ConnectPress Ltd.

2005 3D Viewers Roundup

Product Reference Guide

June 2005

As product development becomes increasingly more globalized, more and more players—both inside and outside of design engineering departments—are involved in the product development process. For organizations both large and small, 3D viewing technology is taking on more importance as it enables collaboration within and without the company by letting users view, markup, and print 3D CAD files without the originating CAD software. But how do you know which 3D viewing solution is best for your organization? With the goal of helping our community members address this question, we bring you the 3D Viewers Roundup.

The 2005 3D Viewers Roundup consists of feature articles contributed by industry experts and this Product Reference Guide, which lists specifications for products that provide a range of viewing, markup, and collaboration capabilities in CAD neutral and cross-CAD file formats.

See the associated articles under Community Features, "A Higher Level View of Enterprise Data Assets" and "Product Visualization across the Extended Enterprise." These articles provide differing perspectives on selecting and implementing 3D Viewer technologies for collaboration on product development throughout the organization and beyond.

The data herein was compiled using submissions from the listed companies. Note that it is not an exhaustive list of companies, nor does it include all the products of each company. However, we have attempted to include all the major software solutions.

ConnectPress Ltd. cannot guarantee the accuracy of this data; we suggest you contact specific companies for further information, particularly to confirm technical details regarding their products. Space does not permit us to list all file formats supported, nor all versions of 3D CAD supported. Please contact individual companies for more specifics.

All prices are in U.S. dollars except where otherwise noted.

Company	Actify Inc.	Adobe Systems
Product Name(s)	SpinFire Professional 2004v2	Adobe Acrobat 7.0 Professional
Import files from which 3D CAD applications? Other file formats?	Inventor; Mechanical Desktop; CATIA V4, V5; SolidWorks; I-DEAS Native; I-DEAS WEB; Parasolid; Pro/E Wildfire; Solid Edge; UGS NX; CADDS; Discreet 3D Studio; CGM; ACIS SAT; DWF; DWG; DXF; Direct Model (.JT); HPGL; IGES 3D; 2D; ISO G-Code; PRC; STEP; STL; VRML; VDA-FS; XVL; MICRO CADAM; TIFF	Acrobat 7.0 Professional recognizes U3D as a file format, allowing 3D objects, including CAD data, to be embedded in PDF files. Adobe uses software from Right Hemisphere for its viewing technology. Right Hemisphere's Deep Exploration conversion software can output U3D from all major CAD and DCC applications. For 2D file formats, can convert files to PDF from any software application that has the ability to print.
Maximum file size imported?	Essentially unlimited; dependent on system	No maximum file size for PDF files
Does it support 2D format for 3D files?	Yes	Yes – can set various 2D views
Uses CAD system's API to publish CAD files?	Varies; we select the best all around solution for each CAD format. This includes native CAD API's, third party libraries and our own developed code.	No
Outputs which 3D format(s)?	Actify's proprietary .3D file format allows easy and consistent access to original CAD design data.	N/A
Markup and editing of parts, assemblies in 3D?	Yes	General markup available but not within 3D environment.
Stand-alone application or is native software needed?	Yes; stand-alone application	Stand-alone application
Measuring capabilities?	Yes; in 2D and 3D	Yes; measurement tools are available for 2D.
Analysis capabilities? File conversion & clean-up? Batch processing?	Analysis capabilities? Yes File conversion, clean up? No. Batch processing? Yes; only available via "Actify Publisher" product	Analysis capabilities? No File Conversion? Not directly File clean-up? No Batch processing? No
Optimization capabilities?	Yes; optimized for size automatically.	No
Animation capabilities?	Yes; parts easily positioned in space and provide replayable animated transitions between saved scenes.	Yes, by using JavaScripts.
Full resolution document printing?	Yes; queries output device and offers resolutions up to maximum capability of the device.	Yes
Web publishing and/or Internet tools?	Yes; .3D format is web displayable format; Actify Server offers full web file sharing with security.	Yes. PDF files output can be published to the Web and viewed, interacted with and/or printed from within Web browsers using the free Adobe Reader.
Security or review process controls?	No; not a native capability at the file level. Access\permissions controllable via Actify Server.	Yes; there are extensive security and permissions features within Acrobat 7.0 Professional.
Change history?	Yes; time\date\user history	Yes; reviews of PDF documents can be tracked using A7 Professional (author, date, time, etc.)
Integrated with document management system(s)?	Yes; all integrations are custom deployments.	Yes; various document management companies use A7 Professional and support PDF for review and comment
Any other significant or unique features?	Create virtual prototypes by integrating 3D models from diff systems into single assembly; 3D data saved to compressed, secure format; Read & compress one time, not every time you want to see the data; Distribute with free reader for others to access; Non-CAD format protects IP	Large Format Support; layer management; assemble multiple project files from various applications into one PDF document; document organization control; search functionality; track reviews and consolidate comments from multiple users; support for digital signatures
Does product load on desktop? Client server? True thin client?	Desktop or client server	Acrobat 7.0 Professional loads on the desktop. Adobe also provides a variety of server solutions for document services
System requirements?	Minimum: Win 95/98, 2000/NT, ME, XP; Pentium 100 MHz; 128 MB RAM; OpenGL Graphics; 32k Colors	Windows: Pentium processor, Win 2000 with Service Pack 2, XP Professional or Home Edition, or XP Tablet PC Edition, MS Explorer 5.5, 128 MB RAM (256 MB recommended), 460 MB available hard-disk space; cache for optional installation files (recommended) requires addl 300 MB of available hard-disk space, 1,024x768 screen resolution. See website for Macintosh requirements.
Price?	SpinFire Professional 2004v2: $499; Importers: Range from $99 to $599; Actify Reader: Free	MSRP $449. The product is also available through Adobe's Open Options licensing programs.
Full-function evaluation copy?	Yes	Yes
Web Address	www.actify.com	www.adobe.com
Contact info	Lynne Saunders, Lsaunders@actify.com Europe: saleseurope@actify.com 415.227.3800 x1140	+1.408.536.6000 (corporate); +1.800.272.3623 (sales); United States: 800.272.3623, http://store.adobe.com/store/main.html For contact info outside of the US, visit the website

