Esperient Creator 3.8

Contents

1. Introduction

3D computer games have set a new standard for interactive and engaging media presentation, pushing the boundaries of how we experience information. High quality, real time interactive 3D is a new tool in the designer's toolbox that helps make online, desktop and event-based media experiences more deeply engaging in different and innovative ways. Visual computing applications are changing how we work, learn and play. Creator has been designed to enable the creation of next generation applications that blend the compelling capabilities of interactive 3D technology with the ability to innovate in product communications and user experiences.

Creator enables rapid development of compelling interactive 3D applications and content for product communications, presentations, education, training and entertainment. Significantly lowering the cost and time barriers associated with creating interactive 3D media, it is specifically designed for creative artists and media designers. Users of Adobe Creative Suite, Autodesk 3DS Max or Maya, Google SketchUp and a host of other tools, will benefit from Creator's workflow design.

Discover how to create the next generation of media experiences
Esperient Creator - changing how we learn, work and play

2. Extended Features

The Smart Objects™ and Intelligent Materials™ Architecture introduced in Creator 3.5 has been extended to take the design and creation of application templates to a whole new level. Imagine creating a handful of Smart Objects™ that will allow *anyone* to use their own 3D data to build and publish fully functional applications within minutes. By reducing repetitive scene production times, authors can work on visual design with the functionality *already* in place, bringing productivity to its highest.

Dragging an Intelligent Materials™ water shader into an empty scene -
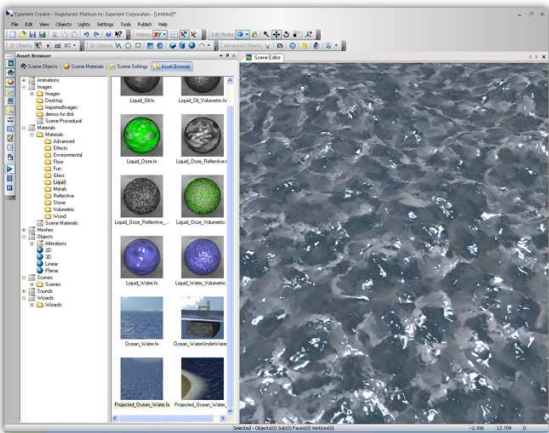
- the material automatically detects that no geometry is present, creates a plane and applies itself – saving steps, optimizing workflow.

New- Smart Objects™ List document with brief descriptions, locations, and links to in-depth information these productivity increasing assets.

