Presenter 3D's New Features

With the Presenter 3D release, VIDI is elevating 3D modeling and animation to a new level. Building on our Digital Clay™ sculpting and Directional 3D Sound™ capabilities, VIDI is introducing powerful Multi-Target Morphing, ground-breaking Explore surface editing, unique motion control plug-ins, and complete QuickTime VR movie generation capabilities. These make high-end effects like the geese flocking scene in *Fly Away Home* and the lip syncing of *Toy Story* now readily doable and affordable on the Macintosh.

Presenter 3D represents a major upgrade to VIDI's modeling and animation technology and an aggressive commitment to support Apple technology. VIDI is offering the first complete solution for creating QuickTime VR scenes and object movies and is now fully supporting QuickDraw 3D. Multi-target Morphing provides the tools necessary to create rich character and facial animation, and a new visual tool helps fine tune surface attributes, VIDI also further enhances its extensible animation technology with new group motion and particle effect plug-ins.

Presenter 3D offers new features not found in any other application on any platform and required a significant level of innovation and engineering development to complete. Presenter 3D was optimized to support a new plug-in architecture, provide improved ray tracing speed and memory utilization, and, with the introduction of targeted 3D morphing features, support a new, complex data structure called "generation object sets."

Additional capabilities include a 3DMF import/export capability that is unique in its support of NURB surfaces and a QuickDraw 3D viewer built into the 3D window.

To Presenter 3D's unique Wrap texture mapping that fits the map directly on the spline-mesh surface and eliminating projected map distortion and "creep", we added Cylindrical, Spherical, and Cubic mapping along with graphic map placement interface. The Ease In/Out buttons enable animators to smoothly vary any parameter over time.

Blazing Phong

VIDI added a new Phong shader that provides extremely fast rendering speed. Users like Bob Sauls and Shelly Green say that it's faster than Electric Image's Phong shader and Eric King says the speed is "downright scary".

If you don't have Presenter 3D yet, download the demo version and give it a try.

QuickTime VR

VIDI is aggressively supporting Apple's exciting, new QuickTime VR movie technology that simulates 3D environments. We do this by providing full integrated support for creating QTVR panorama and object movies right on Presenter 3D's Digital SoundStage™. The software provides you with the virtual stage, lighting, sound recording, and virtual QTVR cameras for the creation of a QTVR panorama or object scene.. Creating a QTVR node requires only the simple action of pressing start and selecting the rendering options. The software handles ray tracing a

cylindrical view, rotating and dicing the image, and encoding the QTVR parameters. No additional steps or utilities are required.

"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 tools, the whole process of generating a QTVR panorama or object movie has been simplified to one step. It's nice and fast too."

Bob Sauls, lead designer for Jack Frassanito & Associates says "Thanks for helping us pull off our NASA project, a multimedia piece on the space station. All of the models, renderings, animations, and QTVR's are 100% VIDI. There are about 100 renderings, 20 animations, and 10 QTVR movies. It's unbelievable how fast the new ray tracer is, it smokes. "All of the simulations of the space shuttle docking with the Russian space station shown on CNN, Nightline, and the national evening news were created by Bob entirely with Presenter 3D.

With QTVR now a part of Netscape's browser for the Internet, we see our role expanding as a provider of web site content development. VIDI is committed to fully exploiting the capabilities of the QTVR 2.0 extensions in the future, including multiple nodes, animation within panoramas, and Directional 3D Sound™.

See an example of Bob's QTVR movies of the space station and check the QTVR Panorama and Object Tech Reports on VIDI's web site to see how QTVR movies are created.

3D Morphing

For Facial, Muscle, Character, and Lip Syncing Morph Animation

Presenter 3D's Multi-Target 3D Morphing builds on the existing 3D Digital Clay™ sculpting and Directional 3D Sound™ capability to provide powerful facial animation, muscle flexing, character reshaping, and lip motion synced to sound.

The key to Presenter 3D's Multi-Target Morphing is the ability to create an unlimited number freeform morph shapes, while using only a few hard-targets in a variety of blended soft-target combinations. To create facial expressions with other packages, the only alternative is to sculpt hundreds or thousands of key poses (hard-targets) individually.

