VIDI Technology Report

Using Presenter 3D to Automatically Create QuickTime VR Panorama Movies

QuickTime VR or QuickTime “Virtual Reality” is Apple’s exciting new technology that simulates 3D environments. Presenter 3D's Digital SoundStage environment provides you with the virtual stage, lighting, sound recording, and virtual QTVR cameras for the creation of a QTVR panorama scene. No photographic equipment or any other programs or utilities are required.

When designing a scene, it's important to keep in mind that the viewer is seeing a full 360 degree view of the room. Therefore, when you set up a panorama scene, you need to place a camera exactly where you want the viewer positioned in the scene. On the Digital SoundStage, the virtual QTVR cameras can be dragged to a position on the viewing stage or placed exactly using numerical input. The software supports the selection of a vertical field of view, and a choice of the three standard QTVR image sizes, or custom sizes. Creating a QTVR node requires the simple action of selecting the rendering options and starting the render. The software handles raytracing a cylindrical view, rotating and dicing the image, and encoding the QTVR parameters. No additional steps or utilities are required.

Fig. 1-Top stage view

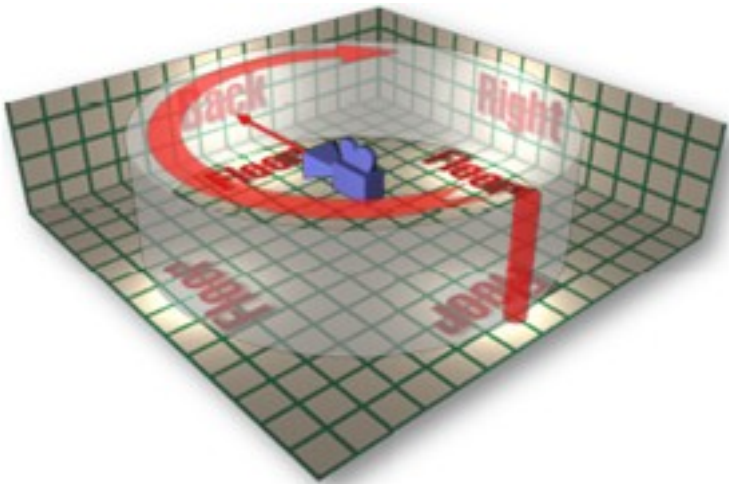

Fig. 2-360° camera sweep

Creating Panorama Movies

In this example, place the camera in the center of the room or scene to get an even perspective. Dragging the camera in the Top stage view lets you position it

visually. Make sure that you have enough lights positioned so that they will light the room evenly, as shown in Fig. 1. When Presenter 3D renders a panorama, it makes a complete 360° sweep to capture the scene, as simulated in Fig. 2.

In Presenter 3D, the field of view is measured vertically, not horizontally. That way, it is possible to enter a field of view or focal length. (Horizontally, the field of view would be 360°) regardless of how "wide" the image is.

Double click on "Camera 1" in Presenter's Script Window. This brings up the camera dialog box, as shown in Fig. 4. In the "Field of View" field, enter "90." This sets the camera "lens" to the proper focal length for a standard QTVR panorama. The proper field of view for this aspect ratio to prevent squeezing or stretching of the image is 90°. Close the camera dialog box by clicking in the small box at the top-left of the of the camera dialog box.

Fig. 3-Camera dialog

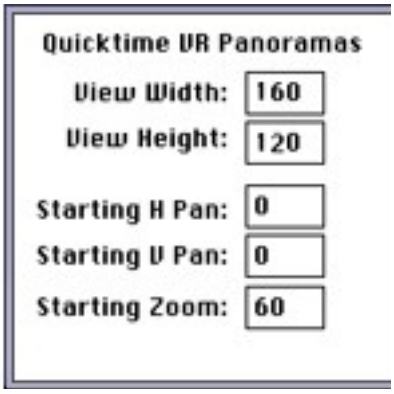

Fig. 4-QTVR settings dialog

Adjusting the Panorama Camera

The following section describes the parameters used in adjusting the field of the panorama movie. You can use the default parameters to render the panorama scene or define a new filed of view using the QuickTime VR Panoramas parameters, as shown in Fig. 4.

