

**Applications**

**Visual Simulation**

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## AAMP™

Lucinda Lock-Pant  
Marketing Coordinator  
Computer Design, Inc.  
2880 East Beltline N.E.  
Grand Rapids, MI 49505  
USA  
**616-361-1139**  
**616-361-5679 (fax)**  
**<http://www.techexchange.com/tek guru/vars/cdi.html>**

AAMP™, a new technology that streamlines the production of apparel, eliminates the development and production time involved in textile pipelines, and creates true computer-integrated manufacturing. With AAMP™ you can design cut-and-sew fashion apparel from any location in the world; you can electronically communicate the design and its approval to locations throughout the world; and you can manufacture high-quality fashions in plants throughout the world.

IRIX version compatibility: 5.3

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## ACSL Vision

Dan Cui  
VP, Sales  
Mitchell & Gauthier  
Associates (MGA Software)  
200 Baker Avenue  
Concord, MA 01742  
USA  
**508-369-5115**  
**508-369-0013 (fax)**  
**[dancui@mga.com](mailto:dancui@mga.com)**  
**<http://www.mga.com>**

ACSL Vision is a visualization and animation software package. Linked to ACSL (Advanced Continuous Simulation Language), ACSL Vision can animate the dynamic interactions of complex systems in many industrial applications such as aerospace, automotive, industrial process instrumentation display, and more. With ACSL Vision, the most complex simulation results can be easily reduced to a meaningful animation for visual insight. ACSL Vision consists of three major features. The first is an animator for depicting the operation of objects such as robotic arms, automobile chassis, manufacturing equipment, aircraft fly-by-wire control system, etc. The second is a graphics and meters toolkit which allows the representation of data in the form of pie charts, instrument arrays, and control panels. And the third is a full set of input objects such as sliders, dials, and buttons providing direct manipulation of the animation and the data. With ACSL Vision, multiple data streams can be integrated into a single, dynamic picture.

IRIX version compatibility:

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## ACTRIS©

Jean Marc Chautru  
Product Manager  
Institut Francais du Petrole  
232 av Napoleon Bonaparte  
Rueil Malmaison, 92502  
France  
**011-33-1-47-08-82-32**  
**011-33-1-47-08-41-85 (fax)**

ACTRIS© is a full-featured, 3-D visualization and animation software package dedicated to reservoir simulators. ACTRIS can display multiple cross-sections, crossed surfaces in any direction, cells with applied cutoffs and well-to-well folded sections. ACTRIS handles usual geometries, including the corner-point geometry. With its animation facility, ACTRIS can also display simulated fluid flow. The program was designed for reservoir engineers and geoscientists and requires a Silicon Graphics workstation.

IRIX version compatibility:

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## AMADEUS®

Ilija Kovacevic  
Kovac Software  
30 St. Marys Road  
Little Haywood  
Staffs, ST18 0NJ  
UK  
**44-01-889-882723**  
**44-01-889-881223 (fax)**  
**[ilija@kovac.com](mailto:ilija@kovac.com)**  
**<http://www.kovac.com/software/>**

Amadeus® is an extremely interactive scene composition tool combined with powerful real time manipulation, rendering, video and input/output functions. It can import one or more models from AutoCAD® (dwg, dxf), 3DStudio®, VRML, SGI Inventor IV™, Alias, SOFTIMAGE, Wavefront OBJ™, Pixar RIB™, IGES™... The models can be arranged, edited, lights added and modified, materials created, meshes optimized and combined with internally generated models. The scene can be viewed in real-time or rendered using the inbuild renderers, raytracer and optional Renderman™. The Integral radiosity model can convert the scene to a parallel pre-lit scene which can be viewed in real-time--extremely useful for building lighting visualization. The scene, including the radiosity scene, can be exported to the above formats or to a movie. Amadeus can run on Irix 5.3, Windows 95 or Windows NT. Fully OLE2 compliant.

IRIX version compatibility:

# Visual Simulation

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## AMAP™

Alain Chauchard  
Head of Administration  
CIRAD/Unite de  
modelisation des plantes  
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Montpellier, 34032  
France  
**33-4-67-61-71-87**  
**33-4-67-61-56-68 (fax)**  
**chauchard@cirad.fr**  
**http://www.cirad.fr/**

The 3-D Advanced Modeler for Architecture of Plants provides an easy way to visualize gardens, parks, golf course, urban landscapes or just a bouquet of flowers. AMAP® is the result of scientific research for plant growth simulation and can model any kind of plant including trees, bushes, grass, and flowers. AMAP also offers a quick and interactive 3-D plant visualization and 3-D scene editor for landscapes, interior decoration and urban scenes imaging; a fast realistic renderer including shadow, texture mapping and fog; and an animation editor with video interface to monitor tape recorder.

IRIX version compatibility:

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## AMOS

Sharron Lifshitz  
Deputy Dir., Marketing  
B.V.R. Technologies, Ltd.  
1 Korazin Street  
Givatayim, 53583  
Israel  
**972-3-571-5671**  
**972-3-571-5668 (fax)**  
**lifshitz@bvr.co.il**

The AMOS cadet screening and basic flight training simulator has been developed under a contract for the IAF. AMOS is based on the HOTSHOT technology with additional software packages that allow teaching and assimilation of flight maneuvers and emergency procedures. Cadet performance is recorded for instructor debriefing and computerized analysis. Data can be accumulated to perform statistical analysis throughout years of recorded flights. AMOS can be adapted to any training aircraft type.

IRIX version compatibility:

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## ARENA™

David Flood  
Dir., Simulation Technology  
Eidetics International, Inc.  
3415 Lomita Blvd.  
Torrance, CA 90505  
USA  
**310-326-8228**  
**310-326-9358 (fax)**  
**eidetics@cerf.net**

EIDETICS's ARENA™ is a low cost, multiple Man In The Loop air combat simulation environment allowing realistic air crew training, avionics and weapon system operational requirements development, and advanced technology assessment. ARENA™s system provides rapid mission planning, data collection and configuring of all aircraft participants with operator selection of aircraft specific, high fidelity airframe, avionics and weapons models. GUI editing of model parameters allows rapid conceptual design and scenario development. ARENA™s Virtual Dome™ display provides full mission engagements without dome enclosures. (See VIRTUAL DOME™) ARENA™ includes geo-specific terrain OTW's, aircraft specific HUD, HDD's and low to high fidelity cockpits.

IRIX version compatibility:

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## AVS Readers & UCD Builder

Stephen Weinberger  
Scientific Visualization  
Associates, Inc.  
200 Baker Avenue  
Suite 307  
Concord, MA 01742  
USA  
**508-371-2923**  
**508-371-4954 (fax)**  
**00000**  
**http://www.sciviz.com/  
sciviz/index.html**

With AVS, from Advanced Visual Systems, Inc., the UCD Builder and AVS Readers enable engineers to quickly and robustly present, interpret, and animate their FEA and CFD results. Hidden attributes are revealed using features like semi-transparent isosurfaces and dynamic clipping planes, shrink, value probe and data monitoring. Users can dynamically manipulate models in complex rendered formats and animated sequences. No programming is required.

Readers are available for ABAQUS, ANSYS, FIDAP, FLUENT, LS-DYNA3D, MSC/DYTRAN, MSC/NASTRAN and others. SciViz also easily interface these readers to other animation and visualization packages.

