

Right Hemisphere[®] Deep Exploration[™] CAD Edition Selected Features

Summary of Selected Feature for Version 5.0

High Productivity Desktop PGM Application Environment

Easy to Learn User Interface

- Quickly navigate, search and display 2D and 3D graphics with familiar Microsoft Windows Explorer interface
- Unified workspace incorporating translation, 3D object modeling, scene composition, key frame animation, illustration, and publishing
- UI with dockable toolbars for customized layout
- Easily manipulate and interact with 3D scene using standard 2-button mouse (Pan, Zoom, Rotate)
- Search your computer, network, and/or the Internet for files by file name or format
- Keyboard shortcuts for increased productivity
- NEW** - Improved UI, prompt to Save, Copy & Paste for creating object instances

Powerful Object Editing

- Interactive object highlighting to easily identify selected or non-selected objects for editing
- Primitives and modifiers to add simple geometry to scene without the need for other 3D authoring packages
- Grouping and hierarchy tools available to easily manage complex models
- Precision selection tools enable complex shapes to be selected during model cleanup, scene alteration, and animation editing
- NEW** - Add BOM/Parts List from external XML
- NEW** - Pull Apart objects tool and reset to original default/home state
- NEW** - Mirror tool to quickly create object instances with transformations

Advanced Scene Configuration and Layout

- Multiple viewport configurations enable up to four simultaneous views of scenes for easy alignment and editing of geometry
- Flexible viewport modes (1/2, 3/4, full) for authoring, editing and viewing
- Gradients and background images can be used as the viewport background
- 3D object shadow makes scenes more aesthetically pleasing and photoreal
- Layers for associating scene components provide an alternate way to group, manage, and display geometry and scene elements
- Optimized rendering engine for the highest quality and performance real-time display
- Merge multiple 3D files into scene
- NEW** - Detail View zoom tool to create locator graphics
- NEW** - Universal, CAD and PMI Metadata support and Browser
- NEW** - Reordering of Layers

Powerful CAD and DCC Transformation

Accurate CAD and DCC Model Translation

- Import and translate over 80 CAD, 2D and 3D graphic formats (See View / Import Formats list below)
- Import options to control polygonal mesh density for optimal visual quality
- Maintain CAD and DCC 3D hierarchy, materials, and attributes such as part identifiers, assembly structures, call outs
- Translate camera, key frame animations, inverse kinematics, soft-body animations, skin and bones across all major DCC file formats
- Translate, structure and display vital CAD Product Manufacturing Information (PMI) data to significantly reduce the cost of 2D drawings
- ENHANCED** - Translate, structure and display JT Product Manufacturing Information with additional JT/PMI Module

3D Graphics Optimization

- Best in class, dynamic polygon reduction to reduce file size and preserve shape of objects
- ENHANCED** - Object instancing for smaller file sizes, faster data transfer and increased real-time performance
- Remove hidden objects which are not visible from the outside of the objects to further reduce file size
- Select and remove small objects dynamically based on the size or polygon count
- Merge and/or remove materials to reduce the number of materials in the 3D scene
- Join equal points for more efficient models in real-time visualization

3D Graphics Repair

- Unify normals for proper orientation to camera
- Invert faces and normals and easily isolate and select backward or front-facing surfaces
- Heal polygonal models, join cracked models and weld vertices while maintaining edge definition

Unified 2D and 3D Product Graphics Authoring

Photoreal 3D Image Authoring

- Apply real world materials, textures and reflection maps from advanced materials palette to achieve realism
- Edit material attributes including diffuse, bump, opacity, reflection, and more
- ENHANCED** - Enhanced automatic UV maps capability enables texture maps to be applied to 3D models
- ENHANCED** - Realight™ that bakes shadows to texture maps or vertex colors to simulate global illumination
- Advanced material thumbnail display allowing easy material identification and object selection by material
- Apply different colors to adjacent objects for easy visualization of complex assemblies
- NEW** - Selectable Object Elements tool allows materials to be set for groups of faces, add different materials, flip normals
- NEW** - Add lights and advanced primitives
- NEW** - Bake Transformation tool
- NEW** - Improved Color palette/selector