Smart Objects™ and Intelligent Materials™

- **Enabling creation of reusable components that optimize workflow and allow for the creation of entire application templates**
- **Supporting easy to use drag and drop component deployment into a scenes**
- **Enabling creation of intelligent and interactive materials**
- **Making the design and implementation of sophisticated application templates a reality**
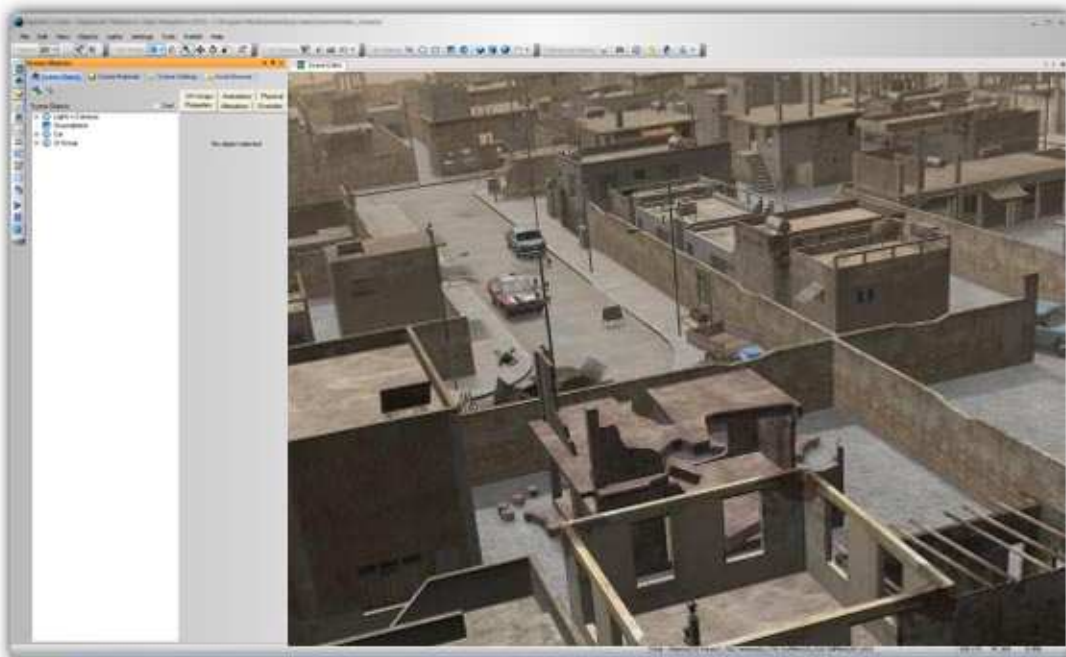
New- Scene notes for each object appear on mouse-over in the Asset Browser.
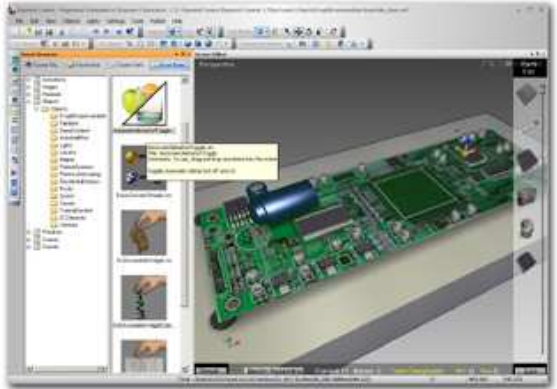
This drag and drop Assembly application takes only minutes to create with pre-existing 3D data.

New- Using Context Help with the Asset Browser takes you directly to existing help documents making solution finding quick and easy.

3. The User Interface

Working on real world projects, creative media designers live with their tools day in and day out. Project times range from tens to hundreds and, sometimes, thousands of hours. The only constant is high pressure deadlines and the need for tools that are trusted and reliable. We know this, which is why we have spent thousands of man hours designing and refining our user interface, workflow and core technology. Creator's simple to use development environment is based on a standard windows interface and a full What You See Is What You Get (WYSIWYG) interactive authoring environment.

Creator's unified workspace and workflow incorporates

-   Scene management
-   Asset management
-   Object properties
-   Object modeling
-   Material management
-   Event-based animation
-   Key-frame animation
-   Runtime Script editor
-   Interactive scene pre-view
-   Drag and drop content into scenes

All functionality is within one application and available at a click of an icon. All authored Scenes may be interactively played and paused directly in the editor prior to publishing.

Scene Editor
Scene Objects
Scene Materials
Scene Settings
Procedural Image Maker
Asset Browser
Animation Track Editor
Script Editor
Metadata Variables
Transform Editor
UV Editor
Play Scene
Pause Scene
Stop Scene