IRIX version compatibility:

# Visual Simulation

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## Amber Virtual Environment Toolkit

Paul Cattrone  
Mgr., Amber Dev Relations  
MetaTools, Inc.  
6303 Carpinteria Avenue  
Carpinteria, CA 93013  
USA  
**805-566-6347**  
**805-566-6385 (fax)**  
**cattrone@metatools.com**

Amber Virtual Environment Toolkit is a C++ multi-platform API for developing dynamic virtual environments. Amber provides a high level API for the importation and manipulation of graphical objects. Amber implements three levels of behaviour-laws, styles, and actions. Laws are behaviours that affect all objects in a universe, like gravity. Styles are behaviours that affect a class of objects. Actions are behaviours that affect an individual object. Along with behaviours, Amber incorporates advanced collision algorithms that allow for fast and accurate collision detection down to the "point on a polygon face" accuracy. Amber uses OpenGL as the low level renderer on the SGI platform.

IRIX version compatibility: 5.3

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## Architectural and Environmental Modeling and Simulations

Taren D. Tanner  
President  
Crystal Visions of Reality  
3 West Main Street  
Pawling, NY 12564  
USA  
**914-855-3866**

Crystal Visions of Reality (CVR) is a Database Modeling Company which develops databases and simulations for future resource planning. Some of these applications are facilities planning, environmental resourced planning, town/city planning and terrain visualization.

CVR's databases and simulations are created through a combination of SGI Reality Engine Graphics, Coryphaeus Designer's Workbench and a customized version of IRIS Performer. Because CVR's databases are developed specifically for use with IRIS Performer, we can tailor them for use in any real-time performance-oriented graphical application

IRIX version compatibility:

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## AutoMod™

Sales Department  
AutoSimulations, Inc.  
655 Medical Drive  
Bountiful, UT 84010  
USA  
**801-298-1398**  
**<http://www.autosim.com>**

AutoMod™ is a simulation package that simulates real-world conditions to design, analyze, and test the efficiency of manufacturing, material handling, storage, and distribution facilities. Users will be comfortable with AutoMod because it is easy to use, yet powerful. AutoMod uses CAD-like drawing tools to generate the physical elements of the model. Spreadsheets and an English-like language are used to simulate the system's logic. AutoMod has a shape editor to customize loads, trucks, and other graphics, and has true three-dimensional graphics to analyze the system from any angle while the simulation is running. AutoMod also automatically generates statistics for analysis.

IRIX version compatibility: 5.3, Pre 5.x

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## Avionics Visual Instrument Development System (AVIDS)

Steven Thomas  
Sales Manager  
Evans & Sutherland  
600 Komas Drive  
PO 58700  
Salt Lake City, UT 84158  
USA  
**801-255-9000**  
**801-255-9018 (fax)**

Avionics Visual Instrumentational Development System (AVIDS) is a Rapid Prototyping System that employs a graphical user interface for rapid development of cockpit simulation and training applications. An object oriented approach allows designers to use specially designed graphics objects, such as linear tapes and circular tick marks. Graphics editing features include rotate, scale or translate, circular copies, grouping, viewport clipping, and a selection of 16.7 million colors. Other features include generating stand-alone C code, PostScript™ output, display list editing, and extensive dynamic commands. AVIDS is available for multiple development and target systems.

IRIX version compatibility:

# Visual Simulation

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## CAD Data Loader for Performer

Pete Reck  
Manager of Sales  
Jacobus Technology, Inc.  
7901 Beechcraft Avenue  
Gaithersburg, MD 20879  
USA  
**301-926-0802**  
**301-926-2313 (fax)**  
**info@jacobus.com**  
**http://www.jacobus.com/**

CAD Data Loader for AutoCAD and Microstation into SGI Performer™. Includes JSM-FLY version of Performer and Object Library for application linking. Also includes ADS or MDL CAD application interface.

IRIX version compatibility:

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## CADview

Heike Urumma  
LINEAS  
Informationstechnik GmbH  
Theodor-Heuss-Str.1  
Braunschweig, D-38122  
Germany  
**49-531-28150-0**  
**49-531-28150-50 (fax)**  
**info@lineas.de**  
**http://www.lineas.de**

CADview is a software for the visualization of different CAD-data. It loads VDA/FS, IGES, DXF, ICEM IPARTA, HPGL, TIFF, CGM and CADDs files, displays them in an arbitrary view and saves them again as HPGL, TIFF, Postscript, CGM or MIF. Datasets can be zoomed, magnified and demagnified, rotated and moved. Entities, groups, sets and objects can be blanked or colored. The system also allows for displaying internal geometry information.

IRIX version compatibility: Pre 5.x

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## CAVE™ and ImmersaDesk™

Ted Jordan  
Dir, Adv Visual Group  
Pyramid Systems  
24477 West Ten Mile Road  
Southfield, MI 48034  
USA  
**248-356-2662**  
**248-356-0063 (fax)**  
**800-846-2662 (tollfree)**  
**sales@pyramidvideo.com**  
**http://www.**  
**pyramidsystems.com**

The CAVE™ and ImmersaDesk™ are projection-based virtual reality display technologies developed by the Electronic Visualization Laboratory at the University of Illinois at Chicago. The CAVE is a multi-person, room-sized, high resolution, 3-D video and audio environment; it is a 10x10x9 foot theater made up of three rear-projection screens for walls and a down-projection screen for the floor. The ImmersaDesk is a drafting-table format virtual prototyping device designed as a single-user application development station. The CAVE software library supports both these displays as well as a workstation-based CAVE simulator. Companies can purchase these technologies as well as collaborate with the Electronic Visualization Laboratory on virtual reality research.

All hardware and software is available thru Pyramid Systems, Inc. Sales, Support, Integration and Installation worldwide.

IRIX version compatibility:

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## CFView

Marc Tombroff  
Product & Sales Engineer  
NumeCa International  
R. de la Concorde 22  
1050 Brussels,  
Belgium  
**32-2-629-2378**  
**32-2-629-2880 (fax)**  
**num@stro10.vub.ac.be**

CFView 3.7 is a computational field visualization system, providing all possible qualitative and quantitative flow analysis tools, both for structured and unstructured 2-D/3-D meshes. The high level of interactivity, associated to the new concept of presentation, makes CFView the quickest and easiest-to-use visualization system. CFView is based on the most advanced software tools and standards, such as object-oriented languages and PHIGS, integrated with X-Windows.

Prerequisite Hardware: 32MB main memory, 24 bit planes + Z buffer

IRIX version compatibility:

# Visual Simulation

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## CLRview: Interactive 3D GIS & CAD Integration and Visualization Tool

John Danahy  
Director  
Centre for Landscape  
Research  
230 College Street  
Toronto, ON M5S 1A1  
Canada  
**416-978-3551**  
**416-971-2094 (fax)**  
**land@clr.utoronto.ca**  
**http://www.clr.toronto.**  
**edu:1080/clr.html**

CLRview is a 3-dimensional visualization program designed to exploit the real-time capabilities of Silicon Graphics IRIS computers.

This program is designed to provide a core set of tools to aid in the visualization of information from CAD and GIS sources. It supports the integration of many common but disparate data sources such as DXF, TIN, DEM, Lattices, and Arc/Info Coverages among others. Special attributes are also supported from Arc/Info which allow for automatic generation of 3D form from 2D mapping for building massing, forestry, volumetrics, and other point-source data.

<http://www.clr.toronto.edu:1080/CLRVIEW/cvmain.html>

IRIX version compatibility:

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## Conferencing Visualization System (CVS)

James Waldrop  
Technical Director  
Construct Internet Design  
448 Bryant Street  
San Francisco, CA 94107  
USA  
**415-512-3975**  
**415-357-2170 (fax)**  
**sulam@construct.net**  
**http://www.construct.net**

CVS is a system for visualizing online conferencing systems. Using the Virtual Reality Modeling language and customized translation algorithms, CVS allows you to navigate and manage your conference in 3-D.