3D Animation Authoring

- Create and edit advanced key frame 3D graphic and camera animations
- Full featured animation timeline editing allows key frame location and properties manipulation
- Independent multiple animations control using animation sequences and sequence tracks for position, rotation, scale, and opacity
- ENHANCED** - Assign sequences to steps to create assembly / disassembly procedures
- Numeric and interactive object positioning tools allows precise object and animation editing
- Explode objects and create explode animations automatically
- NEW** - Camera trajectory editing
- NEW** - Automated parts and assemblies update workflow
- NEW** - Key framing extensions to new data types - color, position, rotation, texture UV

Steps Authoring

- ENHANCED** - Step authoring to communicate interactive assembly / disassembly procedures
- ENHANCED** - Each step includes the step name, description, keyword metadata, and one or more sequences

Model Views Authoring

- Predefined views of graphics to ease viewing and navigation
- ENHANCED** - Associate current camera position, render mode, and 3D object visibility within each model view
- NEW** - Standard and custom Output Size options dialog for precise graphics alignment

High Quality Line Art Illustrations Authoring and Rendering

- Industry standard vector and raster file formats
- Create illustrations from predefined isometric, diametric, and trimetric views and specify unique views via XML
- Multiple render modes such as Line Illustration, Solid Outline, Shaded Illustration, Transparent, Wireframe, and more
- Specialized rendering engine mode to emulate technical illustration line art
- Orthographic and perspective camera projection
- ENHANCED** - Bills of Material (BOM) display associated with scene parts
- Callouts adapt to 3D motion and can be automatically positioned to face the camera
- Callout control settings for callout style, label, placement, color and size
- ENHANCED** - Automated display of parts callouts
- ENHANCED** - Callouts generated from 3D scene, selected parts or a list may be externally supplied in XML format
- ENHANCED** - Edge threshold, line weight, color and shading parameters controls
- High quality photoreal raytraced images generation that include shadows, reflections, transparency and other effects
- Realistic lighting effects
- Render images with alpha channels for advanced compositing
- NEW** - 2D and 3D Symbol library that is S1000D compliant
- NEW** - 2D line styles in 3D Viewer and 2D vector and raster Illustration outputs
- NEW** - Easy Thrustline creation including animation
- ENHANCED** - High quality illustration export - removal of duplicate lines, join lines, etc.
- NEW** - Illustration support, thick n thin rendering, color fill, and more
- NEW** - 2D Alpha tool for creation, removal, and manipulation of alpha channels in texture maps
- NEW** - Drawing tools added to improve technical illustration workflows
- NEW** - WebCGM export including automatic hotspot creation

View and Markup Graphics

- ENHANCED** - Measurement tools measure the distance between two object including angles and display focusing on relevant measurements
- ENHANCED** - Markup and annotations including note, cloud, URL, line, and various shapes
 - Clipping plane to create dynamic cross sections to better understand 3D models
 - Slide show mode to display both 2D and 3D graphics
- NEW** - XYZ markup filtering for improved collaboration
- NEW** - Cross section cutting plane, half and quarter sections - box section cutting
- NEW** - Detail views for detail and locator view graphics
- NEW** - Ability to calculate surface area and volume of a model
- NEW** - Thumbnails of 3D Models viewable within Microsoft Explorer
- ENHANCED** - Partslist functionality, including DragnDrop renumbering, support for external BOMs, and multicolumn metadata support

Flexible Options For Publishing Finished Product Graphics and Documents

- Export to over 40 2D and 3D graphics formats (See Export Format list below)
- Publish and view 2D and animated 3D graphic content within Microsoft Office and Adobe Framemaker documents
- Publish and view 2D and animated 3D graphic content within HTML pages
- ENHANCED** - 2D and interactive 3D PDF publishing with the included PDF Publishing Module
- Publish CAD Product Manufacturing Information (PMI) data
- NEW** - Create custom PDF templates for 2D and interactive 3D PDF document publishing

