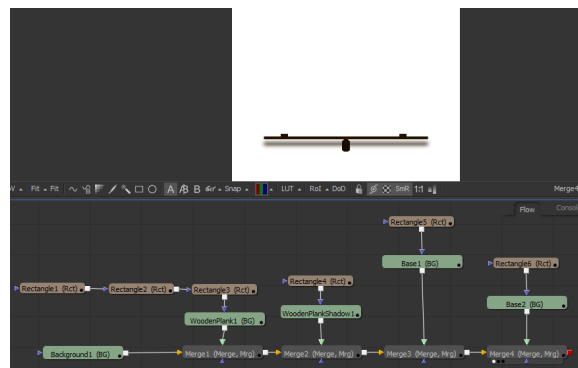



Figure 3-5 The output of the **Merge4** tool is displayed in the right Display View

Creating a Ball

In this section, you will create a ball.

1. Click on the empty space in the **Flow** area to deselect the selected tool tile, if any. Next, choose the **BG** button from the toolbar; the **Background2** tool tile is inserted in the **Flow** area. Next, rename the **Background2** tool as **Ball**. 
2. Press 1; the output of the **Ball** tool is displayed in the left Display View.
3. In the **Ball** tool control window, choose the **Gradient** button; controls corresponding to the **Gradient** button are displayed. Next, choose the **Radial** button and then specify the parameters as follows:

Start


X: **0.69**

Y: **0.69**


End

X: **0.33**

Y: **0.31**

4. Click on the first key of the Gradient ramp to select it and set the values as follows: 

R: **0.4** Position: **0.51**
5. Click on the last key of the Gradient ramp to select it and set the values as follows:

R: **0** G: **0** B: **0**
6. Drag the red output node of the **Ball** tool tile to the red output node of the **Merge4** tool tile; the **Merge5** tool tile is inserted in the **Flow** area and a connection between the **Ball**, **Merge4**, and **Merge5** tools is established.
7. Press 2; the output of the **Merge5** tool is displayed in the right Display View.
8. Select the **Ball** tool tile from the **Flow** area and then choose the **Add an Ellipse Mask** tool from the left **Display View** toolbar; the **Ellipse1** tool is connected to the **Ball** tool. 
9. In the **Ellipse1** tool control window, enter **0.01** in the **Soft Edge** edit box.
10. Select the **Merge5** tool tile from the **Flow** area and then set the parameters of the **Merge5** tool in the control window as follows:

Center

X: **0.88**

Y: **0.68**

Size: **0.15**

After entering the values, the output of the **Merge5** and **Ball** tools is shown in the Display Views, as shown in Figure 3-6.

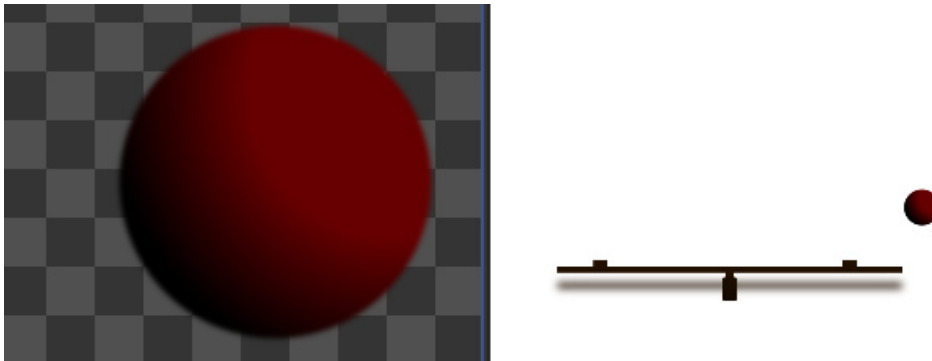


Figure 3-6 The output of the **Merge5** and **Ball** tools

Animating the Ball, the Wooden Plank, and the Wooden Plank Shadow

In this section, you will animate the ball by using the **Transform** tool.

1. Select the **Ball** tool tile from the **Flow** area and then choose **Tools > Transform > Transform1** from the menubar or choose the **Xf** button from the toolbar; the **Transform1** tool tile is inserted in the **Flow** area and a connection between the **Transform1**, **Ball**, and **Merge5** tools is established.
2. In the Time Ruler area, enter **50** in the **Render End Time** edit box.



Note

*In Fusion, you can animate the controls. When you animate a control in Fusion, it gets connected to an animation curve. The animation curves are made of splines. By default, bezier spline type is used during animation. You can change the default spline type from the **Preferences** dialog box.*

Next, you will animate the **Center** control of the **Transform1** tool.

3. In the control window of the **Transform1** tool, set the parameters as follows:

Center

X: **2.57**

Y: **0.86**

4. Right-click on the **Center** control; a shortcut menu is displayed. Choose the **Animate** option from the shortcut menu; a keyframe is added at frame 0.



Note

*Keyframes are automatically updated when the values of a control are changed. If a keyframe exists on that particular frame, it will be updated otherwise a new keyframe will be created. To set a keyframe without changing the value of the control, right-click on the control; a shortcut menu is displayed. Next, choose the **Set Key** from the shortcut menu.*



Tip: To move the CTI forward or backward frame by frame, press the [key or the] key. To play the animation, press SPACEBAR, and to stop the animation, press SPACEBAR again.

5. Now, create keyframes by using the values given next.

Frame	Center X	Center Y
10	-0.35	-1.82
20	-1.9	-0.6
30	-3.87	-2
40	-5.72	-0.716
50	-7.16	-2.822

When you add keyframes to an animation curve, a green spline with control points is displayed in the Display View. You can modify the animation curve interactively by moving the control points or by adjusting the spline handles, refer to Figure 3-7.