IRIX version compatibility: Pre 5.x

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## CrystalEyes 2®

William Noble  
CrystalEyes Account  
Manager  
StereoGraphics Corporation  
2171 East Francisco Blvd.  
San Rafael, CA 94901-5536  
USA  
**415-455-1868**  
**415-459-3020 (fax)**  
**800-783-2660 (tollfree)**  
**sales@crystaleye.com**  
**http://www.stereographics.**  
**com/**

StereoGraphics flagship product is CrystalEyes®, a wireless, lightweight, comfortable set of electronic LCD active eyewear marketed exclusively for the complete Silicon Graphics product line. This high-quality product provides flicker-free, full color viewing of 3-D images. CrystalEyes dramatically enhances your ability to view complex 3-D images and technical data. Some applications include molecular design, prototyping, modeling, mechanical CAD, and visual simulation.

IRIX version compatibility: 5.x, 6.x

# Visual Simulation

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## DATA VISUALIZER™

Marketing Administrator  
Alias Wavefront  
110 Richmond Street East  
Toronto, ON M5C 1P1  
Canada  
**416-362-9181**  
**416-362-0630 (fax)**  
**800-447-2542 (tollfree)**  
<http://www.aw.sgi.com/>

Alias | Wavefront's DATA VISUALIZER™ is an interactive analysis and presentation package which offers exceptional performance and usability with all types of three-dimensional and time-dependent field data. The software provides an innovative set of data inspection tools for viewing complex scalar and vector information from within a uniquely efficient "direct manipulation" user interface. The DATA VISUALIZER is used in such diverse fields as computational fluid dynamics, environmental engineering, structural analysis, electronics, geoscientific modeling and oil reservoir simulation. It is data and image compatible with Alias | Wavefront's entire line of presentation graphics products.

IRIX version compatibility: 5.3

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## DESIGN3

Manfred Bischof  
Sales Manager  
CIS Graphik &  
Bildverarbeitung GmbH  
Helmholtzstrabe 21  
Viersen, 41747  
Germany  
**011-49-2162-269340**  
**011-49-2162-14287 (fax)**  
[Manfred\\_Bischof@Cis.de](mailto:Manfred_Bischof@Cis.de)  
[URR.CIS.de](http://URR.CIS.de)

DESIGN3 is a product family of CAD-Systems for the design of woven fabrics. It is used by designers and design studios as well as in mills. It accelerates the design process, reduces cost by minimizing sample weaving, and improves the decision and sales process. The now available version 3.3 running on Indy and Indigo offers unique features in fabric visualization by means of true-to-scale displays and 3-D simulation of the woven fabric. Additionally, using DESIGN3-STYLE allows the displaying of fabric on garment and furniture models.

IRIX version compatibility:

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## DESIGN3 RAMSETE

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CIS Graphik &  
Bildverarbeitung GmbH  
Helmholtzstrabe 21  
Viersen, 41747  
Germany  
**011-49-2162-269340**  
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[Manfred\\_Bischof@Cis.de](mailto:Manfred_Bischof@Cis.de)  
[URR.CIS.de](http://URR.CIS.de)

DESIGN3 RAMSETE is a CAD-System for textile printing. It offers advanced tools for the whole process ranging from design up to film plotting and engraving. It's extraordinary speed and handling of large amounts of data for color overlapping, retouching and screening are unique. The software runs on Indy and Indigo systems. Version 4.0 is now available.

IRIX version compatibility:

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## DIS/DOT/LINK

Jerry Feinberg  
Principal Engineer  
PRC, Inc. (VA)  
4301 North Fairfax Drive  
Suite 700  
Arlington, VA 22207  
USA  
**703-516-6059**  
**703-516-6065 (fax)**  
[feinberg@bs1.prc.com](mailto:feinberg@bs1.prc.com)

Tools using Distributed Object Technology (DOT) to provide links to Distributed Interactive Simulation (DIS) exercises.

IRIX version compatibility:

# Visual Simulation

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## DX Builder and DX Readers

Stephen Weinberger  
Scientific Visualization  
Associates, Inc.  
200 Baker Avenue  
Suite 307  
Concord, MA 01742  
USA  
**508-371-2923**  
**508-371-4954 (fax)**  
**00000**  
[http://www.sciviz.com/  
sciviz/index.html](http://www.sciviz.com/sciviz/index.html)

The DX Readers and DX Builder enable engineers to quickly and easily bring their analysis results into IBM's Visualization Data Explorer (DX) for visual presentation, interpretation and animation. The DX Builder is a DX module (with a Motif user interface) which creates DX fields based on user selections of attributes of the data like material type, element type, sub-cases, substructures, time-steps, and variables. Data can be mapped to multiple visual cases and animated to aid in the understanding and presentation of analysis results. DX Readers are available for data from: ABAQUS, ANSYS, LS-DYNA3D, MSC/DYTRAN, C-MOLD, FIDAP, FLUENT and STAR-CD SciViz can also easily interface these readers to other animation and visualization packages.

IRIX version compatibility: 5.3

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## DesignConcept™ 3D

Nan Frazee  
Promotional Comm.  
Manager  
Computer Design, Inc.  
2880 East Beltline N.E.  
Grand Rapids, MI 49505  
USA  
**616-361-1139**  
**616-361-5679 (fax)**  
[cditi@product-info.uu.net](mailto:cditi@product-info.uu.net)  
[http://www.techexchange.  
com/tek guru/vars/cdi.html](http://www.techexchange.com/tek guru/vars/cdi.html)

DesignConcept™ 3D is a software package for 3-D conceptual design that specializes in visualization, material covering, pattern flattening, and reverse engineering. This software consists of 3 main modules: Visualization, Premier Visualization, and 4 Stand-alone modules: Re-Engineering, Advanced Pattern Composite Flattening, Laser Projection Module and the CAD Visualizer. See more detailed module description listed under software module name.

Users can create models with complex, free-form, manufacturable surfaces, starting with NURBS curves or digitized data. The system allows users to quickly fit smooth surfaces through random 3-D digitized data. The modeler includes interactive editing tools and surface evaluation tools. Real-time, 3-D texture-mapping allows user to map any material to the surface of a 3-D object. The software enables users to generate a single pattern piece from multiple surfaces, or from a portion of a surface.

IRIX version compatibility: 5.3

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## DevTools

Gordon Ferguson  
President  
Visual Kinematics, Inc.  
14395 Saratoga Avenue  
Suite 120  
Saratoga, CA 95070  
USA  
**408-867-6285**  
**408-867-7218 (fax)**  
[gordy@vki.com](mailto:gordy@vki.com)  
<http://www.vki.com/>

DevTools provides an object oriented set of tools for the manipulation, visualization and rendering of data on unstructured (finite element) and block structured grids. Data manipulation includes access mechanisms for most commercial finite element systems and industry standard file transfer formats. Visualization features include contour and isosurface generation, streamline, streamsurface, vector and sensor icon display. Rendering capabilities include interfaces to all major UNIX 3-D graphics systems including GL and OpenGL. Software rendering is supported in X Windows. DevTools supports C++, C and Fortran interfaces. Source code is available.

IRIX version compatibility:



# Visual Simulation

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## Discovery for Developers™

John Varghese  
Visible Decisions, Inc.  
200 Front Street West  
Suite 2203, P.O. Box 35  
Simcoe Place  
Toronto, ON M5V 3K2  
Canada  
**416-864-3900**  
**416-864-3901 (fax)**  
**info@vizbiz.com**  
**http://www.vdi.com/**

Discovery for Developers™ is an object-oriented toolkit that allows you to create real-time visual applications for viewing and analysing large, complex datasets using revolutionary interactive 3-D graphics.