Company	Autodesk	Bluebeam Software, Inc.
Product Name(s)	Autodesk DWF Viewer 5	Bluebeam Pushbutton Plus v3.5.1
Import files from which 3D CAD applications? Other file formats?	3D DWF files published out of any of the Autodesk design applications: AutoCAD 2006, Inventor 9 and 10, VIZ 2006, 3ds max7.5, Map 3D 2006, Mechanical Desktop 2006. DWF files are often 1/20 the size of the original file, they are print-ready, secure, and retain the intelligence of the original model like object and mass properties. 3D DWF files published with Autodesk DWF Writer 3, including those from SolidWorks 2005, Pro/ENGINEER 2.0	SolidWorks, AutoCAD
Maximum file size imported?	N/A	No maximum
Does it support 2D format for 3D files?	Yes; the snapshot tool can be used to create a 2D view of the 3D model.	Yes
Uses CAD system's API to publish CAD files?	No	Yes
Outputs which 3D format(s)?	N/A (view and print only)	N/A
Markup and editing of parts, assemblies in 3D?	No markup tools	N/A
Stand-alone application or is native software needed? If so, which?	Stand-alone application	Bluebeam Pushbutton plus includes a multi-purpose printer driver as well as plug-ins to SolidWorks and AutoCAD
Measuring capabilities?	No	No
Analysis capabilities? File conversion & clean-up? Batch processing?	No for all	Analysis capabilities? No; Convert 10 formats (PDF, TIF, JPG, GIF, BMP, PSD, PNG, EMF. WMF, PCL); no clean-up; batch process to PDF, TIF, JIF, GIF (and 6 other formats)
Optimization capabilities?	Yes; file is optimized for sharing with product team. It's often 1/20 the size of DWG or Inventor files	Next version will include these features
Animation capabilities?	Yes. User can pan, zoom, and orbit; show/hide components; show transparent; isolate components; select wire frame and shaded views	N/A
Full resolution document printing?	Yes; files are print-ready, making it easy for anyone to print without worrying about x-refs, fonts, line weights, etc.	Yes
Web publishing and/or Internet tools?	Yes; DWF Viewer is built for sharing designs electronically. The small file size makes them easy to email or post on the web	N/A
Security or review process controls?	Yes; when the DWF files are published from Autodesk software products, password protection and encryption are added. DWF Viewer supports the same password protection used to open the file before viewing, printing, etc. DWF Composer does not have capabilities to add password protection before sending the marked up file out	Yes
Change history?	No	Next version will provide this
Integrated with document management system(s)?	3rd parties have also built applications that use the DWF file format, and by extension DWF Composer for review and markup.	Yes; server edition, which provides capability to integrate with a document management system.
Any other significant or unique features?	Access of design intelligence including object and mass properties from Autodesk Inventor files. See website for full list of features.	Tightly integrates with AutoCAD and SolidWorks, allowing users to batch convert from CAD applications, edit and affix text stamps, automatically bookmark multipage PDF files, centrally configure settings, read and manage file property date
Does product load on desktop? Client server? True thin client?	Software supported on Windows platforms	Desktop and server-based solutions
System requirements?	Microsoft Windows XP Professional or Home Edition, Windows 2000 SP2, Windows 98 SE; 96 MB RAM minimum (128 MB recommended) 800x600 VGA display or better; Microsoft Internet Explorer 5.5 or higher	Windows 2000, XP; AutoCAD: AutoCAD 2000, 2000i, 2002, 2004, 2005, 2006 (including MDT, ADT, LDT, etc.) AutoCAD LT (2002-2006), Inventor are supported through the Bluebeam PDF Printer; SolidWorks: SolidWorks 2004, 2005; Bluebeam PDF Printer works with all CAD and Windows apps
Price?	Free – download at www.autodesk.com/dwfviewer-download	Different pricing for AutoCAD and SolidWorks users: Prices for full professional solution start at $149; includes volume discounts for multiple seats
Full-function evaluation copy?	Download at www.autodesk.com/dwfviewer	Yes
Web address	www.autodesk.com/dwfviewer	www.bluebeam.com
Contact info	View at www.autodesk.com/dwfviewer	Cathy Kim, ckim@bluebeam.com; sales@bluebeam.com, 626.296.2149

Company	CADlook	Cimmetry Systems
Product Name(s)	**CADlook Viewer/Translator Version 8.0**	**AutoVue SolidModel Professional v18**
Import files from which 3D CAD applications? Other file formats?	Import: neutral formats including IGES, STEP, VDA, SAT and Parasolids; Export: to IGES, STEP, VDA, SAT, Parasolid, BMP, JPEG, VRML and STL	Multiple formats: Inventor, Mechanical Desktop, CATIA V5, V4 AutoCAD, HPGL, IGES, MicroStation, Pro/E Wildfire, Solid Edge, SolidWorks, UGS NX, 2D CAD, EDA, Office, PDF, raster, graphics. See website for complete list
Maximum file size imported?	No limits on file sizes. Depends on hardware.	No maximum
Does it support 2D format for 3D files?	Support IGES drawings.	Yes; see website for list of specific formats supported
Uses CAD system's API to publish CAD files?	No	AutoVue doesn't publish files - it provides viewing and markup functionality for 3D CAD files
Outputs which 3D format(s)?	See above	AutoVue can view and markup 3D files natively, but doesn't produce 3D files
Markup and editing of parts, assemblies in 3D?	Yes; markup. Can view/delete parts in assemblies; users can instantiate, copy parts in assemblies	AutoVue does provide markup functionality but does not edit parts and assemblies. Markups are performed on a separate layer and are saved as a different file, leaving your original document intact
Stand-alone application or is native software needed? If so, which?	Stand-alone application. Users do not have to have any other licenses	AutoVue doesn't require the native application to view and markup 3D files
Measuring capabilities?	Yes; measure & dimension angles/distances/radii, cross-section, measure curve lengths, calculate area/volume/centroid/moments of inertia	Yes
Analysis capabilities? File conversion & clean-up? Batch processing?	Analysis: see above; convert from all formats we import to any of formats we export; perform automated clean up or use stitching capability to stitch trimmed surfaces into solids; can batch translate from any of files we import to any of files we export	Analysis capabilities? Yes File Conversion? Yes File clean-up? No Batch processing? Yes
Optimization capabilities?	User can change color of any surfaces or objects	Yes
Animation capabilities?	No	Yes. Users can spin and rotate 3D models; transform model parts by defining increments of rotation or scaling; explode assemblies into its component parts, click and drag parts out of the way to access hidden areas of the assembly
Full resolution document printing?	We provide encapsulated postscript output.	Yes
Web publishing and/or Internet tools?	No	The Client-server edition permits user to view, markup and collaborate in real time documents from within their web browsers
Security or review process controls?	No	Yes
Change history?	No	AutoVue doesn't make changes to products, but the markup functionality does allow users to record engineering change requests with text, sticky notes, measurements, and more
Integrated with document management system(s)?	No	Yes. AutoVue integrates with several leading document management, PLM and ERP solutions
Any other significant or unique features?	[No answer provided]	AutoVue is unique in its ability to provide native viewing, printing, markup, digital mockup and real-time collaboration in one comprehensive software solution. Can also combine various native CAD formats in a digital mockup
Does product load on desktop? Client server? True thin client?	Only Windows	Available in both Desktop and Client-server editions
System requirements?	Windows 2000 and Windows XP. No other restrictions	Min: PC with Pentium CPU, 64 MB; Windows 95, 98, NT, 2000, 2003, ME, XP; 200 MB hard disk space; Explorer 4.0 higher. Netscape Navigator 4.5 or higher. See website for AutoVue Client-Server Editions
Price?	Price ranges from $299 for our Basic Viewer to $799 for our Advance Viewer/Translator	$1495 USD, single user license. Quantity discounts
Full-function evaluation copy?	Yes; A 15-day full functional evaluation copy can download from our website	Yes
Web address	www.cadlook.com	www.cimmetry.com
Contact info	Fan Chiang, fchiang@cadlook.com, 650.269.6531	Lisa Rennie, lisa_rennie@cimmetry.com or info@cimmetry.com; Tel: +1.514.735.3219 (International), 1.800.361.1904. Email: sales@cimmetry.com or on the web at www.cimmetry.com/contact_us.html

