

VIDI Technology Report

VIDI Brings Real Time Surface Attribute Selection With The Introduction of Its Explore Technology

Presenter 3D's animation and sound capabilities have been enhanced with the addition of the new "Explore" Surface Attributes technology. To dramatically improve an artist's productivity when using Presenter 3D, VIDI has introduced this ground-breaking improvement in shader technology. Explore allows the artist to make adjustments to the shading parameters in real-time. This capability enables you to instantly see the effect of your changes on the final rendered surface.

Selecting Surface Parameters

One of the most time consuming tasks in 3D modeling is the task of selecting the right combination of surface parameters. This generally involves a series of trial and error steps; 1) apply settings, test-render, 2) examine the results, 3) alter the settings and then start again. What makes it even more difficult is that many of the surface parameters affect or interact with one another, resulting in a difficult balancing act to get the desired surface effect. For instance, if your object appears too glossy, you might try turning down the object's specular coefficient; this has the side-effect of making your object appear darker. To compensate, you'll have to turn up diffuse a bit; that often makes your object appear more glossy. Presenter 3D's new real-time shader and Explore mode takes one of the most complicated tasks in 3D modeling and makes it as easy as clicking on the image that looks the best.

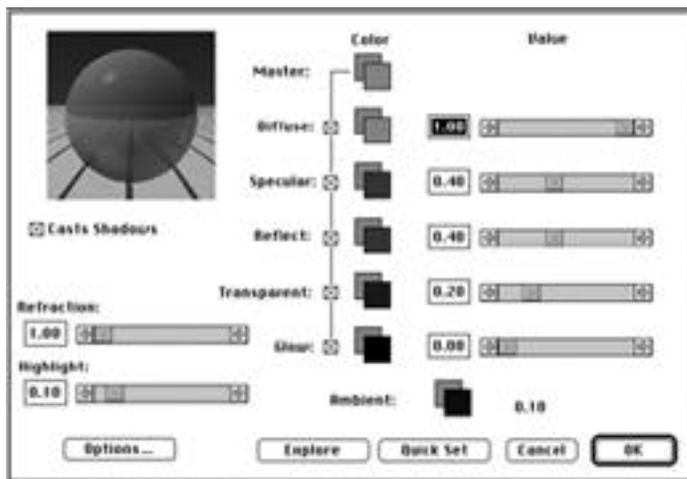


Fig. 1 - Expert Dialog

Object	⌘
Diffuse	⌘D
Specular	⌘S
Ambient	⌘A
Reflective	⌘R
Transparent	⌘T
Glow	⌘G
<hr/>	
Diffuse vs. Specular	⌘Q
Diffuse vs. Reflect	⌘E
Highlight vs. Specular	⌘H
Reflect vs. Transparency	⌘W
Index vs. Transparency	⌘I

Fig. 2 - Edit options

Realtime Surface Edits

Presenter 3D provides the Explore mode to enable an artist to easily make adjustments to the shading parameters and fine-tune them in real-time. To access the real time shader, you just click on the Looks button in the Cell Info dialog box of the object you wish to edit. This brings up the Expert mode dialog (Fig. 1, above left) in which you can change any of the surface parameters and colors that define the look of a surface. It enables you to see the effect of the change in settings, in one place and in real-time. In Presenter 3D's Expert dialog, you can change any of the parameters and colors that define the look of a surface and see the result in real-time. This lets you narrow in on the surface quickly and easily.

Fine Tuning Surface Edits

For fine-tuning the surface parameters, the Explore mode provides the ultimate in ease of surface parameter selection. Explore is accessed by clicking on the Explore button located at the bottom of the Expert dialog. In the Explore dialog (Fig. 3, below) you see not only the current version of the surface parameters, but up to 168 different combinations of those same parameters. The Explore dialog displays a grid of ray traced balls representing the variations of the current surface parameters. In the center, the current version is shown. By clicking on one of the other balls/variations, that variation becomes the current version, and moves to the center. In other words, to use Explore, click on the ball that is closest to the variation you want until you're happy with how it looks. That's all it takes