The Discovery class hierarchy provides a rich set of extensible classes for building an information landscape. These landscapes include geometric objects, dynamic queries, filters, drill down brushes, real time alerts, real time analytics, data access mechanisms, and 2-D and 3-D user interface dialogs.

Several data communications APIs are available: ODBC for databases, Teknikron's TIB and Reuters' SSL for real-time data, and a TCP/IP socket protocol for custom implementations.

IRIX version compatibility: Pre 5.x

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## E-View

Francesca Freedman  
VP, Marketing  
Runway Systems  
432 High Street  
Palo Alto, CA 94301  
USA  
**415-853-1911**  
**415-853-1914 (fax)**  
**faf@ix.netcom**

Developing the leading previewing and information system for the marketing and selling of inventory-free, mass-customized apparel.

IRIX version compatibility: Pre 5.x

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## EHUD

Sharron Lifshitz  
Deputy Dir., Marketing  
B.V.R. Technologies, Ltd.  
1 Korazin Street  
Givatayim, 53583  
Israel  
**972-3-571-5671**  
**972-3-571-5668 (fax)**  
**lifshitz@bvr.co.il**

The complexity of the modern dog-fight has driven towards the need for computerized debriefing systems. The current solution ACMI (Air Combat Instrumentation) range which is extremely expensive, restricts the maneuvering to the range territories and therefore, allows a limited number of sorties per day.

B.V.R. has developed EHUD, a unique ACMI system which embodies all the capabilities of the ACMI and many more, without the limitations of the fixed place ground range.

Additional features allow the user to receive voice warnings to avoid collisions between aircraft or into the ground, debriefing of Air-to-Ground missions (the old ACMI is limited at low altitude because of line of sight limitations), Dynamic allocation of data link time slots and a unique navigation algorithm.

IRIX version compatibility:

# Visual Simulation

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## ESP Modeler

Michael Sweet  
Partner  
Easy Software Products  
44145 Airport View Drive  
Suite 204  
Hollywood, MD 20636  
USA  
**301-373-9603**  
**301-373-9604 (fax)**  
**mike@easysw.com**  
**<http://www.easysw.com/>**

ESP Modeler is a three-dimensional modeling tool that can be used for standalone visual simulation development using GL and OpenGL or in conjunction with higher-level visualization tools such as IRIS Inventor™ and IRIS Performer™. It supports multiple levels-of-detail (LODs) within a single model and provides color and lighting control to the vertex level. In addition to its native file format, ESP Modeler supports the Inventor, Quick-Model, Pixar RIB®, DXF, Powertrace, POV-Ray, and VRML 1.0 Formats. Full source code for the modeler file API and demonstration programs is included.

IRIX version compatibility: 5.x, 6.1, 6.2 Certified, 6.3 Certified

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## EVACSIM

J. Chantrel  
Business Dev. Engineer  
SIMULOG  
1, Rue James Joule  
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78286  
France  
**33-1-30-12-27-00**  
**33-1-30-12-27-27 (fax)**  
**chantrel@simulog.fr**

EVACSIM is a unique tool for modeling and analysis of evacuation flows for public and private facilities, including buildings, stadiums, passenger terminals, oil platforms. Evacsim was developed to meet the need for a modeling tool combining knowledge about human behavior in emergency situations with the ability to perform large scale simulations of flows. Evacsim represents people in a facility as individuals using built-in models for behavior. It has the capability of collecting information on their movements, their exposure to potential accident effects, and their time to exit various parts of a structure.

IRIX version compatibility:

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## EVM and ECM Monitors

Bruce Brown  
Monitor Marketing Manager  
Electrohome Ltd.  
809 Wellington Street North  
Kitchener, ON N2G 4J6  
Canada  
**519-744-7111**  
**519-749-3131 (fax)**  
**CELLIS**  
**<http://www.electro.com>**

The two major business sectors at Electrohome Electronics are Projection Systems and Display Systems. Display Systems markets a comprehensive range of color and monochrome high-performance monitors in screen sizes that range from 9" through 27". Most are VARISCAN models that automatically lock onto frequencies to 50 KHz. Some employ the latest in flat/square tube technology and are EGA, VGA, and MAC II compatible. Popular applications include CAD/CAM, desktop publishing, graphics imaging, medical, financial trading rooms, and public information displays. A full line of accessories is available for these Display products.

IRIX version compatibility: 5.3, 6.1

# Visual Simulation

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## EnSight™

Tom Palmer  
VP, Sales & Marketing  
Computational Engineering  
International, Inc.  
PO Box 14306  
Research Triangle Park, NC  
27709  
USA  
**919-481-4301**  
**919-481-4306 (fax)**  
**palmer@ceintl.com**  
**<http://www.ceintl.com>**

EnSight™ 5.5 is the world's most advanced software tool for the interactive visualization and animation of results data from a wide variety of finite element modeling applications in fields such as CFD, combustion modeling, injection molding simulation, and structural deformation. EnSight enables one to read in and work with up to eight different computational or experimental datasets for comparative purposes.

EnSight reads directly results from codes such as FIDAP, STAR-CD, CFDS-CFX, FLOW-3D, FLUENT, RAMPANT, FLUENT-UNS, AIRPLANE, LS-DYNA3D, ANSYS, ABAQUS, etc. and translators are provided for many more codes such as C-MOLD, MOLDFLOW, POLYFLOW, PAM-CRASH, KIVA, and FIRE.

EnSight is a distributed postprocessor: a Server process handles I/O and compute intensive activities and a Client handles all user-interface interaction and graphic rendering. The processes can reside on the same workstation or two separate systems. Only the Server portion is licensed and licensees are free to copy the Client to as many different workstations as they wish. The needs of multiple users can therefore be met with a single license.

IRIX version compatibility: Pre 5.x

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## EncounterVUE

Doug Postman  
GRC International, Inc.  
1900 Gallows Road  
Vienna, VA 22182  
USA  
**703-506-5000**  
**703-760-8747 (fax)**  
**encountervue@grci.com**

EncounterVUE is a flexible, interactive tool for visualizing the operation of complex physical systems, including satellites, aircraft, ground vehicles, etc. EncounterVUE leverages the hardware capabilities of state-of-the-art graphics workstations, emphasizing high-speed, high resolution displays in two and three dimensions.

GRCI is an industry leader in the application of visual simulation to support the diverse needs of our military, civil, and commercial customers. EncounterVUE is the result of nearly a decade of investment by GRCI to better serve customers whose needs were not being met by conventional simulation output.

GRCI provides EncounterVUE licenses, together with customized interfaces and display options, as delivered products for our clients.

IRIX version compatibility:

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## FAST

Karen Newcomb  
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USA  
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**service@cosmic.uga.edu**  
**<http://www.cosmic.uga.edu/pub/SGI.html>**

FAST (Flow Analysis Software Toolkit) is a software environment for visualizing computational fluid dynamics and other types of complex data. FAST combines the capabilities of NASA programs PLOT3D, RIP, SURF and GAS into one environment with modules that share data. Separate modules can run simultaneously, allowing the user to load data files, perform calculations on the data, visualize the results of these calculations, construct scenes of 3D graphical objects, and plot, animate, and record the scenes. The modular construction of FAST makes it flexible and extensible. Written in ANSI compliant FORTRAN 77 and C-language for use on SGI IRIS series workstations running IRIX 3.3 or later. PROGRAM NUMBER: ARC-13316.