Under the "Edit" menu, select "QTVR Settings". This brings up the QTVR settings dialog, Fig. 4. Here you define the movie window size and the initial angle and the initial zoom level you want the movie to open up to.

View Width and View Height are used to set the size of the window for the QTVR panorama movie. As a general rule, smaller windows should be used for lower resolution movies.

Starting H Pan and Starting V Pan are used to set the initial view angle that you will see when you first open the rendered QTVR pano movie. A setting of 0 and 0 will set the initial view angle to where the camera in Presenter is pointed at.

Starting Zoom sets how far zoomed in you will be when you open the QTVR pano movie. 100 is zoomed all the way out, 0 is zoomed all the way in. If you set it to 0, you will see just a few pixels of your scene.

Set the following: View Width to 160;View Height to 120; Starting H Pan to 0; Starting V Pan to 0; Starting Zoom to 60. Click “OK”.

Rendering The Panorama Scene

To tell Presenter how you want the scene rendered, click on the render type pull-down on the render control palette and select “Ray Tracer”, as shown in Fig .5.

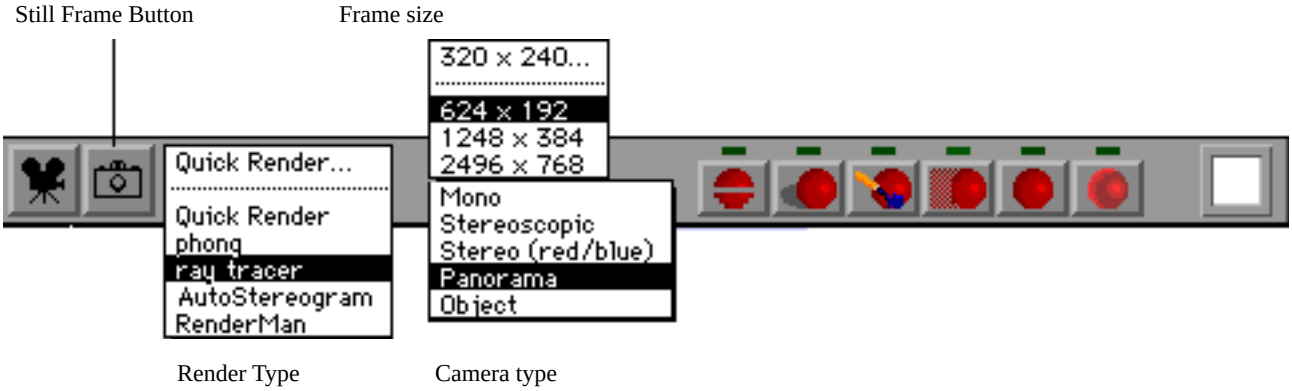

Fig. 5-Render control palette

Click on the camera type pull-down and select “Panorama.” This calls up the “QTVR Panorama Tracer camera type.” Click on the frame size pull-down just above the camera type pull-down and select “624 x 192.”

Click on the render still frame button to start the QTVR panorama render process. This brings up the render dialog box. Click on output type and select “QTVR movie”. Click “Render” to start rendering your QTVR panorama movie.

When Presenter renders a completed QTVR movie, it renders the panorama PICT, dices and compresses the pict into a QuickTime movie and compiles the movie into a finished QTVR panorama movie. Using Apple's QuickTime VR player, you're now ready to see the 3D scene you generated.

"I have found VIDI Presenter 3D to be invaluable in creating QuickTime VR scenes.", says Jeff Knapp of J. K. Computer Arts. " VIDI is the only 3D animation software company to provide users with the ability to produce panorama and object movies directly from its 3D application. No other package offers this level of integration and ease of use. With Presenter’s automated QTVR generating tools, the whole process of generating a QTVR panorama or object movie has been simplified to one step. It's nice and fast too."