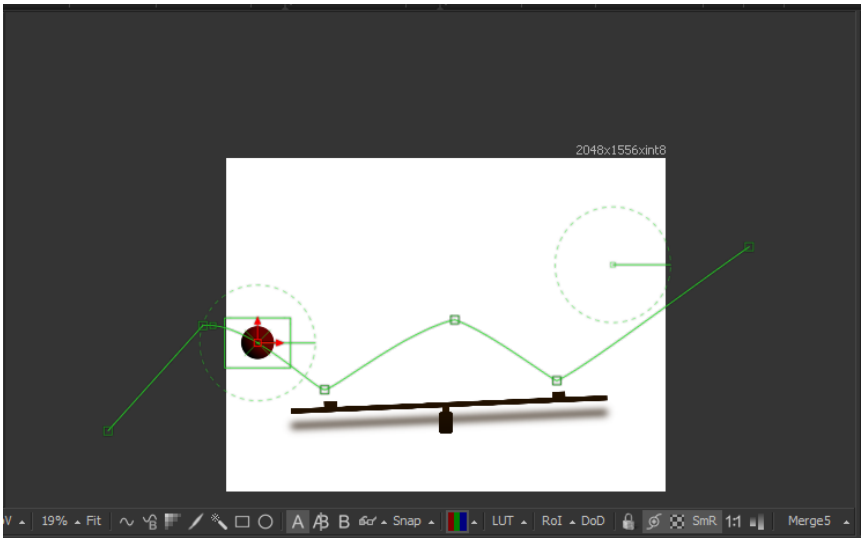


Figure 3-7 The **Transform1** tool animation spline displayed in the right Display View

6. Scrub the timeline to view the animation.
7. Select the top 2 keyframes and then press SHIFT+S to smooth the spline.
8. Select the **WoodenPlank1** tool tile from the **Flow** area and then choose the **Xf** button from the toolbar; the **Transform2** tool tile is inserted in the **Flow** area and a connection between the **WoodenPlank1** and **Merge1** tools is established.
9. Enter **0** in the **Current Time** edit box; the current time indicator (CTI) moves at the beginning of the timeline.

10. Right-click on the **Angle** control; a shortcut menu is displayed. Choose the **Animate** option from the shortcut menu; a keyframe is added at frame 0.
11. Animate the **Angle** control of the **Transform2** tool by using the values given next.

Frame	Angle
0	2.033
10	0
12	-2.28
20	-2.71
30	3.23
40	1.9

12. Scrub the timeline to view the animation.

Animating the Shadow of the Wooden Plank

In this section, you will animate the shadow of the wooden plank.

1. Click on the empty space in the **Flow** area to deselect the selected tool tile, if any. Next, copy the **Transform2** tool and rename it as **Transform3** in the **Flow** area.
2. Make sure the **Transform3** tool tile is selected in the Flow area. Press and hold SHIFT and then drag the **Transform3** tool tile over the pipe between the **Merge2** and **WoodenPlankShadow1** tools; the pipe is highlighted. The **Transform3** tool tile is inserted between the **Merge2** and **WoodenPlankShadow1** tool tiles. Next, press SPACEBAR to play the animation.

Figure 3-8 displays the network of tools of the final composition.

Now, save the composition with the name *c03_tut1* at the location *Documents > Fusion_7 > c03_tut > c03_tut_01*. Next, you need to render the composition. For rendering, refer to Tutorial 2 of Chapter 2. The output of the composition at frame 12 is shown in Figure 3-1. You can also view the final render of the composition by downloading the *c03_fusion_7_rndr.zip* file from <http://www.cadcim.com>. The path of the file is mentioned at the beginning of the chapter.

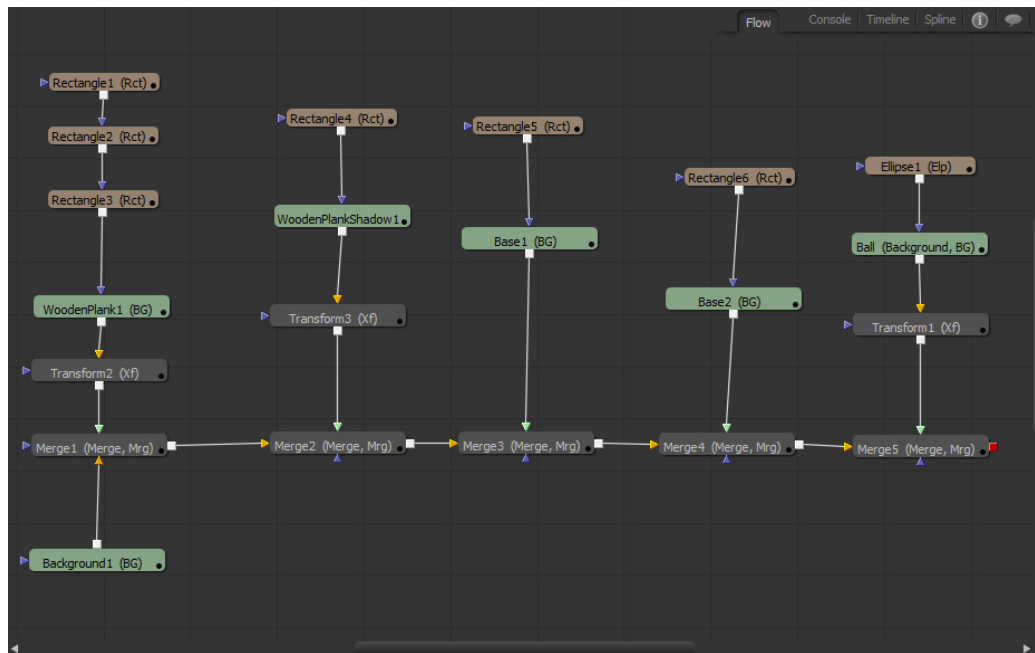


Figure 3-8 The network of tools displayed in the **Flow** area

Tutorial 2

In this tutorial, you will create and animate text by using the **Text+** tool. The final output of the composition at frame 80 is shown in Figure 3-9. (Expected time: 25 min)



Figure 3-9 The final output of the composition at frame 80

The following steps are required to complete the tutorial:

- a. Set the frame format.
- b. Create the text.
- c. Create the shadow of the text.
- d. Add more text.
- e. Create borders around the text.
- f. Prepare the text to render.