IRIX version compatibility:

# Visual Simulation

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## FAST Support

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Sterling Software, Inc.  
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Redwood City, CA 94065  
USA  
**415-802-7100**  
**415-802-7162 (fax)**  
**wanda\_pfaller@sterling.com**

Sterling Software develops FAST under contract for NASA. They offer bundled support and sales of NASA FAST (Flow Analysis Software Toolkit), which consists of complete modular fluid flow system-rendering, animation, recording, grid generation, grid and data quality analysis, flow topology analysis. Sterling is authorized by COSMIC to resell and to provide commercial support to FAST users.

IRIX version compatibility: Pre 5.x

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## FD/STS 3D Monitor System (3D-Mon)

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**<http://www.cosmic.uga.edu/pub/SGL.html>**

The 3D-Mon system computes and displays a 3-D solid model of the space shuttle, its appendages, its payload, and its surrounding environment using real-time, archived, or simulated telemetry data. The system also supports spacecraft other than the shuttle. Several interactive capabilities are provided to users that include changing the viewpoint to anywhere in the universe, querying an object for information, and toggling various objects and environmental parameters on and off. The system is used by operations personnel and analysts to perform various mission monitoring, mission planning, mission analysis, and quality assurance activities. Provided source code is available for use on SGI IRIS 4.0/310VGX workstation with IRSIS GL version 4.0.5 and the MIPS Computer System C Compiler version 2.0.4.

IRIX version compatibility:

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## FLSIM

Sid Svorseck  
Development Engineer  
Virtual Prototypes, Inc.  
4700 de la Savane  
Suite 300  
Montreal, PQ H4P 1T7  
Canada  
**800-361-6424**  
**514-341-8018 (fax)**  
**sid@virtualprototypes.ca**  
**<http://www.virtualprototypes.ca>**

Flight Simulator (FLSIM) - is highly flexible and reconfigurable tool for flight procedure trainers, human factors research, and avionics design applications. By using the more than 150 available parameters and graphs, a flight environment can be configured for any fixed wing aircraft. Through simple point-and-click menu operations, users define the engine, aerodynamics, aircraft control, and world parameters. With the addition of aircraft devices such as a joystick, throttle and pedals, Flight Simulator (FLSIM) provides a realistic user-definable environment.

IRIX version compatibility:

# Visual Simulation

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## FOTO

Sally Ingalls  
Product Marketing Mgr  
Cognition, Inc.  
319 Littleton Road  
Suite 100  
Westford, MA 01886  
USA  
**508-392-0881**  
**508-392-0882 (fax)**  
**00000**

FOTO is a general-purpose visualization application allowing users to interactively connect parameters in a data set to visualization types such as color, contour lines, transparency, culling, deformations, vector icons, and symbols. No programming is required. FOTO handles data associated with regular and irregular gridded as well as unstructured geometry. FOTO's simple-to-use animation editor uses key frames. By specifying the view, visualization parameters, and time at important frames of an animation sequence, FOTO automatically creates the frames inbetween. FOTO is used in a wide range of applications, including finite element analysis, fluid dynamics, oil reservoir engineering, heat flow analysis, meteorology, and medical research.

IRIX version compatibility: 5.2, 5.3

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## FREDANI™

Fred Stecher  
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F S Software, LLC  
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USA  
**612-478-8720**  
**fssoftware@aol.com**  
**[http://members.aol.com/  
fssoftware/Home.html](http://members.aol.com/fssoftware/Home.html)**

FREDANI™ is an interactive 5 dimensional (variables) visualization tool with animation. FREDANI's capabilities include: perspective or orthographic viewing; 3-D rotations; panning; zooming; color fringes; shading and object mirroring. FREDANI can be used by engineers, scientists, academia and others for the visualization of 2-D and 3-D simulations (finite element, finite difference or custom software). Included with FREDANI is a preprocessor translator which converts PATRAN® neutral files into a FREDANI data file. FREDANI uses the SGI GL graphics library and runs on 4D SGI workstations (from Indy to higher). FREDANI is fast, not complicated, very easy to learn and provides the user instant insight.

IRIX version compatibility: 5.3, 6.x

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## GAS

Karen Newcomb  
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USA  
**706-542-3265**  
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**[http://www.cosmic.uga.  
edu/pub/SGI.html](http://www.cosmic.uga.edu/pub/SGI.html)**

GAS, the Graphics Animation System, is a graphical animation software package developed in support of the work of the Computational Fluid Dynamics (CFD) scientists at NASA Ames Research Center. GAS's purpose in the CFD graphical analysis software cycle is to provide an easy-to-use, menu-driven program providing fast, simple viewing capabilities as well as more complex rendering/animation features. It is used to display 2-D and 3-D objects along with computed data and to record animation sequences on various video digital disk, videotape, and 16mm film technologies. Written in c-language for IRIS 2000/3000 in 1988, Ported to IRIS 4.0 in 1991. Also see FAST (ARC-13316).

IRIX version compatibility:

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## GRAPHIO

Laurent Fritz  
Ingenieur  
CESTA  
37 avenue du General de  
Gaulle  
Bruz, 35170  
France  
**33-1-99-52-93-14**  
**33-1-99-57-91-67 (fax)**

GRAPHIO is an additional layer based on graphics functions of Xlib and OSF/Motif™ libraries. It provides users with fast history mechanism, allowing multi-level undo and redo of what has been previously drawn. The history mechanism allows others features such as insert, replace (therefore animate) or erase graphics. Many more functionalities are provided by GRAPHIO such as zoom, pixels expansion, user coordinates, drawing pixels, graduations and file image dump. GRAPHIO software package is divided into a library product (C/C++ language interface) and a software product (command-line interface). Particularly the library product can deal with one or many Drawing Area widget of Motif™.

IRIX version compatibility: Pre 5.x

# Visual Simulation

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## GameGen™ II

Chantelle Shaban  
MultiGen, Inc.  
550 South Winchester Blvd.  
Suite 500  
San Jose, CA 95128  
USA  
**408-261-4100**  
**408-261-4101 (fax)**  
**cshaban@multigen.com**  
**<http://www.multigen.com/>**

Game developers use the GameGen II authoring tool to create, edit and prototype 3D environments for realtime game applications. GameGen II enables users to rebuild 3D worlds and realtime game event logic, with the database organization required for peak performance on any game platform.

IRIX version compatibility: 5.3

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## Graph Layout Toolkit

Lisa Lee  
Tom Sawyer Software  
1828 Fourth Street  
Berkeley, CA 94710  
USA  
**510-848-0853**  
**510-848-0854 (fax)**

Tom Sawyer's Graph Layout Toolkit is a family of portable libraries that deliver an immediate face-lift to graphics applications with their sophisticated layout algorithms. The Graph Layout Toolkit libraries' logical representation of objects and connections allow end users to more easily see underlying relationships within complicated data. The libraries also work in real-time, rarely requiring more than a few seconds to produce quality output even for large graphs with several hundred nodes.

Four extensible C++ class libraries that include ANSI C APIs make up the Graph Layout Toolkit family: the Circular, Hierarchical, Orthogonal\*, and Symmetric Layout Libraries. All libraries share a common foundation.