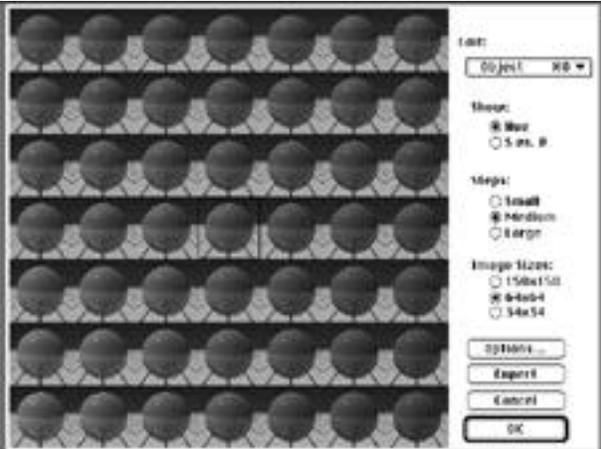


Fig. 3 - Explore dialog with 49 variations

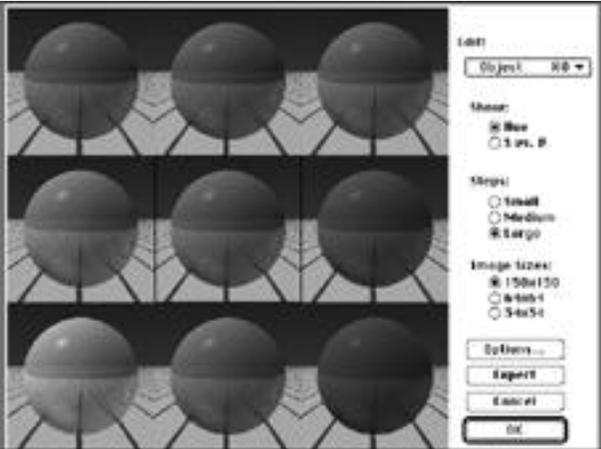


Fig. 4 - Explore dialog with 9 variations

While in the Explore mode, you can choose any of the surface parameters or parameter combinations, shown in Fig. 3, and select the optimum variation from

the graphic table displayed. In this example, 49 variations of Object Hue are displayed using a 7x7 (64x64 Image Size) grid set at Medium variation. To simplify the options, click on Large Steps to create a greater Color variation between ray traced balls and on 150x150 Image Size to create a 3x3 grid. Notice in Fig. 4 that the color variation has increased even though the grid is smaller.

To change the hue to orange, click in the upper-left part of the grid and observe in Fig. 5 that this variation moves to the center and all others change to reflect the new current version. For finer selection (Fig. 6) you can select the 13x13 grid (34x34 Image Size) and use Small Steps.

Fine Tuning Interacting Parameters

Where Explore is really invaluable though is in trading off the complicated parameters used in 3D modeling against each other. For example, changing the specular value would also affect the diffuse value. To handle this, just set the popup menu in the upper right hand corner, shown in Fig. 2, to "Diffuse vs. Specular". Explore will then show you all the different results of changing the diffuse and specular components. Pick the one that looks right to you, and you're done! To get that glass object to look just right? Choose "Reflection vs. Transparency" and select the desired "glassy" look.

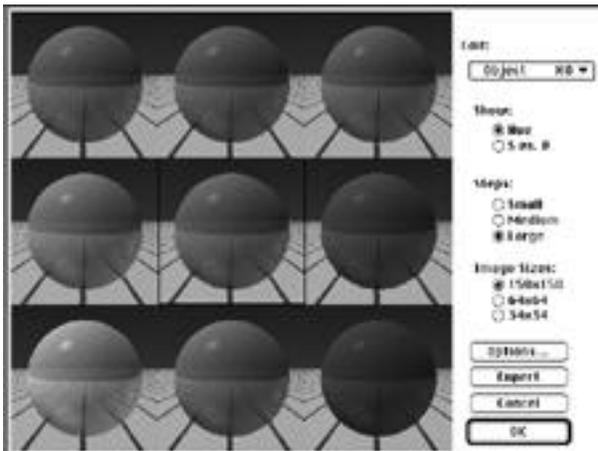


Fig. 5 - Explore dialog using Large Steps

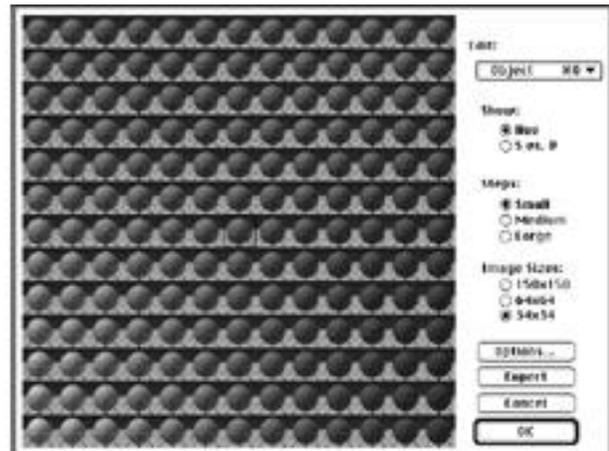


Fig. 6 - Explore dialog with 169 variations

"While using the Explore function, I was able to narrow down the surface attributes *far* faster than with any other program", says Eric King. "It enabled me to spot alternatives that I just would not have thought to use. The fact that all updates are instantaneous on my 8500/120 was just amazing."