Setting the Frame Format

In this section, you will specify the frame format settings.

1. Choose **File > New** from the menubar; a new composition is displayed in the Fusion screen.
2. Choose **File > Preferences** from the menubar; the **Preferences** dialog box is displayed.
3. In this dialog box, select **Frame Format** from the **Composition#** preferences tree; various frame format settings are displayed on the right in the **Preferences** dialog box.
4. Select the **HDTV 1080** option from the **Default Format** drop-down list and then choose the **Save** button to save the changes made.

Creating the Text

In this section, you will create the text by using the **Text+** tool.

1. Choose the **Text+** button from the toolbar; the **Text1** tool tile is inserted in the **Flow** area. 

The **Text1** tool is used to add the text for motion graphics.

2. In the **Text1** tool control window, set the parameters as follows:

Styled Text: **Blackmagic Design Fusion** Font: **Impact**

3. Select the **Underline** check box to underline the text.

Next, you will scramble the text.

4. Press 1; the output of the **Text1** tool is displayed in the left Display View. Next, choose the **Fit** button on the left **Display View** toolbar to fit the image in the Display View.
5. In the **Text1** tool control window, right-click in the **Styled Text** area; a shortcut menu is displayed. Next, choose the **TextScramble** option from the menu; the **TextScramble** modifier is applied to the **Text1** tool.
6. Choose the **Modifiers** tab in the control window, as shown in Figure 3-10. Next, click on the triangle located on the left of the modifier's title bar to expand the **TextScramble on Text1: Styled Text**. Set the value of the **Randomness** control to **1.61**.
7. Enter **bBILaAcCkKmMaAgGiIcCdDeEsSiIgGnNffFuUsSiIoOnN** in the **Substitute Chars** text box.

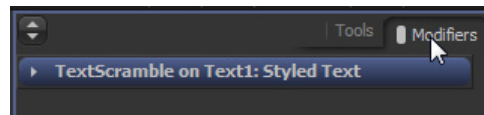


Figure 3-10 Choosing the Modifiers tab in control window

8. In the Time Ruler area, enter **80** in the **Render End Time** edit box, refer to Figure 3-11.
9. Right-click on the **Randomness** control; a shortcut menu is displayed. Choose the **Animate** option from the shortcut menu; a keyframe is added at frame 0.



Figure 3-11 The Timeline view

10. Animate the **Randomness** control by using the values given in the table below:

Frame	Randomness
0	1.61
30	1.61
50	0



Note

After entering 1.61 in the Randomness control at frame 30, you can set the key frame by right-clicking on the **Randomness** control and choosing the **Set Key** option from the shortcut menu.

11. Scrub the timeline to view the animation.
12. Enter **0** in the **Current Time** edit box; the current time indicator (CTI) moves at the beginning of the timeline.
13. Choose the **Tools** tab in the control window and then choose the **Layout** tab. Right-click on the **Center** control; a shortcut menu is displayed. Choose the **Animate** option from the shortcut menu; a keyframe is added at frame 0.
14. Animate the **Center** control by using the values given in the table below:

Frame	Center X	Center Y
0	1.5	1
20	0.5	0.76
30	0.5	0.86

15. Scrub the timeline to view the animation.
16. Enter **0** in the **Current Time** edit box; the current time indicator (CTI) moves at the beginning of the timeline.

17. Choose the **Text** tab and then right-click on the **Size** control; a shortcut menu is displayed. Next, choose the **Animate** option from the shortcut menu; a keyframe is added at frame 0.
18. Animate the **Size** control by using the values given in the table below:

Frame	Size
0	0.037
10	0.09
20	0.11
30	0.13

19. Scrub the timeline to view the animation.

Next, you will create the background for the text and change the color of the text.

20. Choose the **Layout** tab and then choose the **Pick** button; the **Color** dialog box is displayed, as shown in Figure 3-12. Choose the white color swatch from the dialog box and then choose the **OK** button.
21. To change the color of the text, choose the **Shading** tab. In this tab, the **1** button is chosen by default. Choose the **Pick** button in the **Color** area; the **Color** dialog box is displayed. Move the ramp slider to black color and then choose the **OK** button.

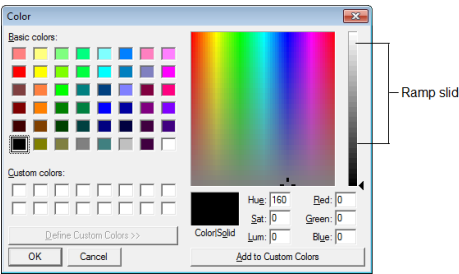


Figure 3-12 The Color dialog box

Creating the Shadow of the Text

In this section, you will create the shadow of the text.

1. Make sure the **Text1** tool tile is selected in the **Flow** area. In the **Text1** tool control window, make sure the **Shading** tab is chosen. Next, choose the **3** button from the **Shading** tab and then select the **Enabled** check box.
2. Enter **0.63** in the **Opacity** edit box.

Adding More Text

In this section, you will add more text to the composition.

