Right Hemisphere®
Deep Creator™

■ Accelerate delivery of compelling interactive training including computer based training (CBT), instructor led training (ILT), simulation and virtual reality

■ Expand pool of interactive training authors

■ Leverage existing 3D assets and modeling applications

Introduction

3D computer games have set a new standard for interactivity. Dynamic, event-based 3D interactions enable compelling and complex game scenarios that mimic real life. Innovative enterprises are now applying similar virtual reality and simulation technology to the challenge of interactive training. This approach is especially valuable when training employees and customers who operate and support complex products such as airplanes, automobiles, military systems, and the like.

But building "cool, game-like" interactive 3D training is not easy. It requires skilled 3D authors, specialized interactive 3D authoring applications, and a fast paced approach that delivers training at today's accelerated innovation rates.

The interactive 3D authoring application is the lynchpin. Traditionally, these applications have either been "underpowered" or "too complicated". But Right Hemisphere's Deep Creator is "just right", matching an easy to learn and use development approach, extensible authoring tools built on a powerful game engine, and asset-leveraging integration capabilities.

Right Hemisphere's Deep Creator lowers the cost of authoring interactive training, increases revenue via graphically differentiated training offerings, and lower operating costs via better trained employees and customers.

With Deep Creator you can:

▶ Easily author high quality, interactive 3D scenes

▶ Rapidly author complex, event driven, interactive 3D scenes

▶ Integrate interactive training content

Lockheed Martin Corporation © 2005

Innovative enterprises are applying virtual reality and simulation technology to interactive training.

Easily author high quality, interactive 3D scenes

Most companies have graphic artists and training courseware developers. But few have large numbers of skilled 3D developers who can author event driven 3D simulations and virtual reality. Must you hire more 3D developers? Or can your existing staff, using an intuitive and forgiving toolset, generate high quality interactive 3D scenes on their own?

Right Hemisphere's Deep Creator expands your pool of interactive 3D authors. Deep Creator's user interface leverages familiar GUI components thereby enabling experienced and novice 3D authors to become productive quickly. By combining modeling, scene composition, event and key frame animation and scripting in a single package, your content creators focus on content creation, not disparate tool mastery.

Key capabilities include:

▶ Friendly, familiar Windows™ text boxes, sliders, drop downs, tab panels, etc.

▶ Unified workspace incorporating modeling, scene composition, event based animation, key-frame animation, and scripting tools

▶ Easily adjust and refine animation timing, amounts, and object positions within a WSYIWYG development environment

Rapidly author complex, event driven, interactive 3D scenes

Let's face it, computer games have set the 3D interactivity bar high. Today, your computer based training, instructor led training, simulations and virtual reality need to meet this standard or your users will tune out and your desired training impact will not be achieved. Realism is the key. So, the interactive 3D authoring application must be powerful enough to provide this realism. Yet, it cannot be so complicated or programming intensive that it takes forever to deliver this level of realism.

Right Hemisphere's Deep Creator accelerates delivery of compelling interactive training, including CBTs, ILTs, simulation and virtual reality. Deep Creator uses a proven, object-oriented approach to building interactive 3D scenes. With hundreds of standard objects including primitives, alterations, animations and the like, plus a full palette of materials, shaders, and lighting, you can quickly drag and drop your way to a highly realistic interactive 3D scene. And if you need to go further, Deep Creator's scripting tools and C/C++ API can get you there. Whatever you create, Deep Creator's game engine can play back in real-time, with realism and event based interactivity on par with today's hottest computer games.

Key capabilities include:

▶ Over 60 event driven animations and hundreds of standard objects

▶ Powerful game engine

▶ LISP scripting and C/C++ API with extensive examples
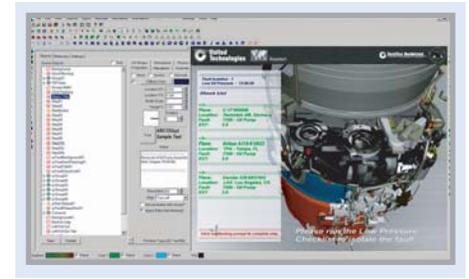
Deep Creator's User Interface leverages familiar GUI components enabling experienced and novice 3D authors to become productive quickly.

Pratt & Whitney used Right Hemisphere's Deep Creator and Deep Server to develop a real-time, interactive diagnostic system for troubleshooting aircraft engines.

With over 60 event driven animations, hundreds of objects, and a powerful game engine, realistic simulations are easy to design and implement.
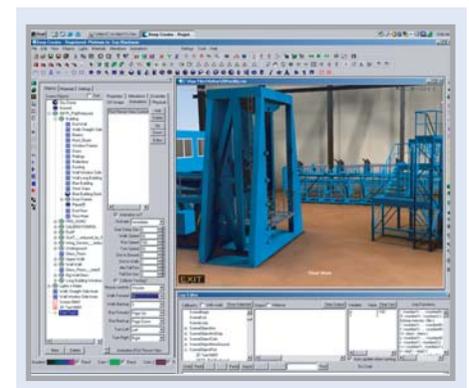
FTI Engineering used Deep Creator to create a interactive, fly-through simulation of the Airbus 380 High Lift Test Rig capabilities.

Integrate interactive training content

With the explosion of 3D CAD, multimedia content, powerful digital content creation applications, and more, the game has changed for interactive 3D authoring applications. Gone are the days when your training content developers authored everything from scratch. Why recreate, when you can reuse. Besides, who has the time? Integration is the key in today's world.