IRIX version compatibility: Pre 5.x

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## HME

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**<http://www.cosmic.uga.edu/pub/SGL.html>**

HME - Hierarchical Modeling Environment, is a 3-D modeling application designed to give the user complete access to the hierarchical structure of models to the polygonal level. HME allows the user to dynamically build, manipulate, and display hierarchical 3-D objects. The program's window-oriented user interface allows manipulation of objects using the mouse, menus, buttons, and sliders. The model hierarchy is displayed graphically and allows the user to point at any node and use a powerful set of options to utilize the full potential of the GL™ library. HME is especially useful for understanding the basic principles of computer graphics. Written in C-language for IRIS workstations supporting the 4Sight windowing system. Implemented under IRIX 3.1.

IRIX version compatibility:

# Visual Simulation

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## HOTSHOT™

Sharron Lifshitz  
Deputy Dir., Marketing  
B.V.R. Technologies, Ltd.  
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Givatayim, 53583  
Israel  
**972-3-571-5671**  
**972-3-571-5668 (fax)**  
**lifshitz@bvr.co.il**

The HOTSHOTtrainer concept has evolved from the increasing demand on combat pilots to master and manage the vast amount of information presented in the cockpit. B.V.R. embarked upon this need, and pioneered with the concept of providing the fighter pilots with trainers that can be installed at squadron level. The second generation trainer, the SUPER HOTSHOT allows formation training in Air-to-Air combat practice (1 VS 1, 2 VS 2, 4 VS 4, etc.), emergency procedure practice, navigation, and instrument flight training.

The HOTSHOT has been purchased for use in all the advanced squadrons of the Israeli Air Force (IAF) and by additional Air Forces worldwide. Versions of the HOTSHOT are available today for A-4, F-5, F-16A, F-16 C/D, F-15 and additional aircraft types, including helicopters.

HOTSHOT simulators are also available for ships, tanks and artillery including a forward observer drainer.

IRIX version compatibility:

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## HTI IOS Toolkit

Bob Casullo  
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Hughes Training, Inc.  
13775 McLearen Road  
Dept. 3835  
Herndon, VA 22071-3212  
USA  
**703-481-4641**  
**703-689-0018 (fax)**  
**bcasullo@ccsmtp.hd.hac.com**  
**http://www.hti.com**

The HTI IOS (Instructor-Operator Station) Toolkit is a suite of commercial and HTI-developed tools for the rapid prototyping of SGI-based flight simulator IOS systems.

The toolkit eases all aspects of IOS X/Motif and GL display development as well as the interface between the host and IOS systems.

IRIX version compatibility:

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## HYDA - Hydronumerical Modeling

Kevin MacIntosh  
Principal  
W.F. Baird & Associates  
S-150  
38 Antares Drive  
Ottawa, On K2E 7V2  
Canada  
**613-225-6560**  
**613-225-5957 (fax)**  
**ottawa@baird.com**

HYDA is an integrated hydronumerical modeling environment consisting of:

- a database with a graphical user interface
- links to various hydronumerical models for hydrodynamic simulations
- grid generation capabilities
- interactive 2- and 3-dimensional visualization including animation
- links to a comprehensive analysis software package.

HYDA was developed in order to significantly decrease the turnaround time required to prepare, run and analyze results from hydronumerical simulations. HYDA presents a consistent user interface to models regardless of the solution technique. Users may prepare data and run simulations completely within HYDA or simply use HYDA to view and compare simulation results.

IRIX version compatibility: Pre 5.x

# Visual Simulation

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## IDL®

Christina Liebman  
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Suite 203  
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USA  
**303-786-9900**  
**303-786-9909 (fax)**  
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**http://www.rsinc.com/**

IDL® is a complete, integrated computing environment for data analysis, visualization, and custom application development. Worldwide, over 20,000 users in laboratories, universities, and industry take advantage of IDL's comprehensive capabilities for both research and production applications, spending only hours or days writing programs and complete applications rather than weeks or months in traditional languages like C or FORTRAN. IDL features include: an array-based, 4th generation language (4GL) to quickly prototype new ideas, a cross-platform toolkit for developing MOTIF™, Macintosh® OS, and Microsoft® Windows graphical user interfaces, Numerical Recipes™ mathematics and statistics routines, built-in gridding, and data display capabilities ranging from XY plots to 3-D volume visualization.

IRIX version compatibility: Pre 5.x

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## IMAGE LINK

Eric Smith  
Vice President  
Image Resources, Inc.  
4545 36th Street  
Orlando, FL 32811  
USA  
**407-843-4200**  
**407-422-3490 (fax)**

IMAGE Link is an automated high speed telecommunication product for sending design, manufacturing, or print information files over standard telephone lines. With a direct SGI UNIX interface you can drag and drop off files from your workstation and send them to anywhere in the world up to twenty times faster than standard modem transmission with guaranteed results every time. This is accomplished through our propriety compression and multi channel processing techniques. As a network device Visual Link is easy to setup and operate. IMAGE Link also supports audio and video transmission.

IRIX version compatibility:

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## IRIS EXPLORER

Terry Burgess  
Marketing Manager  
The Numerical Algorithms  
Group, Ltd. (NAG)  
Wilkinson House  
Jordan Hill Road  
Oxford, OX2 8DR  
UK  
**44-1865-511245**  
**44-1865-310139 (fax)**  
**HELPDESK@IEC.CO.**  
UK  
**http://www.nag.co.uk/**

IRIS Explorer™ is a visualization software for scientists, engineers and other business professionals needing to display and analyze complex data. Features include 64-bit support for R8000 machines; system enhancements including improved scripts interface, visual 'drag & drop' interface, new widgets; modules based on the NAG Graphics Library and NAG numerical libraries. Designed for top quality performance in distributed processing environments or individual workstations. Available for a wide variety of Unix-based computing platforms.

IRIX version compatibility: Pre 5.x

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## InViVo®: Interactive Visualizer of Scalar Volume Data

Georgios Sakas  
Dr.-Ing.  
Fraunhofer Institute for  
Computer Graphics  
Wilhelminenstrasse 7  
D-64283 Darmstadt,  
Germany  
**011-49-6151-155-153**  
**011-49-6151-155-199 (fax)**

InViVo® is an interactive system for the fast visualization of very large databases of scalar volume data. Such databases are very common in numerous medical, scientific, and engineering applications including 3-D seismic data; measurements of temperature, pressure, density, etc. over space; computer tomography; 3-D ultrasound and atmospheric and environmental measurements.

With InViVo it is possible to visualize a 3-D scalar database of any size in constant time. Using preview techniques, users can manipulate all visualization parameters in quasi-real time, including the position and rotation of data and viewer, viewing angle and perspective, illumination, color, thresholds, and cutting planes.

IRIX version compatibility: Pre 5.x



# Visual Simulation

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## IsoVu

Steve Flanagan  
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Isograph Ltd.  
Television House  
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Manchester, M2 5WT  
UK  
**011-44-61-835-2902**  
**011-44-61-839-2462 (fax)**

IsoVu is a software tool for constructing dynamic graphical user interfaces for a wide range of applications. IsoVu increases the user's productivity and dramatically reduces the time to build an interface.

IsoVu consists of a powerful display builder and a high level programmer's library. The display builder allows the user to construct customized screens containing dynamic output symbols and input facilities without any programming. The screens can then be integrated into an application using simple calls to the programmer's library resulting in a fully interactive dynamic interface.

Output facilities include schematic diagrams, plots, histograms, dials and dynamic symbols.