1. Click on the empty space of the **Flow** area to deselect the selected tool tile, if any. Choose **Tools > Creator > Text+** from the menubar; the **Text2** tool tile is inserted in the **Flow** area.
2. Press 2; the output of the **Text2** tool is displayed in the right Display View. Next, choose the **Fit** button from the right **Display View** toolbar to fit the image in the Display View.
3. In the **Text2** tool control window, set the parameters as follows:

Styled Text: **.Compositing**


Font: **Impact**

4. Choose the **Shading** tab in the **Text2** tool control window and then set the text color to black, as discussed earlier.
5. Choose the **3** button from the **Shading** tab and then select the **Enabled** check box; the black shadow is added to the text. Next, enter **0.63** in the **Opacity** edit box.
6. Choose the **Text** tab in the **Text2** tool control window and animate the **Size** control by using the values given in the table below:

Frame	Size
0	0
23	0
30	0.08

7. Choose the **Layout** tab in the **Text2** tool control window and animate the **Center** controls by using the following values given in the table below:

Frame	Center X	Center Y
0	0.5	0.47
30	0.5	0.34

8. Click on the empty space in the **Flow** area to deselect the selected tool tile, if any. Choose the **Mrg** button from the toolbar; the **Merge1** tool tile is inserted in the **Flow** area. 
9. Drag the red output node of the **Text1** tool tile to the orange node of the **Merge1** tool tile. Next, drag the red output node of the **Text2** tool tile to the green node of the **Merge1** tool tile; a connection between the **Text1**, **Text2**, and **Merge1** tools is established.
10. Press 2; the output of the **Merge1** tool is displayed in the right Display View.
11. Click in the empty space of the **Flow** area and then choose the **Txt+** from the toolbar; the **Text3** tool tile is inserted in the **Flow** area.
12. Drag the red output node of the **Text3** tool tile to the red output node of the **Merge1** tool tile; the **Merge2** tool tile is inserted in the **Flow** area and a connection between the **Merge1**, **Merge2**, and **Text3** tools is established.
13. In the **Text3** tool control window, set the parameters as follows:

Styled Text: **.Keying**

Font: **Impact**

14. Choose the **Shading** tab and then change the color of the text to black, as discussed earlier. Next, choose the **3** button and then select the **Enabled** check box to enable black shadows. Next, enter **0.63** in the **Opacity** edit box.

15. Choose the **Text** tab and animate the **Size** control by using the values given in the table below:

Frame	Size
0	0
30	0
50	0.08

16. Choose the **Layout** tab in the **Text3** tool control window and then enter **0.22** in the **Y** edit box of the **Center** area.
17. Click on the empty space in the **Flow** area to deselect the selected tool tile, if any. Choose the **Txt+** button from the toolbar; the **Text4** tool tile is inserted in the **Flow** area.
18. Drag the red output node of the **Text4** tool tile to the red output node of the **Merge2** tool tile; the **Merge3** tool is inserted in the **Flow** area and a connection between the **Merge2**, **Merge3**, and **Text4** tools is established.
19. Press 2; the output of the **Merge3** tool is displayed in the right Display View.
20. Select the **Text4** tool tile in the **Flow** area. In the control window of the **Text4** tool, set the parameters as follows:

Styled Text: **.Motion Tracking** Font: **Impact**

21. Choose the **Shading** tab and then change the color of text to black. Next, choose the **3** button and then select the **Enabled** check box to enable black shadows.
22. Choose the **Text** tab in the control window and animate the **Size** control by using the values given in the table below:

Frame	Size
50	0
70	0.08

23. Select the **Merge3** tool tile from the **Flow** area and enter **0.11** in the **Y** edit box of the **Center** control in the control window.
24. Scrub the timeline to view the animation.

Creating Borders Around the Text

In this section, you will create borders around the text.

1. Click on the empty space in the **Flow** area to deselect the selected tool tile, if any.
2. Choose the **BG** button from the toolbar; the **Background1** tool tile is inserted in the **Flow** area.

3. Press 1; the output of the **Background1** tool is displayed in the left Display View.
4. Choose the **Add a Rectangle Mask** button from the left **Display View** toolbar; the **Rectangle1** tool gets automatically connected to the effect mask node of the **Background1** tool.
5. Enter **0.015** in the **Width** edit box of the **Rectangle1** tool control window.
6. Drag the red output node of the **Background1** tool tile to the red output node of the **Merge3** tool tile; the **Merge4** tool tile is inserted in the **Flow** area.
7. Press 2; the output of the **Merge4** tool is displayed in the right Display View.
8. Enter **0.006** in the **X** edit box of the **Center** control in the **Merge4** tool control window.
9. Select the **Background1** and **Rectangle1** tool tiles from the **Flow** area.
10. Choose **Edit > Copy** from the menubar. Next, click on the empty space in the **Flow** area to deselect the selected tool tile, if any. Now, choose **Edit > Paste** from the menubar; the **Background1_1** and **Rectangle1_1** tool tiles are inserted in the **Flow** area.
11. Drag the red output node of the **Background1_1** tool tile to the red output node of the **Merge4** tool tile; the **Merge5** tool tile is inserted in the **Flow** area.
12. Press 2; the output of the **Merge5** tool is displayed in the right Display View.
13. Enter **0.996** in the **X** edit box of the **Center** control in the **Merge5** tool control window.

After entering the values, the output of the **Merge5** tool is displayed at frame 70 in the right Display View, as shown in Figure 3-13. Figure 3-14 displays the network of tools used for creating the final composition.

Now, save the composition with the name *c03tut2* at the location *Documents > Fusion_7 > c03_tut > c03_tut_02*. Next, you need to render the composition. For rendering, refer to Tutorial 2 of Chapter 2. You can also view the final render of the composition by downloading the *c03_fusion_7_rndr.zip* file from <http://www.cadcim.com>. The path of the file is mentioned at the beginning of the chapter.