Support for High Volume, 2D and 3D Graphics Processes

- Use Deep Exploration CAD Edition to define and pilot graphics transformation and authoring processes before automating these processes in Deep Server
- Use Deep Exploration CAD Edition to perform final touch-ups on graphics automatically generated by Deep Server
- Upload 3D graphics authored in Deep Exploration CAD Edition into Deep Server to automatically generate additional predefined 2D and 3D product graphics
- Use Deep Exploration CAD Edition for one-offs and other small projects where Deep Server scale automation is not required
- Use Deep Server's repository to manage 3D graphics authored in Deep Exploration CAD Edition

Multiple File Options

View / Import Formats (see complete file import/export details on Right Hemisphere Web site)

- Over 30 2D raster image file formats including PSD, BMP, TIF, GIF, JPG, PNG, and HDR
- Over 50 DCC file formats from leading DCC applications including 3ds max, Lightwave 3D, Cinema 4D, Maya, XSI and more (RH, U3D, MAX, 3DS, LWS, LWO, XSI, C4D, MB, OBJ, X, COB, FLT, and VRML, etc.)
- Over 30 CAD file formats from leading CAD vendors including Dassault Systems, Autodesk, PTC, UGS and more (CATPart, CATProduct, Model, ASM, PRT, SLDASM, SLDPRT, IAM, IPT, JT, MF1, XV3, XV0, PAR, DGN, STEP, IGES, DWG, DXF, STL, and SAT, etc)
- Vector Illustration file fomats including AI, EPS, DXF, CGM, SVG, SWF, and WMF
- Audio file formats including MP3, MP2, WAV, AIFF, SND, MIDI, RMI, AU, and MPA
- Video file formats including AVI, MPEG, M1V, and ASF
- Motion capture file formats including BVH, CSM, C3D, HTR, TRB and TRC
- Text in XML
- Bill Of Materials (BOM) in XML format
- See complete file view, import, and export details on Right Hemisphere Web site
- NEW** - Google SketchUp - SKP
- NEW** - AutoDesk FiLMBOX - FBX
- NEW** - Collada - DAE
- NEW** - Silo3D

Export Formats

- 2D raster image file formats including BMP, TIF, JPG, PNG, EXR, PPM, IIF, and TGA
- PDF documents including 2D, 3D, text and forms via additional PDF Publishing Module
- NEW** - 3D graphics file formats including RH, U3D, MAX, MB, LWS, LWO, XSI, OBJ 3DS, FLT, GEO, COB, X, and VRML
- ENHANCED** - Vector Illustration file formats including AI, EPS, DXF, CGM, SVG, and SWF
 - Video AVI
 - Motion capture file formats including BVH, CSM, TRC
 - See complete file view, import, and export details on Right Hemisphere Web site
 - JT export (requires additional JT/PMI Module)
- NEW** - 3D XAML
- NEW** - Google SketchUp - SKP
- NEW** - AutoDesk FiLMBOX - FBX
- NEW** - Collada - DAE
- NEW** - Silo3D
- NEW** - WebCGM export including automatic hotspot creation

Complementary Add On Modules

ENHANCED - JT/PMI Module

Deep Exploration System Requirements

Minimum

- Windows 2000 SP4 operating system
- Pentium III 266 processor or higher
- 128MB of RAM (more for large model and texture sizes)
- Microsoft DirectX, version 8
- Internet Explorer 6.0
- Graphics card capable of displaying 24-bit color
- Pixel and vertex shader support on graphics card
- Shaders located in the Shaders folder
- 3D hardware accelerator video card

Recommended

- Windows XP operating system
- Pentium III 733 processor or higher
- 256MB of RAM (more for large model and texture sizes)
- Microsoft DirectX, version 9
- 3D hardware accelerator video card with 128MB of RAM

Additional

- An Internet connection is required for 3D Web searches and Cortex updates
- To view and save 3ds max files, a copy of 3ds max must be installed
- To view and save Maya, files a copy of Maya must be installed
- To load the ngrainview.x3d plugin, .NET must be installed
- To view 3D content in a HTML Document with 3D (.html) files, Deep Publish or Deep View must be installed
- The .rh file type must be added to the Microsoft Windows Server 2003 recognize file type set
- To view 3D content in a Shockwave Web Page (.html) file, Shockwave Player must be installed



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