One of the most difficult things to do in character animation is syncing the lips and other facial features to the words spoken. The movie *Toy Story* and the TV program *ReBoot* are prime examples of the use of 3D in character animation in films, TV, and games. Even with all the powerful equipment and software he had at his disposal, John Lasseter, the Toy Story director, found this to be a difficult task. Presenter 3D not only makes it doable on the Macintosh, it makes it easy.

"Inspired by computer animated effects in Motion Pictures, I often found myself asking the question, How could I do that?" says graphic artist, Perry Marks. "Recently after seeing Fly Away Home, I set out to model and animate a flock of geese with the goal of simulating their organic shape and natural fluid movement. With Presenter 3D's powerful spline-based modeling capabilities, Multi-target

morphing, and KineMagics motion control animators, this project literally took flight. I was amazed to find that the fluid movement I wanted was achieved with only two morph targets. This together with the real time preview saved me a lot of time and made it an enjoyable and educational experience. "

"Presenter 3D's new morphing is ideal for creating and animating facial expressions, as well as showing 3D characters talking" says Peter Ratner, Professor of Fine Art and Animation at James Madison University. The new morphing capability is used in my animation class for generating facial expressions and muscle movement on computer-generated human models. Changing facial expressions in Presenter 3D was easy since, 'A smile is just a frown turned upside down'. You create a smile, or a frown, simply by dragging the slider for the frown target from the right to the left. I found this to be extremely intuitive and saved me a lot of design work."

Check the Morph, Flock, and LipSync Tech Reports on VIDI's web site to see various application of Multi-target Morphing and KineMagics motion effects plug-ins. To see how the 3D microphones are used in recording sound effects, check the Doppler Tech Report located on the site

Surface Editing

One of the most time consuming tasks in 3D modeling is the task of correctly setting the surface parameters. This generally involves a series of trial and error steps of trying some settings, rendering, examining the results, changing settings, and starting over again.

With Presenter 3D's new real-time shader and Explore, one of the most complicated tasks in 3D modeling is as easy as just clicking on the image that looks the best. VIDI developed this ground-breaking improvement in shader technology to allows artists to make adjustments to shading parameters and see the effect on the final rendered surface in real time.

In Explore, you are shown a grid of ray traced balls with differing surface parameters. In the center the current value is shown. By clicking on one of the other balls, its values becomes the current version, and moves to the center. In other words, to use Explore, click on the picture that is closest to the version you want until you're happy with how it looks.

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.

"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."

Ronald Davis, a fine artist whose paintings are in the permanent collection at the Museum of Modern Art in New York, The Tate Gallery in London, and many others says, “Presenter 3D’s new and intuitive graphical surface attribute selection tools enable me to select the virtual color interaction, reflection, diffuse shading, specular highlites, inner glow, transparency, and refraction for every surface in my digital paintings. It gives me a far easier and very accurate way to define a series of rendered options for all surface attributes. It does this without the trial and error metaphor found in other 3D software.”

Check the Explore Tech Report on VIDI's web site to see the application of realtime surface editing.

Explosions

Simulating explosions is a popular effect used in creating multimedia, game, film and video special effect sequences. Presenter 3D provides an open plug-in structure in which custom-designed plug-ins produce motion effects such as a person walking, the effects of the wind blowing, and the flocking of birds. These motion effects can be produced simply by applying the appropriate motion-effect plug-in to an object in your scene. Presenter 3D’s Shatter plug-in, enables you to create a variety of explosion effects directly on the Digital SoundStage™.

The Shatter plug-in offers options for specifying the starting point of the explosion, the force of the explosion, and the relative magnitude of the pieces created by the explosion. Coupled with Presenter 3D's Directional 3D Sound, the result is a truly awesome effect.

Check the Explosions Tech Report on VIDI's web site to see how too blow a grasshopper to smithereens.

Motion Effects

The KineMagics™ motion effects animators provide automatic control and flexibility over movement of objects and between multiple objects. Included plug-ins are:

Flock for flexible group movement such as birds or planes flying in formation, a school of fish swimming, or a horse stampede.

Link for fixed group movement where multiple objects are locked into position.

Track for making sure that the selected object always points at the target object. This is useful for getting cameras, lights, and microphones to “point-at” other animated items.

Path with automatic banking control provides improved control over motion along a spline path and works with all the previous plug-ins to automatically control the direction.

Check the Flock Tech Reports on VIDI's web site to see how the KineMagic motion effects plug-ins could be used to create effects like that produced for the movie, *Fly Away Home*.