Figure 3-13 The output of the Merge5 tool at frame 70

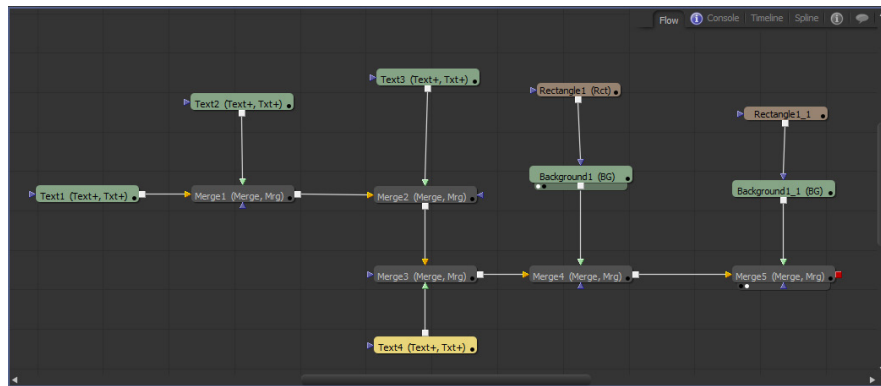


Figure 3-14 All tools used in the composition displayed in the **Flow** area

Tutorial 3

In this tutorial, you will create clouds by using the **Fast Noise** tool and then merge clouds with the image of sea bridge. The final output of the composition is shown in Figure 3-15.

(Expected time: 20 min)

The following steps are required to complete this tutorial:

- Set the frame format.
- Download and import the image.
- Create the clouds.
- Merge the images of clouds and sea bridge.
- Add perspective to the image.
- Create the shadows of the clouds.



Figure 3-15 The final output of the composition

Setting the Frame Format

In this section, you will specify the frame format settings.

1. Choose **File > New** from the menubar; a new composition is displayed in the Fusion screen.
2. Choose **File > Preferences** from the menubar; the **Preferences** dialog box is displayed.
3. In this dialog box, select **Frame Format** from the **Composition#** preferences tree; various frame format settings are displayed on the right in the **Preferences** dialog box. Make sure **2K Full Aperture (Super 35)** is selected in the **Default format** drop-down list and then choose the **Save** button to save the changes made.
4. In the Time Ruler area, enter **48** in the **Render End Time** edit box.

Downloading and Importing the Image

In this section, you will download the image and import it to the composition.

1. Open the following link: <http://www.freeimages.com/photo/1327985>; an image is displayed.
2. Download the image at the location `/Documents/Fusion_7/c03_tut/c03_tut_03/Media_Files` and save it with the name `1327985.jpg`.
3. Open the `1327985.jpg` image in the Photoshop application and erase sky from it. Now, save the file in `TGA` format with the name `seabridge.tga` at the location specified in step 2.



Note

Footage Courtesy: **Peter Mazurek** (<http://www.freeimages.com/profile/mazwebs>)

4. Choose the **LD** button from the toolbar; the **Open File** dialog box is displayed. In the dialog box, choose **Documents > Fusion_7 > c03_tut > c03_tut_03 > Media_Files > seabridge.tga** and then choose the **Open** button; the **Loader1** tool tile is inserted in the **Flow** area. In the **Loader1** tool control window, choose the **Import** tab and then select the **Post-Multiply by Alpha** check box.
5. Press 1; the output of the **Loader1** tool is displayed in the left Display View. Next, choose the **Fit** button from the left **Display View** toolbar to fit the image in the left Display View.

Creating the Clouds

In this section, you will create the clouds.

1. Click on the empty space of the **Flow** area and then choose **Tools > Creator > FastNoise** from the menubar; the **FastNoise1** tool tile is inserted in the **Flow** area.

The **FastNoise** tool is used to add noise. This tool is useful for creating wide range of effects such as cloud, smoke, and other organic textures.

2. Press 2; the output of the **FastNoise1** tool is displayed in right Display View. Next, choose the **Show Checker Underlay** button from the **Display View** toolbar to enable 

transparency in the right Display View. Next, choose the **Fit** button from the right **Display View** toolbar to fit the image in the right Display View.

3. In the **FastNoise1** tool control window, choose the **Color** tab. Next, choose the **Pick** button from the **Color1** area; the **Color** dialog box is displayed. In this dialog box, specify the following values and then choose the **OK** button to close the dialog box, refer to Figure 3-16.

Red: 175

Green: 185

Blue: 250

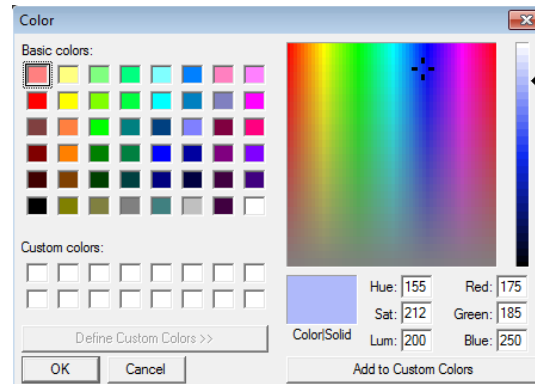


Figure 3-16 Selecting color from the **Color** dialog box

4. In the **FastNoise1** tool control window, choose the **Noise** tab and set the parameters as given next, refer to Figure 3-17.

Detail: 3.71

Scale: 5.54

Seethe: 0.07

Seethe Rate: 0.10

The **Detail** parameter is used to enhance the level of detailing in the noise pattern. The larger the value of this parameter, better will be the result but the render time will increase. The **Scale** parameter is used to define the scale of the noise pattern. The **Seethe** parameter is used to produce drifting effects such as drifting fog. The **Seethe Rate** parameter determines the rate at which the noise changes in each frame.