4. File Import Options

Creator can import content from leading digital creation tools including Autodesk 3DS Max, Maya, XSI, Adobe 3D and more than 30 other leading 3D file formats. In addition to 3D content, Creator can import video, text, audio, and 2D graphics with support for more than 40 different 2D graphics formats. CAD data support is offered via integrated workflows with Right Hemisphere Deep Exploration or Deep Server using the .RH file format.
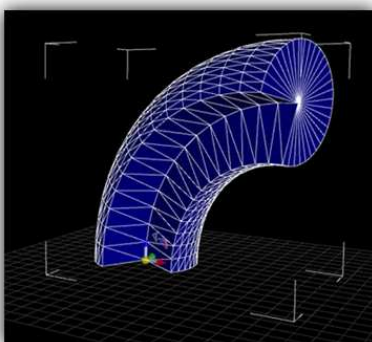
5. Built-in Modeling Tools
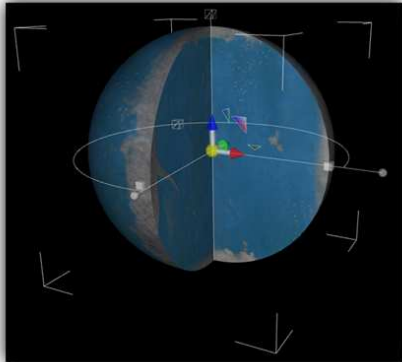
60+ built-in procedural modeling primitives
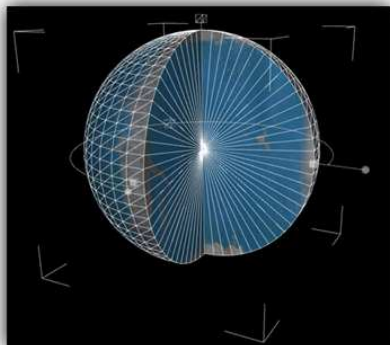
Built-in 3D Object modeling and editing tools

Object alterations enable advanced object modeling, visualization & animation

In addition to being able to import existing 2D and 3D content, Creator includes a complete toolset to allow direct application creation. This means that next generation applications can be developed without requiring any other 3D software.

Creator's features include:

- Over 60 built-in primitive 3D objects ranging from lines, spheres, cubes and planes to complex objects such as stairs, gears, arches, and more. Each primitive object has easy to use property grips to simplify scene placement and object manipulation

- Over 50 3D object alterations including bend, twist, taper, and more which can be used to modify in-built primitives for modeling – enabling creation of complex objects

- 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 for standard 2D user interface components

- Object grips and transform axes to visually control object size, position and surface subdivision

- 2D and 3D reference grids to assist with object positioning (including snap to grid, angle snap etc)

- Polygonal editing tools for object, face and vertex editing, together with tools to collapse meshes, invert polygons & flip normals

6. Animation & Simulation

Creator supports a large number of interactive animation techniques. More than 60 animation behaviors - including object transforms (move, rotate, scale), color change, real time physics, keyboard and joystick controls –are available with just a mouse click.

Skinned and boned animated characters can be imported or created within Creator

Color Changes ▸
Cursor and Inventory ▸
Deformations ▸
Match Object to Viewport ▸
Object Transforms ▸
Materials ▸
Physics ▸
Sounds ▸
Joystick ▸
UV Wrap Transforms ▸
View Changes ▸
Animation Group
User Movable
User Spin-able
Object Property Var
Object Alteration Var
Object Animation Var
Object Animation On/Off
Object Alteration On/Off
Object Show/Hide - On/Off
Triggers ▸
Activate Callback
Animation Cull
Collision - On/Off
Make Object Non-Pickable
Edit Box Text Entry
Exit Scene
Lens Flare
Opacity Adjust Object
Reset Object Animation
Restart Scene
Socket Messages

Event-based animations and real time physics

Video content applied as textures

A**nimation categories**

7. Visualization

Dynamic shadows increase visual realism

Support for multi-layer materials

Real time reflection

Effective use of materials, lighting and shadows are the key elements to the visual quality of interactive 3D user experiences. Creator is equipped with:

- Multi-stage textures

- Dynamic lighting

- Real time shader-based dynamic lighting & soft shadows

- Mip-mapping to preserve texture quality

- Over 100 vertex and pixel shaders

- Bump & normal mapping

- Reflection maps

- Import and generate light maps

- Ambient occlusion alteration

- Screen based ambient occlusion

Creator advanced render functions include:

- dynamic procedural textures

- dynamic render to texture from any scene object or camera

- Real time reflection

- Real time refraction

- Extensive shader support

Creator ships with over 100 pre-built shader effect files including: metals, glass, water, ocean, reflection and post-processing effects such as motion blur, bloom, sepia, skybox and depth of field.