Company	Immersive Design, Inc.	Informative Graphics Corporation
Product Name(s)	**IPA v8.1**	**MYRIAD 7.0**
Import files from which 3D CAD applications? Other file formats?	SolidWorks, Solid Edge, Inventor, Pro/E & Wildfire	Many formats, including HPGL Plot File, 3DS, ACIS 3D, SAT, Anvil 5000 Preview, AXP, AutoCAD DWG, DXF, DWF, AutoRender, STL, , DX, Auto-trol Vector & Raster, DG, CADKEY, PRT, CAD Overlay, RLC, CALS Group IV , CAL, G4, GP4, MIL, CGM, EDCARS, EDC, EDMICS, EDM, Formtek Raster, FTK, GSA Navy DIF, DIF, GTX Group III, IV, G3, G4, GTX Runlength, RNL, HP CAD ME10 (through version 10), CMI, MI, HPGL Plot , PLT , IGC Stream File, ISF, Initial Graphics Exchange 2D and 3D (version 5.2), IGS, IGES, VDA, MicroStation Drawing DGN & Group IV, CIT& Runlength, RLE, Inventor 2D and 3D, IPT, IAM, IDW, ISO 8613/CALS, MYRIAD Symbol Library Format, MYRIAD Markup Format, OrCAD Design, DSN, PCX, PDF, Pro/Engineer Model, Neutral & Render, ASM, PRT, Pro/E Render, SLP, Raytheon G4 / Navy DIF, SolidWorks, Solid Edge, DFT, PAR, PSM, ASM, STEP, STL, VRML, multiple text and graphics formats. See website for complete list and versions.
Maximum file size imported?	[No answer provided]	[No answer provided]
Does it support 2D format for 3D files?	Yes	Yes
Uses CAD system's API to publish CAD files?	Yes	[No answer provided]
Outputs which 3D format(s)?	U3D, 3D PDF (with Acrobat), Immersive Design's .idasf	3DF, STL, 3DS
Markup and editing of parts, assemblies in 3D?	No; IPA does not allow for any geometry modification, which is a design engineering task	Yes
Stand-alone application or is native software needed? If so, which?	Varies	Stand-alone
Measuring capabilities?	Yes	Yes
Analysis capabilities? File conversion & clean-up? Batch processing?	[No answer provided]	Analysis capabilities? No File Conversion? Yes File clean-up? No Batch processing? No
Optimization capabilities?	Yes	Yes; colors
Animation capabilities?	Users have the ability to animate components, parts, sub-assemblies, lights, and camera. Animation includes position, orientation, and all attributes (color, transparency, textures, hyperlinks, custom properties)	No
Full resolution document printing?	Yes. With the generation of interactive 3D PDF files, users have interactive 3D and full-resolution printing	Yes
Web publishing and/or Internet tools?	Yes. IPA provides the capabilities to publish interactive 3D web pages and 3D PDF files, accessed locally, or via intranet, internet	Yes
Security or review process controls?	Yes	Yes
Change history?	[No answer provided]	Yes, for markups
Integrated with document management system(s)?	[No answer provided]	Documentum, Matrix One, Agile
Any other significant or unique features?	IPA tool imports a CAD model to which you can add animation & publish as a Web page (or PDF) that presents product information such as BOM, assembly sequences and disassembly instructions	Visual Rights™ persistent controls
Does product load on desktop? Client server? True thin client?	All	Windows, Windows Server
System requirements?	Windows 2000 or XP, 500mhz, 512Meg mem, 20 meg disk space, 3D card recommended	[No answer provided]
Price?	All viewing of published documents is free	$595.00 single seat copy
Full-function evaluation copy?	Yes	[No answer provided]
Web Address	www.immdesign.com	www.infograph.com
Contact info	Greg Smith, info@immdesign.com, 978.266.1800, sales@immdesign.com	Mary Orr, maryo@infograph.com, 602.567.5215