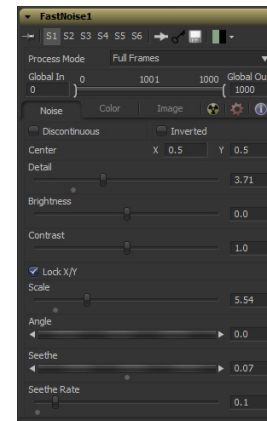


Figure 3-17 The **FastNoise1** tool control window

Merging the Images of Clouds and Sea bridge

In this section, you will merge the images.

1. Click on the empty space in the **Flow** area to deselect the selected tool tile, if any. Next, choose the **Mrg** button from the toolbar; the **Merge1** tool tile is inserted in the **Flow** area. Press 2; the output of the **Merge1** tool is displayed in the right Display View.
2. In the **Flow** area, drag the red output node of the **FastNoise1** tool tile to the orange node of the **Merge1** tool tile. Next, drag the red output node of the **Loader1** tool tile to the green node of the **Merge1** tool tile. Press 2; the output of the **Merge1** tool is displayed in the right Display View.

Adding Perspective to the Image

In this section, you will add perspective to the image.

1. Select the **FastNoise1** tool tile from the **Flow** area. Next, choose **Tools > Transform > DVE** from the menubar; the **DVE1** tool tile is inserted in the **Flow** area and a connection between the **DVE1** and **FastNoise1** tools is established.
2. In the **DVE1** tool control window, choose the **YZX** button from the **Rotation Order** area and then set the parameters as given next, refer to Figure 3-18.

Center

Y: 0.012

Z Move: 0.57

Z Pivot: 0.25

X Rotation: 66.6

Perspective: 0.94

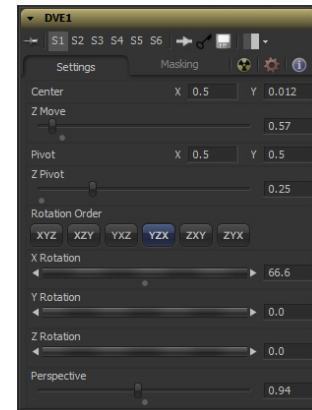


Figure 3-18 The **DVE1** tool control window

Creating the Shadows of the Clouds

In this section, you will create animated shadows of the clouds on the ground.

1. Select the **FastNoise1** tool tile in the **Flow** area and then press CTRL+C. Next, click on the empty space in the **Flow** area to deselect the **FastNoise1** tool tile and then press CTRL+V; the **FastNoise1_1** tool tile is inserted in the **Flow** area.
2. Drag the red output node of the **FastNoise1_1** tool tile to the red output node of the **Merge1** tool tile; the **Merge2** tool tile is inserted in the **Flow** area and a connection between the **FastNoise1_1**, **Merge1**, and **Merge2** tools is established.
3. Press 2; the output of the **Merge2** tool is displayed in the right Display View.
4. Select the **FastNoise1_1** tool tile in the **Flow** area and then choose **Tools > Transform > DVE** from the menubar; the **DVE2** tool tile is inserted between the **FastNoise1_1** and **Merge2** tools in the **Flow** area, as shown in Figure 3-19.

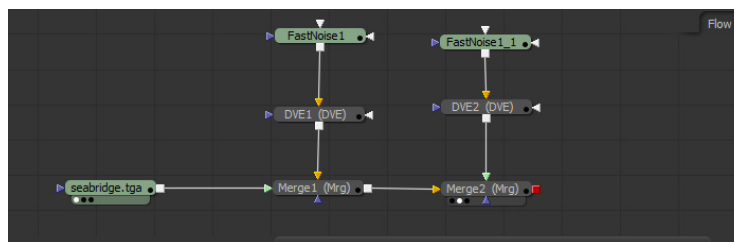


Figure 3-19 The **DVE2** tool inserted between the **FastNoise1_1** and **Merge2** tools

5. In the **DVE2** tool control window, enter the values of the parameters as follows:

Center

Y: 0.4

Z Move: 0.32

Z Pivot: 0.21

X Rotation: -52

6. Select the **Merge2** tool tile from the **Flow** area and select **Soft Light** from the **Apply Mode** drop-down list in the control window.
7. Press SPACEBAR to play the animation.

Now, save the composition with the name *c03tut3* at the location *Documents > Fusion_7 > c03_tut > c03_tut_03*. Next, you need to render the composition. For rendering, refer to Tutorial 2 of Chapter 2. The output of the composition is shown in Figure 3-15. You can also view the final render of the composition by downloading the *c03_fusion_7_rndr.zip* file from <http://www.cadcim.com>. The path of the file is mentioned at the beginning of the chapter.

Tutorial 4

In this tutorial, you will create the plasma effect. The final output of the composition at frame 160 is shown in Figure 3-20. **(Expected time: 20 min)**

The following steps are required to complete this tutorial:

- a. Set the frame format.
- b. Create the plasma effect.

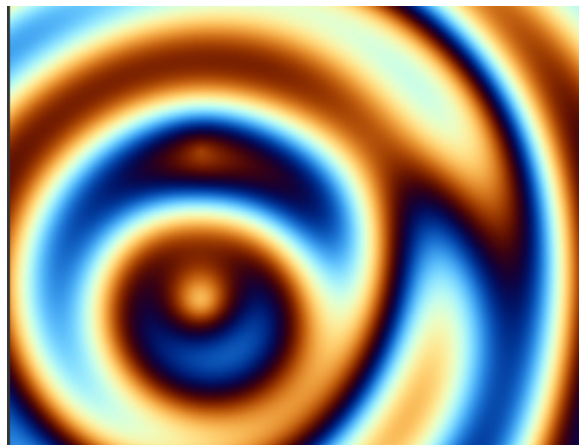


Figure 3-20 The final output of the composition at frame 160

Setting the Frame Format

In this section, you will specify the frame format settings.