Creator also ships with a unique ability to view volumetric datasets using real time shaders and to intermix these with polygon-based content or use as standalone tools. Pre-built volumetric shaders for volumetric smoke, fire, coral and volumetric solids are also available.

A soap bubble dynamically reflecting its environment in real time
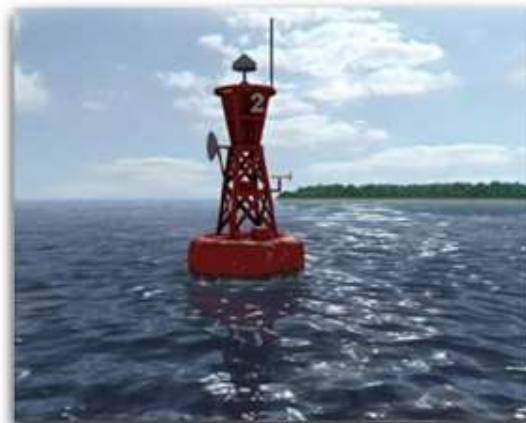
Real time reflection and refraction on simulated ocean water
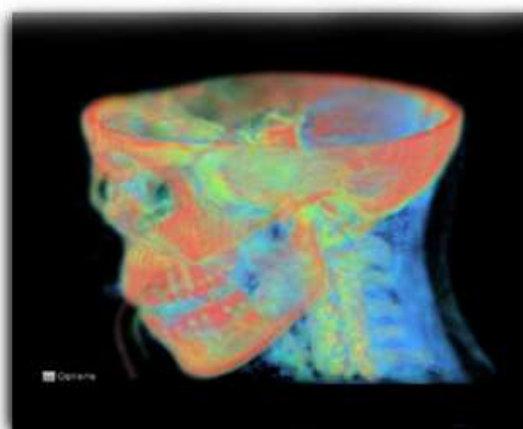
Volumetric display of MRI data

Mirror objects provide reflective ground surface

Skybox shader for environment
Particle system for rocket exhaust

Particle systems for dust trails
Contact particles for tire tracks

Creator ships with a number of visualization tools to create various special visual effects for presentation, games and interactive visualizations.

The Mirror object and Floor shaders provide means to deliver real time reflective surfaces depending on target hardware.

Creator has in-built particle systems' effects including:

- Basic
- planar
- contact
- projectile

Particle systems respond to scene forces and scene gravity. Gravity and force objects can be used to create particle flow around objects, enabling visual simulation of dynamic flow and atmospheric effects.
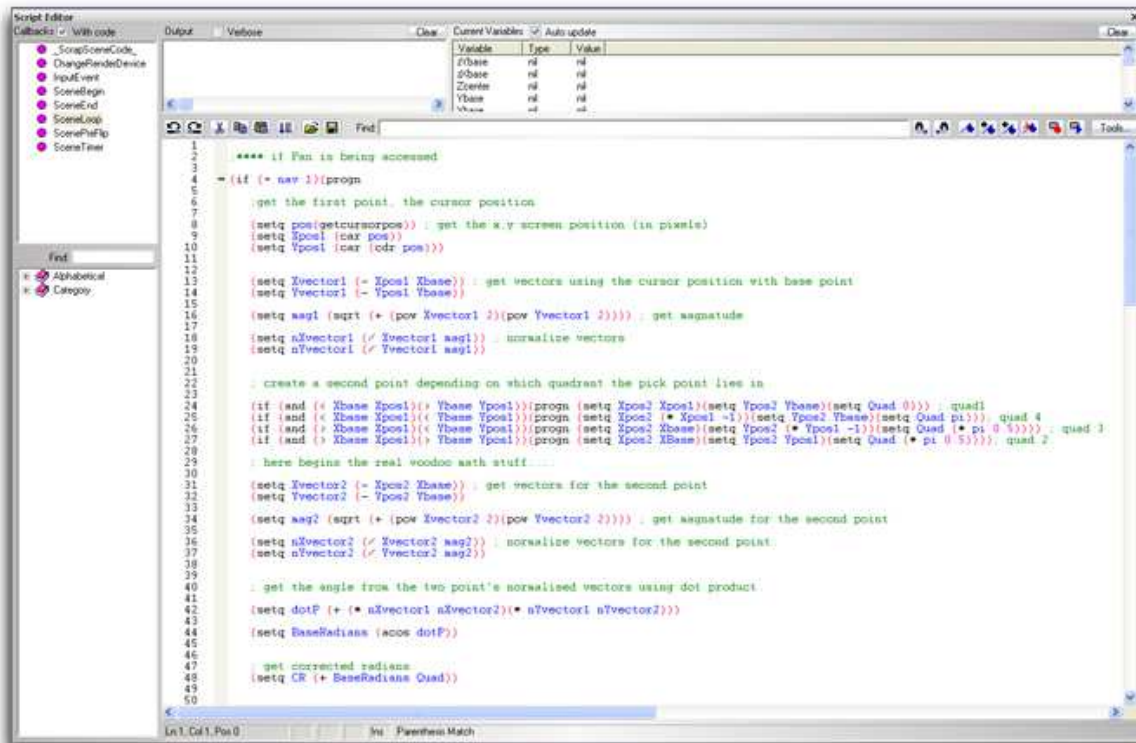
Particle systems also provide a means to create visual effects including smoke, sparks, dust etc.

Contact particle systems enable designers to visually represent environmental changes in response to object movement e.g. Tire tracks, footprints, or surface scratches.

8. Advanced Applications Development

The in-built scripting editor supports color coding, command completion and integrated help

|	
Built-in Scripting	- Powerful game engine with a choice of two easy to use scripting languages; CScript, an object orientated scripting language, and Creator lisp
	- Easy to use professional scripting development environment with color coding, intellisense-like command completion and integrated help
	- Web browser, visual basic and embedded program communication direct from both scripting languages
	- Extremely easy to use application programming interface with over 300 API commands with extensive documentation and examples
Database	- ODBC database connectivity for relational database integration.
Networking	- Integrated easy to use network send data support and chat
	- TCP/IP Socket animations & API commands for sending messages and text between client and server applications

Extensible API

Creator authoring and runtime environments are fully extensible using the free C++ API. The API is accompanied with comprehensive documentation and samples for Microsoft Visual Studio and both the authoring environment and the runtime environments support a deployable C++ plug-in architecture.
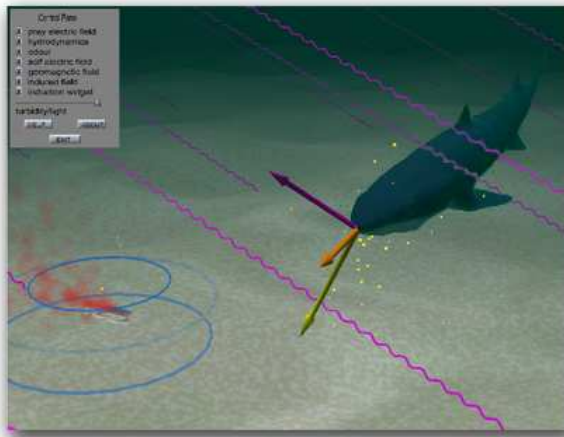
C++ plug-in architecture allows for robust scientific visualization as with University of Otago's virtual dogfish- a project to model neural mechanisms of prey tracking and navigation in sharks.