Company	Innovative PLM Solutions Ltd.	Kaon Interactive
Product Name(s)	DynaViewer Version 4	vSpace Master 2.0
Import files from which 3D CAD applications? Other file formats?	CATIA V4, V5; Unigraphics, UGS NX, Pro/E, and Wildfire, SolidWorks, Inventor, AutoCAD; IGES, STEP, VDA-FS, ACIS; HP-GL/2, VRML, TIF, JPEG, EMF, EPS, etc.	Reads VRML97 exported from many systems. Supports textures in JPEG, GIF, PNG, PSD, BMP, TIFF, TGA. Reads Alias Studio WIRE files directly (V.10, V.11, V.12)
Maximum file size imported?	200 MB	Limited only by host memory
Does it support 2D format for 3D files?	CATIA V4 2D	[No answer provided]
Uses CAD system's API to publish CAD files?	No	No
Outputs which 3D format(s)?	IGES, VRML, Images, optional CAD writers (see list above)	XMM (open interchange format, specified here)
Markup and editing of parts, assemblies in 3D?	Yes	Applications that support this can be built on the Meson viewer platform.
Stand-alone application or is native software needed? If so, which?	DynaViewer is a stand-alone product.	Stand-alone application
Measuring capabilities?	Yes	Applications like this can be built on the Meson viewer platform; default UI has distance measuring
Analysis capabilities? File conversion & clean-up? Batch processing?	Analysis capabilities? Not yet, but planned. File Conversion? Optional File clean-up? Auto healing function support Batch processing? Yes, Client/server	Analysis capabilities? No File Conversion? VRML97 and WIRE to XMM. File clean-up? Mesh decimation, hierarchy repair, animation. Batch processing? No
Optimization capabilities?	It is possible to modify colors and lighting.	Yes, material and lighting editing are a primary function of vSpace Master
Animation capabilities?	Assembly/disassembly, move, rotate components	Yes, including building complex scripts of reusable animations, and modeling system behavior an interdependencies
Full resolution document printing?	Support print/plot with full resolution/ B&W, etc.	A related product, vSpace Server offers this capability, both for high-resolution Stills and Video
Web publishing and/or Internet tools?	ActiveX Web version and collaboration module	Yes, with no plug-in and the best compression in the industry
Security or review process controls?	PDM-integrated permissions control	No
Change history?	Not yet	Flexible RDF format for tracking any metadata the user desires, including change history
Integrated with document management system(s)?	Yes; via API to commercial document management system. Integrated with PLM solution DynaPDM.	No
Any other significant or unique features?		No-plug-in; Java 1.1 based viewer. Best overall compression in the industry. Support for extremely high resolution textures. Designed to meet the requirements of sales & marketing organizations (Dell, Sony, Ricoh, and Cisco all use our technology on their web sites). Sophisticated GUI-based behavior. Scripting capability. Fully programmable viewer to create any web UI needed. Works with vSpace Server to allow sales & marketing organizations to make their own stills and videos from 3D content. Can be used together with Flash to create rich Flash+3D applications
Does product load on desktop? Client server? True thin client?	Load on Desktop. We also support Client/Server.	vSpace Master is desktop software vSpace Server is client/server software; client is Java 1.1 applet in a web browser Meson Viewer Platform is a Java applet that runs in end-user's web browser
System requirements?	Window NT/98/2000/XP, Pentium 3 Higher, 256 MB Higher, disk 250 MB (Collaboration Modules : Network All bandwidth), 3D Graphic Card : Graphic Memory 32MB Higher	Windows 2000 or later; Mac OS X 10.3 or later Viewer applet runs on almost every O/S, browser
Price?	Base server + CAD translator; Base client + CAD viewer; or by license type (fixed/concurrent)	vSpace Master: $1,550 Related product pricing, please see: www.kaon.com/software/swpricing.html
Full-function evaluation copy?	Yes	Yes, 90 days free evaluation period with full function and no use restrictions.
Web Address	www.inops.co.kr, www.dynaviewer.com	www.kaon.com
Contact info	Worldwide Sales & Marketing: JoonHo Kim Europe: Rainer Sieber; jhkim@inops.co.kr; rainer.sieber@dynaviewer.com Kim: +82.11.9010.9360 cell; +82.2.980.8902 tel; Sieber: +49.1637.941266 cell; +49.2302.941266 tel	Joshua Smith, jesmith@kaon.com, vspace@kaon.com; 978.823.0111 x 111

Company	Kubotek USA Inc.	Lattice3D
Product Name(s)	Kubotek Spectrum 4.0.4	**XVL Player**: Viewer/Animation Playback; **XVL Player Pro**: adds sectioning/measurement; **XVL Studio**: animation creation, process automation, model combination/assembly editing; **XVL Signer**: **XVL file encryption**; **Embed**: embeds 3D in Office docs; **Composer**: create 3D-aware documents; **Publisher**: automatic creation of 3D-aware web pages; **XVL Converters**; versions 3-7
Import files from which 3D CAD applications? Other file formats?	Pro/E, Pro/E Wildfire, CATIA V4, UGS NX, Kubotek Keycreator, Inventor, SolidWorks, ACIS SAT 1.5-14, Parasolid XT, STEP, IGES, STL, Unigraphics, DWG/DXF; CADKEY, HPGL/2 Export, HOOPS Metafile (HMF) export, HOOPS STREAM FILE (HSF) EXPORT, WMF export	All significantly adopted CAD systems; see www.lattice3d.com/solutions_cad_3d_image.html plus SVG, ParaSolid, IGES, VRML, OBJ, STL, DXF, 3DS, PDF
Maximum file size imported?	No limit	CAD models in excess of 60 GB
Does it support 2D format for 3D files?	Support of associative drawing layout mode for CADKEY and Keycreator only	Yes; e.g., 2D exploded part diagrams as SVG files
Uses CAD system's API to publish CAD files?	No	No; CAD files are converted to XVL using CAD system APIs then published via Lattice3D applications without use of CAD system.
Outputs which 3D format(s)?	HOOPS Metafile (HMF), HOOPS STREAM FILE (HSF)	XVL
Markup and editing of parts, assemblies in 3D?	Requires markup in exported TIFF/BMP format only using separate picture editing software such as Windows Paint (included with Windows)	Yes; XVL Studio, Embed, Composer, Publisher enable extensive markup, editing and publishing.
Stand-alone application or is native software needed? If so, which?	Product is stand-alone	XVL player is stand-alone or automatically integrated. XVL Converters require native CAD license as Plug-in or Server Converter. Lattice products avail. as stand-alone or shared licenses
Measuring capabilities?	Yes; all the above plus area and volume	Yes; in XVL Player Pro, Studio, Embed, Composer
Analysis capabilities? File conversion & clean-up? Batch processing?	Analysis capabilities? No File Conversion? No File clean-up? Limited automatic clean-up Batch processing? No	Yes to all; XVL Converters do file conversion, clean-up; XVL Converter Server, XVL Signer, XVL Filter, Embed, Publisher offers batch processing
Optimization capabilities?	No editing supported	Yes; in XVL Studio and Publisher
Animation capabilities?	No animation or moving of components supported	Yes; in XVL Studio and Publisher
Full resolution document printing?	Yes	Yes
Web publishing and/or Internet tools?	Yes; HTML output with embedded hsf	Yes
Security or review process controls?	Files can not be saved so product is always view only	Yes; XVL Signer
Change history?	No changes allowed	No; we integrate with CAD & PLM systems
Integrated with document management system(s)?	No integrations	Yes; e.g. Smarteam, WebSphere Product Center
Any other significant or unique features?	Customizable printer configurations, keyboard short-cuts and toolbars, multiple viewports.	Comprehensive 3D publishing platform; best available compression with high fidelity graphics; Ability to vary accuracy of the model – very useful for 'dumbing-down' a model; Ability to re-tessellate on zoom to obtain detail at the single part level; XVL is a minimum NURBS mathematical model rather than polygons saved at some particular level of tessellation; Full camera control, color mapping, selectable element displays with annotations, surface processing controls with tessellation, scriptable via JavaScript and VBScript, graphics acceleration support, browser and Office support as an ActiveX control
Does product load on desktop? Client server? True thin client?	Windows desktop application; no internet capabilities	Yes – free XVL Player is a thick client (~5MB download)
System requirements?	Windows XP or 2000 sp2, 115 MB hard drive; 1024 x 768 resolution (minimum); power user or higher permission level required	Windows 2000 with SP2 or later, or Windows XP. Recommend: Pentium III or higher, 512 RAM, 100 MB hard disk space
Price?	No charge; download only	Free Player; 3D publishing solutions from $3K
Full-function evaluation copy?	Full product is no charge	XVL Player: free download; multiple 3D publishing evaluation demos on website or contact company
Web Address	www.kubotekusa.com	www.lattice3d.com
Contact info	Gloria Martel, sales@kubotekusa.com, 508.229.2020	Charlene Rose, info@lattice3d.com, 866.623.0890 toll-free; USA, 650.623.0890