1. Choose **File > New** from the menubar; a new composition is displayed in the Fusion screen.


- 2. Choose **File > Preferences** from the menubar; the **Preferences** dialog box is displayed.
- 3. In this dialog box, select **Frame Format** from the **Composition#** preferences tree; various frame format settings are displayed on the right in the **Preferences** dialog box. Make sure **2K Full Aperture (Super 35)** is selected in the **Default format** drop-down list and then choose the **Save** button to save the changes made.
- 4. In the Time Ruler area, enter **300** in the **Render End Time** edit box.

Creating the Plasma Effect

In this section, you will create plasma effect using the **Plasma** tool.

- 1. Choose **Tools > Creator > Plasma** from the menubar; the **Plasma1** tool tile is inserted in the **Flow** area.

The **Plasma** tool is used to create circular patterns to generate image similar to plasma.

- 2. Press 1; the output of the **Plasma1** tool is displayed in the left Display view. Next, choose the **Fit** button from the left **Display View** toolbar to fit the image in the left Display View. 
- 3. Choose the **Show Checker Underlay** button in the left **Display View** toolbar to view the output without transparency in the left Display View.
- 4. Select the **Plasma1** tool tile from the **Flow** area, if it is not already selected. Now, animate the **Scale** control in the **Circles** tab to create the keyframes by using the values given in the table below:

Frame	Scale
0	10
50	10
100	8.3
150	6.4
200	4.5
250	2.6
300	0.8

- 5. Animate the **Scale** control in the **Circle1** and **Circle3** areas in the **Circles** tab by using the values given next.

Frame	Circle 1- Scale	Circle 3 - Scale
0	0.26	4.85
50	0.26	4.85
100	0.34	4.82
150	0.45	4.85

Frame	Circle 1- Scale	Circle 3 - Scale
200	0.56	4.85
250	0.67	4.85
300	0.72	4.85

6. In the **Circle4** area, make sure that the **Type 2** button is chosen and then enter **0.27** in the **Scale** edit box.
7. Press SPACEBAR to play the animation.

The final output of the **Plasma1** tool at frame 280 is shown in Figure 3-21.

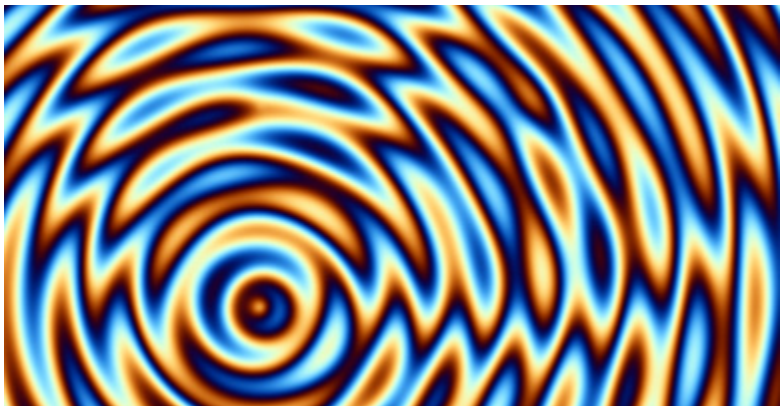


Figure 3-21 The final output of the **Plasma1** tool at frame 280

Now, save the composition with the name *c03tut4* at the location *Documents > Fusion_7 > c03_tut > c03_tut_04*. Next, you need to render the composition. For rendering, refer to Tutorial 2 of Chapter 2. The output of the composition at frame 280 is shown in Figure 3-21. You can also view the final render of the composition by downloading the *c03_fusion_7_rndr.zip* file from <http://www.cadcim.com>. The path of the file is mentioned at the beginning of the chapter.

Tutorial 5

In this tutorial, you will create a daylight time-lapse simulation by using the real-world data. The final output of the composition at frame 20 is shown in Figure 3-22.

(Expected time: 20 min)

The following steps are required to complete this tutorial:

- a. Set the frame format.
- b. Download and import the image.
- c. Create the daylight time-lapse simulation.
- d. Create the reflection of sky.



Figure 3-22 The final output of the composition at frame 20


Setting the Frame Format

In this section, you will specify the frame format settings.

1. Choose **File > New** from the menubar; a new composition is displayed in the Fusion screen.
2. Choose **File > Preferences** from the menubar; the **Preferences** dialog box is displayed.
3. In this dialog box, select **Frame Format** from the **Composition#** preferences tree; various frame format settings are displayed on the right in the **Preferences** dialog box. Make sure **2K Full Aperture (Super 35)** is selected in the **Default format** drop-down list and then choose the **Save** button to save the changes made.

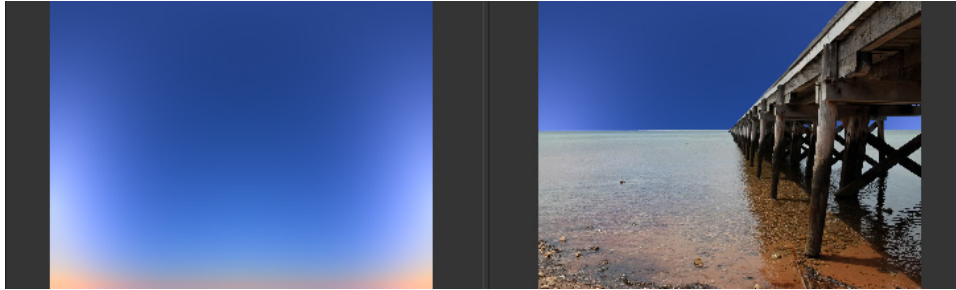
Downloading and Importing the Image

In this section, you will download image and import it to the composition.