IRIX version compatibility: Pre 5.x

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## JSpace Viewer™

Pete Reck  
Manager of Sales  
Jacobus Technology, Inc.  
7901 Beechcraft Avenue  
Gaithersburg, MD 20879  
USA  
**301-926-0802**  
**301-926-2313 (fax)**  
**info@jacobus.com**  
**http://www.jacobus.com/**

The JSpace Viewer™ V2.0 is a high performance, real-time animation program allowing users to visualize 3-D CAD models from AutoCAD, MicroStation, DXF, PDS, Autoplant, OMNI, and others. The software allows multiple OSF/Motif windows to be opened where 3-D models can be displayed in a variety of ways. Real-time interactive user motion is controlled by mouse. The JSpace Viewer utilizes the JSpace Object Oriented system, and allows users to perform advanced queries and graphical, display attribute data via the 3-D model while utilizing non-graphical data such as related information from external databases or multi-media. Requires IRIX 4.x or higher. Multi-processor support available.

IRIX version compatibility:

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## Jack™

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6389  
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**~hm**

Jack™ is a human modeling and simulation software system. It simulates the movements of one or more human figures. It can determine mobility, vision and reach. It also checks for collisions with other personnel or the environment. Jack can be scaled to different sizes, can model strength capabilities, and can animate actual tasks to be carried out in a given environment. Jack supports the importation and graphic manipulation of externally-designed CAD modules as a virtual world into which one or more anthropometrically valid human figures may be placed and animated.

IRIX version compatibility:

# Visual Simulation

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## MAGICS - The ECMWF Graphics Package

Jens Daabeck  
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European Centre for  
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Shinfield Park  
Reading, Berkshire, RG11  
6AL  
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**011-44-1734-499375**  
**011-44-1734-869450 (fax)**  
**jens.daabeck@ecmwf.int**

The Meteorological Applications Graphics Integrated Color System (MAGICS), developed at the European Centre for Medium-Range Weather Forecasts (ECMWF), is a software system that permits the plotting of contours, satellite images, wind fields, observations, symbols, streamlines, isotachs, axes, graphs, text and legends.

MAGICS was designed to conform to and use meteorological and graphics standards, e.g. GRIB, BUFR, GKS. It makes use of modern contouring methods (CONICON) and enables users to take advantage of color graphics and device independence.

IRIX version compatibility: Pre 5.x

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## MODARCH

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78286  
France  
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MODARCH is a simulation environment for modeling, design and performance evaluation of distributed computer systems.

MODARCH is an easy-to-use tool allowing to interactively describe software and hardware models, automatically run simulations, make interactive results representations, graphically animate models and automatically generate study reports.

The power of MODARCH resides in its ability to allow to separately model software applications and computer configurations. Evaluation of an application's behavior can be done for several possible hardware configurations and different software applications can be evaluated on one particular hardware architecture by simply mapping software tasks onto the related hardware components. It allows optimizing computer systems by giving the best adaptation between software and hardware for a given application. MODARCH is particularly suited for studying computer systems such as distributed database, client/server architectures, multiprocessor architectures, applications distributed on a network of workstations, manufacturing local networks, etc.

IRIX version compatibility:

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## MODLINE

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78286  
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MODLINE is comprehensive open environment for modeling, design and performance evaluation of discrete event systems.

MODLINE is an easy-to-use tool allowing to interactively describe hierarchical models, automatically run simulations, make interactive results representations, graphically animate models and automatically generate study reports.

MODLINE includes the most efficient modeling and simulation methods as well as advanced software engineering concepts: object oriented design, graphical programming.

MODLINE provides numerous statistical estimation methods and results output: min/max, mean, variance, confidence interval of response time, service time, busy percentage, throughput, number of customers and many others.

IRIX version compatibility:

# Visual Simulation

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## MicroStation Masterpiece™

Sales Department  
Bentley Systems, Inc.  
690 Pennsylvania Drive  
Exton, PA 19341-1136  
USA

**800-778-4274**

**610-458-1060 (fax)**

**family@bentley.com**

**<http://www.bentley.com/>**

MicroStation Masterpiece™ provides spectacular photorealistic renderings of 3D models created with MicroStation®. Complex scenes can be ray-traced simply and quickly without having to leave the MicroStation CAD environment. With MicroStation Masterpiece, true transparency, reflections, refraction, and colored shadows all combine with MicroStation's modeling tools to allow you to interactively model and render your designs.

MicroStation Animation Producer provides a powerful set of intuitive tools for specifying and recording the movement of design file geometry. It combines the most basic animation technique, keyframing, with hierarchical and parametric motion control. This hybrid approach allows you to decide which method is most suitable or to combine techniques to easily produce animation that would be extremely difficult with either method alone.

IRIX version compatibility:

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## Mission Simulator System

David Flanagan  
VP, Technical Operations  
CTA, Inc.  
7315 East Orchard Road  
Greenwood Village, CO  
80111  
USA

**303-889-1212**

**303-889-1210 (fax)**

**dflanagan@ctasim.com**

**<http://www.ctasim.com>**

The Mission Simulator System is a real-time, reconfigurable, man-in-the-loop simulator for commercial and military aircraft and other vehicles. Developed in 1988, MSS is in use today as the core component of realistic flight training devices and as a prototyping tool used to explore aircraft, cockpit, C3I, and avionics system designs. MSS provides a synthetic database environment, sensor and weapon simulations, and interactive computer controlled players. MSS consists of one or more interactive pilot/system operator workstations and an instructor operator workstation. MSS can be used with or without CTA's part task and flight training cockpits.

IRIX version compatibility:

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## ModelGen™

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550 South Winchester Blvd.  
Suite 500  
San Jose, CA 95128  
USA

**408-261-4100**

**408-261-4101 (fax)**

**cchristian@multigen.com**

**<http://www.multigen.com/>**

ModelGen™ is a 3-D database modeling system designed for lower cost real-time simulations. ModelGen2 lets users generate 3-D, fully-textured polygonal databases optimized for real-time applications. Modelers can define, test, and edit behaviors and sound textures; it also includes AutoCAD .DFX import facility. Applications for ModelGen2 include visual simulation, location-based entertainment, CAD visualization, virtual reality, and architectural walkthrough. ModelGen allows users to dramatically increase the performance and visual quality of visual applications while at the same time reducing development time and costs.

IRIX version compatibility: 5.3

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## ModelGen2™

Cindi Christian  
MultiGen, Inc.  
550 South Winchester Blvd.  
Suite 500  
San Jose, CA 95128  
USA

**408-261-4100**

**408-261-4101 (fax)**

**cchristian@multigen.com**

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ModelGen2 is a cost-effective descendent of the MultiGen® modeling system for use on the Silicon Graphics® workstations. Target applications include virtual reality, entertainment, CAD and visual simulation applications not requiring military-type terrain processing or large-scale production capabilities.

IRIX version compatibility: 5.3

# Visual Simulation

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## MultiGen® II

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550 South Winchester Blvd.  
Suite 500  
San Jose, CA 95128  
USA  
**408-261-4100**  
**408-261-4101 (fax)**  
**cshaban@multigen.com**  
**<http://www.multigen.com/>**

MultiGen II is leading realtime 3D authoring software for creating, editing, and viewing small and medium-scale visual databases for simulation applications that require sophisticated 3D modeling technology. MultiGen II runs on all Silicon Graphics® platforms and several image generators. MultiGen II offers realtime 3D applications designers advanced realtime functions like Level of Detail, Culling Volumes, Logical Culling, Drawing Priority, and Separating Planes. MultiGen II also offers a series of fully integrated advanced options that provide the capability to create photo-textured 3D objects, extensive real world terrain, roads conforming to civil engineering rules, fully interactive instrumentation displays, articulated behavior attributes and assignable 3D audio effects.