Company	Okino Computer Graphics, Inc.	PTC
Product Name(s)	PolyTrans & NuGraf v4.2	ProductView 8.0
Import files from which 3D CAD applications? Other file formats?	AutoCAD, Inventor, Pro/E Wildfire, Solid Edge, SolidWorks, CATIA, MicroStation (Parasolids), UG; other CAD programs via: ACIS SAT, IGES, Parasolids, STEP, VDA-FS, XGL, U3D. Many 3D Import file formats, including Apple 3D Metafile, 3D Studio MAX, Illustrator, Biovision BVH, DirectX, DXF/DWG, Lightwave, Maya, Okino native BDF, OpenFlight, OpenNURBS, Protein Database (PDB), native encrypted, Rhino-3D/OpenNURBS, U3D, USGS DEM & Gtopo-30, VistaPro, VRML, Wavefront. Granite v3 import converters: ACIS SAT, IGES, native Pro/E, Pro/Desktop, VDA	Pro/ENGINEER, Pro/ENGINEER Wildfire, CADDS5, CATIA V4, CATIA V5, I-DEAS, SolidWorks, UGS, MicroStation AutoCAD, Cadence, Mentor, Accell, PADS, PCAD, VeriBest, Zuken, Gerber, IGES, VRML, STL, JT, DXF, DWG, PDF, MS Office applications and graphic formats such as HPGL, TIFF, JPEG and GIF
Maximum file size imported?	Memory limiting. Usually about 200-300 MB BREP CAD solids file.	Up to 2Gigabytes
Does it support 2D format for 3D files?	3D only, although we convert 2D DXF to 3D DXF	[No answer provided]
Uses CAD system's API to publish CAD files?	No	Yes
Outputs which 3D format(s)?	Many formats. See website for complete list.	VRML, IGES, STL
Markup and editing of parts, assemblies in 3D?	No	Yes
Stand-alone application or is native software needed? If so, which?	Stand-alone	Stand-alone
Measuring capabilities?	No. Data conversion only, with viewing.	Yes
Analysis capabilities? File conversion & clean-up? Batch processing?	Analysis capabilities? No File Conversion? Yes. Industry standard since 1988 for conversion File clean-up, batch processing? Yes	Analysis capabilities? Distance, angles, lengths, sectioning, mass properties, sweep volumes, interference checking. Measurements use underlying accurate Boundary Representation ("B-REP"). File conversion? Yes – for certain formats – in interactive mode File clean-up? No. Batch processing? Batch printing
Optimization capabilities?	Yes	Yes
Animation capabilities?	Yes	Yes
Full resolution document printing?	No	Yes
Web publishing and/or Internet tools?	Web publishing, yes	Yes
Security or review process controls?	No	Provides ITAR-like copyright warning message capabilities
Change history?	No	That is a function of the PLM system.
Integrated with document management system(s)?	No	Windchill PDMLink
Any other significant or unique features?	Native plug-in versions for Maya (PolyTrans-for-Maya) and 3ds max (PolyTrans-for-MAX). Extensible via import, export and "system-level" plug-ins: A 17-year development of import/export and system level plug-ins with accompanying SDK and documentation. Our plug-in system and SDK is on par with that of 3ds max but is more specialized for rendering and accurate 3D data conversion. The core NuGraf API is over 14 years old and can cross convert and retain almost all 3D data types. Our "UI API" allows complete, customizable docked user interfaces, including toolbars, trays, roll-up windows and full API access for third parties to write custom plug-in modules. Plug-In Systems: one of the better lens flare systems in an embedded rendering package	Powerful sectioning capability, placement, alignment and interference detection, support for drawing-less environment, PDF collaboration module, module for digital mockup studies on heterogeneous MCAD models, option for the creation and deployment of interactive assembly, disassembly and maintenance sequences, creating kinematic linkages, real-time collaboration
Does product load on desktop? Client server? True thin client?	Desktop	Thick and thin clients available
System requirements?	128 MB+; Windows 98, XP, 2000, 2003 and NT. NVIDIA or ATI accelerated video card optional.	Windows 2000, HP-UX, AIX, Solaris with any OpenGL compliant graphics hardware
Price?	$395 base price, PolyTrans $495 base price, NuGraf Add-on modules priced US$245 to US$395. See website for these and multiple pack options	Contact PTC for pricing information
Full-function evaluation copy?	Yes	No
Web Address	www.okino.com	www.ptc.com
Contact name	Robert Lansdale, lansd@okino.com; sales@okino.com; 905.672.9328; 888.336.5466	Sales: PTC Corporate website: www.ptc.com, Phone 781.370.5000