Right Hemisphere's Deep Creator leverages existing 3D assets and popular modeling applications. Leveraging Right Hemisphere's powerful CAD transformation capabilities to provide lightweight product graphics, you can jump start scene building. Similarly, you can import content from the leading DCC applications as an additional source of content as you develop realistic interactive scenes. Likewise, incorporating existing video, text and other multimedia content is a snap. The result is more powerful interactive training, built faster, at lower authoring and operating costs.

Key Capabilities include:

▶ Native support for PGM derivative graphics in .rh file format

▶ Import over 30 different modeling applications such as 3DS Max, Maya, XSI, Lightwave, Cinema 4D, etc.

▶ Incorporate video, text, audio, and 2D graphics

▶ Publish SCORM compliant 3D web content

Summary of Selected Features

Authoring	
High Productivity Authoring Environment	- Easy to use, standard windows interface comprising: menu bar, easy to use toolbars, 2D and 3D view ports and simple to use mouse controls - Full WYSIWYG interactive authoring with 3D preview - Unified workspace incorporating object importing, modeling, scene composition, event based animation, key-frame animation, and scripting tools materials
File Import Options	- Import from leading Digital Content Creation tools including Max, Maya and over other 30 leading 3D file formats - Import CAD data via Deep Server and Deep Exploration
Powerful Modeling Tools	- Over 60 primitive 3D objects including lines, spheres, boxes, stairs, gears, arches, and more - Over 50 3D object alterations including bend, twist, taper, and more - 3D Boolean operations including: union, intersection, subtract, fracture, merge - 2D geometry drawing including line, polyline, arc, circle, ellipse, rounded rectangle, polygon, star, triangle, and more - 2D UI authoring tools including sliders, text box, radio buttons, text and image blits - Object grouping tools to drag and drop, in and out of groups
High Productivity Editing tools	- 3D object, face, edge, and vertex editing - Axis transforms for easy object moving, scaling and rotation - Shape editor to edit the "shape" of animation, selections and objects - Objects selection by window, circle, polygon, inside, outside and crossing - Grid, object snapping, and grid snapping - Polygonal editing tools to collapse meshes, invert polygons. flip normals. etc. - UV editor - Procedural texture creation
Rapid Application Development	- Scenes may be "played" directly in the editor prior to publishing - VCR like controls for scene play and stepping through sequences - Scene asset browser - Professional script program editor - Easy to apply animation behaviors - Scene statistical reporting - Save scene and related assets into zip file for easy project archiving

Visualization

Realistic Lighting	- Dynamic lighting including point, spot, directional and ambient lights - Import light maps - Light map generator - Real time shadows
Near Photo-real Quality	- Anti-aliasing - Mip-mapping - Bump and normal mapping - Model 2 vertex and pixel shaders - Multistage textures - Reflection maps - Texture blending - Advanced Pixel and Vertex shaders - Vertex coloring

Animation

- Over 60 animation behaviors
- Support for in scene video
- Render to texture
- Skinning and bones
- Character animation, including key-framing
- Visual key-frame and event based animation authoring

Simulation

- Powerful game engine
- Lisp-based scripting language for complex interactivity
- Over 250 preprogrammed functions
- Real time physics with rigid body dynamics
- Object collision detection
- Particle systems (planer and point) for simulating effects such as smoke, fire, and more
- Gravity and current objects for controlling particle systems and simulating atmospheric currents

Scene Publishing

- Publish to Web (Internet Explorer Active X viewer for HTML pages)
- Publish to executable form
- Publish to Right Hemisphere Interactive format (RHI) for standalone viewing or web delivery
- SCORM compliant minimal SCO publishing for RAPID LMS testing
- Display scenes in passive stereo on a single screen
- Display scenes in mono on multiple screens (e.g. large power-wall displays)

Extensible Authoring and Runtime Environment

- C++ Application Programming Interface with over
- Comprehensive documentation and samples
- Extend authoring capabilities through custom C++ plug-ins
- Extend scene simulation and visualization capabilities through deployable custom C++ plug-in

Network

- Support collaborative or networked simulations and displays
- Microsoft DirectPlay® network synchronization
- Integrated chat and easy to use network send data support
- Network Deep Creator Viewers for non-stereo multi-screen displays such as large area power-walls

Architecture

- Microsoft Windows based authoring and runtime
- Microsoft DirectX, version 9.0b compliant
- Shader Model 2 Pixel and Vertex shaders support
- Free distributable runtime viewer
- Free distributable Active X based web viewing
- Distribute scenes over HTTP with desktop viewer or a web browser
- ODBC database connectivity for relational database integration

System Requirements

Minimum	- Windows 2000, Windows XP operating system - Pentium 166 MHz processor or higher - 32MB of RAM - 100MB of available hard disk space - Microsoft DirectX, version 9.0b or greater compliant video card with hardware accelerated 3D rendering, and at least 4MB RAM - Microsoft DirectX, version 9 or greater compatible mouse - Microsoft DirectX, version 9 or greater compatible sound card
Recommended	- Pentium 500 MHz processor or higher - 128MB of RAM or higher

Right Hemisphere

Right Hemisphere® is the leading provider of Product Graphics Management software. Product Graphics Management is a new category of enterprise software that integrates, automates, and manages 2D and 3D product graphics across the extended enterprise. Five of the top six automotive OEMs, nine of the top ten aerospace and defense contractors, and hundreds more customers use Right Hemisphere software to streamline publishing of technical publications, interactive training, marketing communications, design collaboration documents, and more. Right Hemisphere accelerates time to market for new products and product support offerings, increases revenue and competitive advantage, and reduces product lifecycle costs.

Learn more about Right Hemisphere at www.righthemisphere.com

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