Develop support for :

- **Integration with extensive databases**

- **Augmented reality systems**

- **Interface with actual and virtual control panels and equipment**

- **Virtual reality and tracking systems**
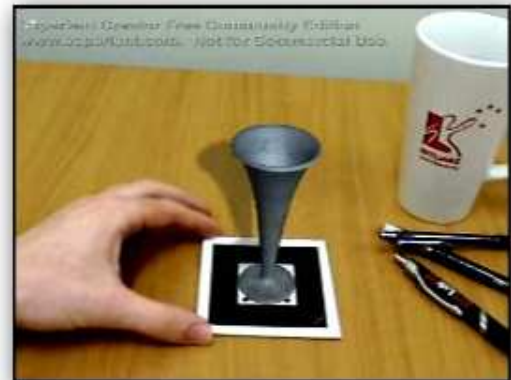
Augmented reality from HITLab New Zealand

---

9. Scene Publishing: Desktop, Web & Surface

Creator publishes interactive content to desktop, web, stereo and for surface based displays.

Creator's publishing solution is based around:

- free distributable runtime viewer

- free distributable ActiveX-based web browser viewing with bi-directional JavaScript support

- self contained executable with viewer and data embedded together for direct publishing


Desktop: published as self contained executable

Creator scenes can be published as part of web applications and SCORM compliant learning content.

There are no licenses fees for distributing content created with Creator.

Creator runtime viewer can display scenes in passive stereo on a single screen or networked non-stereo on multiple screens (e.g. power-wall displays) for large area surface based displays projects.
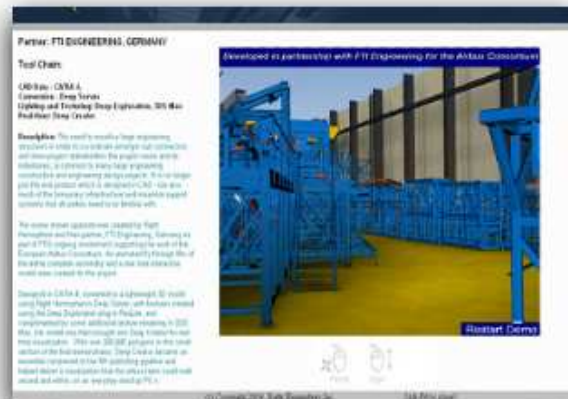
Web: Easily embed in a web pages

Surface: A 32 foot wide projected power wall display, driven by four networked computers

10. Creator – Product Options

Esperient Creator is available as a free community edition and a commercial license. The difference between the two versions are summarized below:

Registration Edition	Community	Enterprise
Price	**Free**	**$3000**
Features		
Register Reminder Dialog	Yes	No
Group Import Cleanup Tools	No	Yes
Cube Map Tools	No	Yes
Scene Report	No	Yes
Plug-in (compiled .DLLs) Support	No	Yes
News Dialog	Yes	Optional
Import	Limited	Yes
Export	No	Yes
Publishing	No	Yes
Watermark	Yes	No
Script Editor	No	Yes
Shader Editor	No	Yes
Networking and Sockets	No	Yes
Tracking	No	Plug-in Available
Web Connect Dialog	No	Yes
Stereo	No	Yes
Esperient Splash Page	Yes	No
Training *	None	None
Technical Support **	User Forum	User Forum and Email

* Custom and standard training courses are available

11. Minimum System Requirements

- Microsoft Windows XP or Microsoft Vista
- Pentium 1 GHz processor or higher.
- Microsoft DirectX, version 9.0c or greater
- Microsoft DirectX, version 9.0c or greater compliant graphics card compliant video card with hardware accelerated 3D rendering, and at least 128MB RAM
- Scenes using shaders require at a minimum, shader Model 2 Pixel and Vertex shader card support (this is standard functionality on modern graphics and games video cards)
- 512mb memory
- Network Card (for network visualization and simulation capabilities)