Company	Rasterex Software a.s	Right Hemisphere
Product Name(s)	**RxView, RxHighlight, RxViewX, RxHighX, RxViewServer, Version 7.1**	**Deep Exploration (& associated modules), v3.5**
Import files from which 3D CAD applications? Other file formats?	Inventor, SolidWorks, SolidEdge, IGES, STEP, Pro/ENGINEER, Wildfire, CATIA V4, V5, ACIS_SAT, CIMAG, OneSpace Drafting Designer; See website for complete list of file formats supported. 2D Vector; 3D Vector	More than 128: CATIA, MicroStation, Pro/E, Pro/DESKTOP, Solid Edge, SolidWorks, UGS NX; AutoCAD, ACIS, STEP, CoreCAD, CADKEY, gPlug Module, Granite, IGES, IronCAD, JT Open, Neutral Part File, Parasolid, others; plus 3D & 2D files, raster, vector, audio, motion picture formats. See website for complete list and versions.
Maximum file size imported?	No maximum; only restrictions are practical limits set by hardware.	Up to the maximum system memory.
Does it support 2D format for 3D files?	Yes. See website for complete list	Yes
Uses CAD system's API to publish CAD files?	No	No; it does not publish native CAD files.
Outputs which 3D format(s)?	No 3D output supported.	Multiple formats. See website for complete list
Markup and editing of parts, assemblies in 3D?	Yes	With the CADTools module, markups and callouts can be added.
Stand-alone application or is native software needed? If so, which?	Stand-alone application. Native Software not required	Stand-alone
Measuring capabilities?	Yes. Distance only in 3D	In next release (2005)
Analysis capabilities? File conversion & clean-up? Batch processing?	Analysis capabilities? No File conversion? Yes File clean-up? No Batch processing? Yes	Analysis capabilities? No File Conversion, clean-up? Yes Batch processing? Yes to a limited extent
Optimization capabilities?	Yes; 3D color and lighting supported	Yes. All aspects, except editing geometry directly
Animation capabilities?	Yes; 3D spin supported	Yes. Editing and translation, scale, and rotation animation capabilities
Full resolution document printing?	Yes	Yes. In postscript, PDF, HTML, vector formats, raster renders
Web publishing and/or Internet tools?	Yes; only in combination with RxViewServer	Yes; Deep Exploration has HTML and PDF document generation
Security or review process controls?	Yes	No; We do not have internal security except as supported by individual file formats.
Change history?	Yes, markup change history supported	No
Integrated with document management system(s)?	Many OEM Accounts; Rasterex Document Management product, RxIndex, R5	No, but Deep Server integrates into most enterprise level document management systems.
Any other significant or unique features?	See website for full list of features.	Deep Exploration and associated portfolio modules allow users to transform and author high impact, 2D and 3D graphics directly from over 128 different 2D and 3D formats, including all mainstream CAD applications. Right Hemisphere technologies produce lightweight models by allowing flexible polygon reduction levels, healing, normals adjustment and patented lighting technology. Users can easily create high quality line art and shaded illustrations, texture, detailed animation and automatic explosion of parts and assemblies. These graphics can be easily converted to dozens of supported 2D and 3D formats for authoring and/or rendering. See website for addl details
Does product load on desktop? Client server? True thin client?	Yes; all platforms supported, depending on specific product	Desktop
System requirements?	Standard Windows PC is only requirement	Minimum: Windows 200 SP4, Pentium III 266 or higher, 128 MB RAM, MicroSoft DirectX version 8, Graphics Card 24 bit color, Pixel and vertex shader support graphics card, Shaders in shaders folder, 3D hardware acc. video card. Recommended: Windows XP SP2, Pentium III 733 or higher, 256 MB RAM, Microsoft DirectX version 9, 3D hardware acc. video card with 128 MB RAM Solids: 2 GB RAM+2 GB page file, Athlon 6 or Pentium IV 3GHz or higher, QuadroFX or FireGL graphics card with 128 MB VRAM
Price?	RxView - Complete: Pricing is per license – $595 to $198 depending on qty and licensing type RxView-CAD, Pricing is per license – $297 to $99 depending on qty and licensing type RxView - OFFICE: Pricing is per license – $297 to $99 depending on qty and licensing type 3D Formats: Basic 3D formats included with Complete versions of each product. See website for pricing for RX Highlight and further details on pricing	Deep Exploration - $149 Illustration Module - $595 CADTools - $495 CAD Modules: CATIA V4, V5 or Unigraphics: $1,995; CORECAD $595; Granite $995; JT $995; I-DEAS $995
Full-function evaluation copy?	Yes	Yes; 30 day free trial. See website
Web address	www.rasterex.com	www.righthemisphere.com
Contact info	GeirAge Nysveen , gan@rasterex.com; for distributors see www.cadaus.com +47.22910092 Europe; 281.340.7515 USA	Billy Maertz billy.maertz@righthemisphere.com 510.818.2880