1. Copy the *seabridge.tga* file that you have created in Tutorial 3 at the location */Documents/Fusion_7/c03_tut/c03_tut_05/Media_Files*.
2. Choose the **LD** button from the toolbar; the **Open File** dialog box is displayed. In the dialog box, choose **Documents > Fusion_7 > c03_tut > c03_tut_05 > Media_Files > seabridge.tga** and then choose the **Open** button; the **Loader1** tool tile is inserted in the **Flow** area. In the **Loader1** tool control window, choose the **Import** tab and then select the **Post-Multiply by Alpha** check box.
3. Press 1; the output of the **Loader1** tool is displayed in the left Display View. Next, choose the **Fit** button from the left **Display View** toolbar to fit the image in the left Display View.
4. To hide the transparency of the image, choose the **Show Checker Underlay** button  from the left **Display View** toolbar.

The output of the **Loader1** tool is displayed in the left Display View, as shown in Figure 3-23.

6. Select the **Merge1** tool tile in the **Flow** area and then press CTRL+W to swap the background and foreground inputs of the **Merge1** tool. After entering the values, the output of the **DaySky1** and **Merge1** tools is displayed, as shown in Figure 3-25.



*Figure 3-25 The output of the **DaySky1** and **Merge1** tools*

7. Make sure the **DaySky1** tool tile is selected in the **Flow** area and then choose **Tools > Transform > Transform** from the menubar; the **Transform1** tool tile is inserted in the **Flow** area and a connection is established between the **DaySky1**, **Transform1**, and **Merge1** tools.
8. In the **Transform1** tool control window, enter **1.03** in the **Y** edit box of the **Center** control; the horizon line meets with the sea.
9. Select the **DaySky1** tool tile from the **Flow** area. Next, choose the **Controls** tab and then select **5** from the **Day** drop-down list. Similarly, select **August** from the **Month** drop-down list in the **Date and Time** area.

The **Day** and **Month** drop-down lists are used to specify the day and month for the DaySky simulation

10. In the **Location** area, enter **25.47** and **80.7** in the **Latitude** and **Longitude** edit boxes, respectively.

The latitude and longitude used here are of Miami beach.

11. Choose the **Advanced** tab and enter **1.1** in the **Brightness** edit box of the **Horizon** area.

Next, you will animate the **Time** control.

12. In the Time Ruler area, enter **96** in the **Render End Time** edit box.
13. Choose the **Controls** tab and then animate the **Time** control in the **Date and Time** area to create the keyframe by using the values given in the table below:

Frame	Time
0	5
96	17

14. Press SPACEBAR to play the animation.

Creating the Reflection of the Sky

In this section, you will create reflection of the sky.

1. Click on the empty space in the **Flow** area and then choose **Tools > Transform > DVE** from the menubar; the **DVE1** tool tile is inserted in the **Flow** area.
2. Drag the red output node of the **Transform1** tool tile to the orange node of the **DVE1** tool tile; a connection between the **Transform1** and **DVE1** tools is established.
3. Drag the red output node of the **DVE1** tool tile to the red output node of the **Merge1** tool tile; the **Merge2** tool tile is inserted in the **Flow** area and a connection between the **Merge1**, **Merge2**, and **DVE1** tools is established.
4. Press 2; the output of the **Merge2** tool is displayed in the right Display View.
5. Select the **DVE1** tool tile from the **Flow** area. In the **DVE1** tool control window, specify the parameters as follows:

Center

Y: **0.57**

Z Move: **1.05**

X Rotation: **144.76**

Perspective: **0.5**

6. Select the **Merge2** tool tile from the **Flow** area and select **Hue** from the **Apply Mode** drop-down list and then enter **0.67** in the **Blend** edit box. Figure 3-26 displays the final output of the composition at frame 20.

Now, save the composition with the name *c03tut5* at the location *Documents > Fusion_7 > c03_tut > c03_tut_05*. Next, you need to render the composition. For rendering, refer to Tutorial 2 of Chapter 2. The output of the composition at frame 20 is shown in Figure 3-22. You can also view the final render of the composition by downloading the *c03_fusion_7_rndr.zip* file from <http://www.cadcim.com>. The path of the file is mentioned at the beginning of the chapter.



Figure 3-26 The final output of the composition

Self-Evaluation Test

Answer the following questions and then compare them to those given at the end of this chapter:

1. Which of the following combination of shortcut keys is used to copy the tools?
(a) CTRL+Z (b) CTRL+C
(c) CTRL+Y (d) CTRL+X
2. Which of the following keys is used to play the animation?
(a) ENTER (b) SHIFT
(c) CTRL (d) SPACEBAR
3. The _____ tools category is used to create new backgrounds, noise, and many other effects in the composition.
4. _____ is the process of giving motion to an object.
5. The _____ tool is used to rotate, scale, and move the objects in a scene.
6. You can choose the **Xf** button from the toolbar to transform elements in the composition. (T/F)

Review Questions

Answer the following questions:

1. To create a shadow of the text, you have to choose the _____ button from the **Shading** tab and then select the _____ check box.
2. The _____ tool is used to create circular shapes, thereby generating a plasma like effect.
3. The _____ tool is used to create a procedural sky pattern based on a specific time and location on earth.
4. To play an animation forward or backward frame by frame, press the _____ or _____ key.
5. Perspective can be added to an input image by using the _____ tool.

Evaluation Copy. Do not reproduce. For information visit www.cadcam.com

Answers to Self-Evaluation Test

1. b, 2. d, 3. Creator, 4. Animation, 5. Transform, 6. T