Company	SolidWorks Corp.	Solid Concepts Inc
Product Name(s)	eDrawings, Version 2006	SolidView/Lite, SolidView, SolidView/Pro 2004.3
Import files from which 3D CAD applications? Other file formats?	SolidWorks, Inventor, Pro/ENGINEER, CATIA UGS, CoCreate's OneSpace Designer 13.01 View native SolidWorks files from SolidWorks 98 View native DWG/ DXF files from AutoCAD R14 Export eDrawings format, ZIP, HTML, EXE, BMP, TIF, JPG and STL. See website for full list and versions.	SolidView/Pro 2D Vector formats: DXF, DWG, CGM, HP GL, WMF, EMF SolidView/Lite: Object File SolidView/Pro supports the following 2D Raster formats: TIFF, GIF, FAX, JPG, PCT, PNG, RAS, TGA, BMP, PCX
Maximum file size imported?	No limit	No fixed maximum file size; depends on hardware.
Does it support 2D format for 3D files?	Yes	Yes; for AutoCAD, SolidWorks and SolidEdge.
Uses CAD system's API to publish CAD files?	Yes	No
Outputs which 3D format(s)?	Yes; the eDrawings format includes 3D	STL, Obj, VRML and DXF
Markup and editing of parts, assemblies in 3D?	Yes; the markup capabilities work on parts and assemblies.	Yes
Stand-alone application or is native software needed? If so, which?	In order to publish the CAD file you need the CAD application, after that the recipient doesn't need to have anything on his machine, not even the application – he can send the file as an executable that includes the file and the application	No CAD licenses are required.
Measuring capabilities?	Yes	Yes; SolidView has extensive feature recognition and measurement capability
Analysis capabilities? File conversion & clean-up? Batch processing?	Yes; eDrawings allows you to view design analysis results created from COSMOSWorks or COSMOSXpress software and to review output produced from MoldFlow and MoldflowXpress that is used for quickly and easily testing the manufacturability of plastic injection-molded parts	Analysis capabilities? No File conversion? Only to STL File clean-up? A special RP version is available for STL repair. Batch processing? Yes, as an option to SolidView/Pro
Optimization capabilities?	No. This is a read only view – we do not let the recipient change the file from its origin	Yes
Animation capabilities?	Yes; and also automatic animation between views	Yes
Full resolution document printing?	Yes	Yes
Web publishing and/or Internet tools?	You can embed eDrawings within any HTML file	Files can be published to HTML
Security or review process controls?	Yes	Yes
Change history?	Yes	Yes
Integrated with document management system(s)?	Yes	No
Any other significant or unique features?	Built in viewer. Allows user to send .EXE that includes the file and the application. Embed the 3D information into the 2D drawings (unique only to eDrawings!) Once the publisher has the eDrawings Professional license all his recipients can markup, measure, and conduct advanced professional activities – eDrawings saves it automatically. Also, Drawing layouts, Hyperlinking, 3D Pointer, View Design Analysis capabilities. See website for further details	SolidView/Pro lets users embed 3D data + SolidView/Lite viewer into one file
Does product load on desktop? Client server? True thin client?	No (an active X is needed for web browser)	SolidView runs on the desktop
System requirements?	Microsoft Windows XP Professional, Windows 2000, Windows NT 4.0 with Service Pack 6 or later, Windows Me, Windows 98 2nd Edition. Or Mac OS X Panther (10.3) and above	Any system capable of running Windows 98 and up will support SolidView format, etc.)
Price?	eDrawings is a free product – the publishers as well as the viewer. eDrawings Professional, which allows publishers to provide their recipients advanced collaboration capabilities such as markup, measurement, cross section, etc. , costs $995. eDrawings Professional is part of SolidWorks Office Professional and SolidWorks Office Premium	Product, Standalone license , Network license SolidView/Lite, FREE, N/A SolidView, $99, N/A SolidView/Pro, $495, $995 SolidView/Pro RP, $1,495 , $2,995 ACIS/SAT Interface, $295, $595 Bridgeworks Interface, $1,995, $3,995 CATIA Interface, $795, $1,595 I-Deas Web Access (MCA/IDI) Interface, $195, $395 IGES/VDA Interface, $495, $995 Parasolid, $295, $595 SolidWorks Geometry Interface, $295, $595 Pro/E Granite One Interface, $595, $1,195 SolidEdge Interface, $295, $595 Step Granite One Interface, $495, $995 Unigraphics Interface, $495, $995 Batch Conveter, $5,000, $5,000 Directory Watch Server, $10,000, $10,000
Full-function evaluation copy?	Yes	Yes
Web Address	www.solidworks.com, or www.edrawingsviewer.com	www.solidconcepts.com, www.solidview.com
Contact info	SolidWorks Inside Sales Dept Efrat Ravid, eravid@solidworks.com +1.800.693.9000 or +1.978.371.5000	Tom Vorgitch tvorgitch@solidconcepts.com 661.257.9300 or 888.SOLIDVU

Company	Spicer Corporation	UGS Corporation
Product Name(s)	Imagenation 7.6, ViewCafé 3.3; toolkit Image a*X	JT2Go 5.1
Import files from which 3D CAD applications? Other file formats?	Our products do not import files from 3D CAD applications. Imagenation and ViewCafé support over 250 different files types, ranging from the MS Office productivity suite & PDF to 2D CAD, 3D CAD/CAM, and graphics	Supports all major CAD systems via the neutral JT format (all versions). Other file formats: CGM, TIF
Maximum file size imported?	Limited to the operating system	Limited only by hardware
Does it support 2D format for 3D files?	Support for all the most popular 2D and 3D file formats	No
Uses CAD system's API to publish CAD files?	No. Imagenation and ViewCafé are viewer types of applications.	N/A; JT2Go does not do translations.
Outputs which 3D format(s)?	3D export or write capabilities do not exist, but 3D to raster, 2D to raster, 2D to 2D vector or raster to raster capabilities do exist for all supported formats.	N/A
Markup and editing of parts, assemblies in 3D?	Yes. Text and Dimension Markup capabilities exist.	No
Stand-alone application or is native software needed? If so, which?	Imagenation and ViewCafé are independent view, view markup applications; Do not require native design or authoring software to be installed.	N/A
Measuring capabilities?	Yes	Yes
Analysis capabilities? File conversion & clean-up? Batch processing?	Analysis capabilities? Yes File conversion? Yes File clean-up? Add/Delete vector entities, Extract Text for archival purposes and searching, For Raster images or scanned images - Resize, Crop, Deskew, Despeckle, Rotate, Mirror, Negate. Batch processing? Yes	Analysis capabilities? No File conversion? No File clean-up? No Batch processing? No
Optimization capabilities?	Yes; both 2D and 3D optimizations exist.	No
Animation capabilities?	Yes. Users can move, explode, transform, pick, hide, rotate parts or components of assemblies	No
Full resolution document printing?	Yes; provide user with an extensive list of variables and functions	Yes
Web publishing and/or Internet tools?	Yes; ViewCafe. Our thin web-client (applet) or application provides both publishing and real time collaboration	No
Security or review process controls?	Extensive API's allow DMS/PDM administrators or integrator to set permissions for view, markup & edit by user and/or document type	No
Change history?	No	No
Integrated with document management system(s)?	Yes; many systems. See website for complete list.	No
Any other significant or unique features?	Extensive Print functionality; Extensive Active X, Java and C API's; progressively load raster files (including raster encapsulated PDF) up to 4 GB in size in less than 50 Mbytes of RAM; Markup interoperability Office & large format capture interface – scanning. Document Redaction capabilities to ensure compliance with US & International standards. See website for more.	No
Does product load on desktop? Client server? True thin client?	Imagenation: full client desktop application, which can also be used in a client server or strictly server environment. ViewCafé: true thin client server application	Yes No No
System requirements?	Imagenation: Windows 2000, Windows XP, Windows 2003 Server; Pentium processor or better; 128 MB RAM; CD-ROM drive; 45 MB or more free disk or network space; mouse, track ball, or touch screen; SVGA monitor. ViewCafé, Client (recommended): Browser: Microsoft Internet Explorer 4.0 or later; Netscape Navigator 4.5 or later. Processor: Pentium 200 MHz or better. Windows 95, 98, ME, 2000, NT 4.0, XP, Sun Solaris, HP-UX, Linux; hard Drive: 5 MB free disk space. RAM: 64 MB or more (128 MB recommended). Software: Java 2 Version 1.3, or better; Java 3D (for Open GL), Version 1.2.1_02, or better; Open GL Version 1.1 or better. Video Card: open GL accelerated video card with most recent driver recommended. Server (recommended): Windows NT 4.0, 2000, XP. Processor: Pentium III. Hard Drive: 20 MB for installation, 50 MB or more for temporary files. RAM: 256 MB or more	Windows NT 4.0 Service Pack 6a , Windows 2000, Service Pack 3; Windows XP Pro Service Pack 1. Required Web browsers: IE 5.5 SP2 or IE 6.0 SP1 Minimum System: For 3D models, 128 MB of RAM, 24-bit color video card with hardware Z-buffer. For 2D images, video card capable of displaying 16-bit graphics or higher is required. Recommended System: For 3D models and 2D images, your system should have a 1 GHz processor or equivalent, 512 MB RAM, a video card with 32 MB of VRAM and hardware Z-buffering, and 1 GB of virtual memory.
Price?	Imagenation and ViewCafé are available in different configurations, with price and feature points to match. Please contact Spicer for detailed pricing information	Free
Full-function evaluation copy?	Yes	Yes
Web Address	www.spicer.com	www.UGS.com
Contact info	Jim Eardly, jeardly@spicer.com or sales@spicer.com, 1.519.748.2462. Sales: Ray Moric, International Sales Manager, 01.519.748.2462 ext. 8319, RMoric@spicer.com	Stu Johnson, stu.johnson@ugs.com, 734.452.2507; Europe - +44.1276.705151, Asia Pacific – 852.2230.3333

Company	UGS Corporation	Web4, a division of netGuru, Inc.
Product Name(s)	Teamcenter Visualization 6.0	eReview 5.0
Import files from which 3D CAD applications? Other file formats?	Supports all major CAD systems via neutral JT format (NX, Ideas NX Series, Solid Edge, CADDS, AutoCAD, Inventor, Pro/E, CATIA V4 & V5, and SolidWorks), VRML, STL; PLM XML, CGM, TIF, IGES, STEP, DXF, DWG, PDF, HPGL, GIF, BMP, DWF (6.0)	Autodesk Inventor, IGES, Pro/E, CATIA, Solid Edge, SolidWorks, SAT 3D, STL 3D, VDA-FS 3D, VRML 3D, STEP AP 203 3D, Unigraphics, Parasolid, I-DEAS; plus 2D, ECAD, word processor, spreadsheet, raster, bitmap, and vector formats (some require optional components). See website for complete list
Maximum file size imported?	Limited only by hardware	3GB (2D) and 100MB (3D)
Does it support 2D format for 3D files?	Yes; supported 2D outputs are .tif, .png. .bmp, .jpg, .ps, .html	Yes
Uses CAD system's API to publish CAD files?	N/A, application does not do translations. Translators are available that use the native applications APIs	No, a proprietary viewing engine of eReview. Allows viewing of such files. In some cases, the APIs of CAD system may also be used to support more formats.
Outputs which 3D format(s)?	JT, VRML, PLM XML	Proprietary format that is read by eReview.
Markup and editing of parts, assemblies in 3D?	Yes; collaborative markup with authentication & management for different users	Yes; a very extensive list of markups is available
Stand-alone application or is native software needed? If so, which?	Some available translators require a CAD license. CATIA V4, Pro/ENGINEER, AutoCAD, SolidWorks	Stand-alone. The customer does not need any license of the native application.
Measuring capabilities?	Yes	Yes
Analysis capabilities? File conversion & clean-up? Batch processing?	Analysis capabilities? Clearance and Interference, CAE Results viewing. File conversion? Yes, export to JT or VRML. File clean-up? Product structure editing. Batch processing? Yes	Analysis capabilities? Yes File conversion? Yes File clean-up? No Batch processing? Yes
Optimization capabilities?	Yes	Yes
Animation capabilities?	Yes	Yes
Full resolution document printing?	Yes	Yes
Web publishing and/or Internet tools?	Yes	Yes
Security or review process controls?	Yes, when combined with Teamcenter PDM products	Yes; various
Change history?	Yes, when combined with Teamcenter PDM	Yes
Integrated with document management system(s)?	Yes; Teamcenter Engineering, Teamcenter Enterprise, Teamcenter Community, SAP, MatrixOne, plus customer integration capabilities	Oracle Collaboration Suite, Oracle Files, eMatrix (all VCP apps), FileNet P8, FileNet TCM, Primavera Expedition 10, OpenText LiveLink, Documentum WebTop, Xerox DocuShare, Agile, to name a few
Any other significant or unique features?	Teamcenter Visualization supports the largest assembly sizes of any product on the market. Built-in capabilities for performance tuning allow flexible usage on virtually any computer. JT format uniquely supports both facetted (triangles) for high-performance visualization and BREP (Boundary Rep Surfaces) for measurements as precise as the native CAD system. Uniquely supports the viewing of CAE results as well as intelligent PMI	Synchronous and asynchronous collaboration is part of the product suite. Apart from stand-alone viewing of 450 formats natively, eReview provides an easy way to review documents within a team (both synchronously as well asynchronously). More information at www.ereviewonline.com
Does product load on desktop? Client server? True thin client?	Yes No Yes, iSeries deployment is a thin client	A True thin client, web-based, server-centric software. Zero-administration and zero-signature. Accessible through a web browser from the client machines.
System requirements?	Windows 2000 Service Pack 4, Windows XP Pro Service Pack 2 , HP-UX 11.0 and 11.11 (32-bit and 64-bit), IBM AIX 5.1 and 5.2 (32-bit only), SGI IRIX 6.5.22 and subsequent 6.5.x level patches (32-bit and 64-bit) Sun Solaris 8 and 9 (32-bit and 64-bit). Minimum system: For 3D models, 128 MB RAM, 24-bit color video card with hardware Z-buffer and OpenGL support. For 2D images, a video card capable of displaying 16-bit graphics or higher is required. Most lower-end graphics cards will work with the most current graphics driver. Minimum recommended system: For 3D models and 2D images, 1 GHz processor or equivalent, 512 MB RAM, a video card with 32 MB VRAM, hardware Z-buffering, OpenGL support, and 1 GB of virtual memory	Platform agnostic solution that is supported on WIN, LINUX, UNIX, SOLARIS, MAC. No restrictions on the disk-space or RAM. For details, visit www.ereviewonline.com
Price?	Various prices for service levels, Global currency differences preclude inclusion of prices. Contact a sales rep or call 800.498.5351	Different licensing models: Site license, named users, true concurrent users or a mix. Product is completely modular; Pricing depends on the type of licenses and type of module
Full-function evaluation copy?	Yes	Yes
Web Address	www.UGS.com	www.ereviewonline.com
Contact info	Stu Johnson, stu.johnson@ugs.com, 734.452.2507; Europe - +44.1276.705151, Asia Pacific – 852.2230.3333	Aman Bhullar, Senior Product Engineer, Web4, a division of netGuru, Inc., abhullar@web4inc.com, 714.974.2500 ext: 320