IRIX version compatibility: 5.3

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## MultiGen® II Pro

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**408-261-4101 (fax)**  
**cshaban@multigen.com**  
**<http://www.multigen.com/>**

MultiGen II Pro is advanced realtime 3D authoring software for creating, editing, and viewing large-scale visual databases for simulation applications that require sophisticated 3D modeling technology. MultiGen II Pro runs on all Silicon Graphics® platforms and supports several leading image generators.

MultiGen II Pro (formerly MultiGen Flight®) offers product enhancements in usability, architecture, and functionality to provide the highest modeling productivity available for interactive realtime 3D applications, while its X-Motif-Based Interface makes it easy to learn and use.

MultiGen II Pro also offers a series of fully integrated advanced options so the user can configure the maximum solution for specialized realtime 3D modeling tasks.

IRIX version compatibility: 5.3

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## OOM, Object Orientation Manipulator, Version 6.1

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382 East Broad Street  
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**service@cosmic.uga.edu**  
**<http://www.cosmic.uga.edu/pub/SGI.html>**

OOM, The Object Orientation Manipulator, is an application program for creating, rendering, and recording three-dimensional computer-generated still and animated images. This is done using geometrically defined 3D models, cameras, and light sources, referred to collectively as animation elements. OOM does not provide the tools necessary to construct 3D models; instead, it imports binary format model files generated by the Solid Surface Modeler (SSM). Model files stored in other formats must be converted to the SSM binary format before they can be used in OOM. Among OOM's features are collision detection (with visual and audio feedback), the capability to define and manipulate hierarchical relationships between animation elements, stereographic display, and ray-traced rendering. OOM uses Euler angle transformations for calculating the results of translation and rotation operations.

OOM is written in C-language for implementation on SGI IRIS 4D series workstations running IRIX 4.0.5.A. Minimum of 8Mb of RAM is recommended.

IRIX version compatibility:

# Visual Simulation

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## Omni

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Colorado Springs, CO  
80910  
USA  
**719-637-8332**  
**719-637-8535 (fax)**  
**<http://www.autometric.com>**

Omni is an interactive 2-D and 3-D simulation, modeling, and visualization application. Omni enables users to visualize results of complex simulations involving spatial relationships between satellites, aircraft, ground sites, and missiles within a 3-D whole-earth environment. Omni's X/Motif user interface allows for display of diverse information in pictures, graphs, animated view sequences, and text. Omni's Socket Interface option enables information between Omni and external applications to be exchanged. The Imagery/Terrain Option provides for the display of Wings™ scenery files.

Omni runs on all of the Silicon Graphics workstations.

IRIX version compatibility:

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## OpenGL for Apple Power Mac

Robert Weidman  
Vice President, Marketin  
Template Graphics  
Software, Inc.  
9920 Pacific Heights Blvd.  
Suite 200  
San Diego, CA 92121-4331  
USA  
**619-457-5359**  
**619-452-2547 (fax)**  
**<http://www.sd.tgs.com/~template>**

Template Graphics Software is Apple Computer's selected 3rd-party supplier of OpenGL products and technology for the power Mac platform. OpenGL for Power Mac is 100% conformant with the OpenGL ARB Conformance Test Suite. TGS has integrated support for the Apple QuickDraw3D and PCI-bus acceleration products.

TGS also offers Open Inventor for Apple Power Mac.

IRIX version compatibility: Pre 5.x

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## OpenGL for Solaris

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Specialist  
Template Graphics  
Software, Inc.  
9920 Pacific Heights Blvd.  
Suite 200  
San Diego, CA 92121-4331  
USA  
**619-457-5359**  
**619-452-2547 (fax)**  
**[info@tgs.com](mailto:info@tgs.com)**  
**<http://www.sd.tgs.com/~template>**

OpenGL for Solaris is a direct descendant of Silicon Graphics' IRIS Graphics Library (IRIS GL). OpenGL provides a wide range of graphics features for hardware, window and operating system independence. OpenGL gives software developers 3-D graphic capabilities for rendering simple geometrics to complex NURB curved surfaces. Features include viewing and modeling transformation, hidden surface removal, lighting and shading, alpha-bending, anti-aliasing, atmospheric effects and texture-mapping of geometric objects. Other features include display list or immediate mode, feedback and selection, accumulation buffer, true or pseudo color, and stencil planes. OpenGL for Solaris is optimized for the SPARC architecture and Sun's accelerated frame buffers.

IRIX version compatibility: Pre 5.x

# Visual Simulation

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## PLOT3D/TURB3D

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**706-542-3265**  
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**http://www.cosmic.uga.edu/pub/SGL.html**

PLOT3D is an interactive graphics program designed to help scientists visualize computational fluid dynamics (CFD) grids and solutions.

TURB3D is a modification of PLOT3D that is used for simulations of incompressible turbulent flow. Input flow data consists of pressure, velocity, and vorticity. Typical quantities to plot include local fluctuations in flow quantities and turbulent production terms, plotted in physical or wall units. PLOT3D/TURB3D includes both programs because the operation of TURB3D is identical to PLOT3D, and there is no additional sample data or printed documentation for TURB3D. Implemented on IRIS 2xxx/3xxx and 4-D workstations. See also FAST, ARC-13316.

IRIX version compatibility:

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## PPS™

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Director General  
V.S.M.  
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Pelissane, 13330  
France  
**33-90-55-06-25**  
**33-90-55-32-46 (fax)**

The PPS™ is an aircraft trainer used in operational units and in flight test centers, either stand alone or networked with other simulators. It allows to face all possible operational missions.

Cockpit instruments can be represented as synthetic images displayed on touch screens, or composed of ergonomical replicas of onboard equipments. A synthetic landscape, reconstituted from standardized data bases, and integrating ground or air targets and head up display, is projected beyond the cockpit. System architecture is based on Onyx and Indigo2. The PPS™ is the basic model in VSM's range of products, and represents the optimum cost effective solution.

IRIX version compatibility:

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## PUSH™

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Fakespace, Inc.  
241 Polaris Avenue  
Mountain View, CA 94043  
USA  
**415-688-1940**  
**415-688-1949 (fax)**  
**fakespce@well.sf.ca.us**  
**http://www.fakespace.com/**

This rugged and lower cost version of the popular BOOM3C® is designed for desktop use by engineers and designers. It allows the user to intuitively navigate through a virtual environment without getting out of your chair.

IRIX version compatibility:

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## PowerScene

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USA  
**703-790-0505**  
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**hickey@cambridge.com**

PowerScene applies highly-evolved virtual reality and database management techniques to advanced image exploitation.

PowerScene renders real-time, perspective views using actual terrain imagery (e.g. SPOT, LANDSAT, ADRI, CIB) and digital terrain elevation models (e.g. DTED, DEM), with dynamic and static models of man-made objects and cultural features. These functions along with leading-edge capabilities for data fusion have many applications including: military intelligence, analysis, mission preview, planning, rehearsal, and training.

PowerScene has been integrated with numerous existing simulators, simulation networks and display devices. Because its power is scaleable and flexible, PowerScene can meet many varied requirements.

IRIX version compatibility: 5.3

# Visual Simulation

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## Real-World

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Auto-Soft Corporation  
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USA  
**801-322-2069**  
**801-322-1846 (fax)**  
**00000**

Real-World is an externally controlled real-time three dimensional animation material handling and processing system. Real-World provides an accurate environment for thoroughly testing complicated factory control systems. A variety of communication options are available to allow Real-World to connect to the control system in a manner identical to the real factory equipment.

IRIX version compatibility:

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## Reality™

Alan Yates  
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Integra Australia Pty Ltd  
Innovation House  
Technology Park  
Adelaide, S. 5095  
Australia  
**08-260-8972**  
**08-349-6566 (fax)**  
**alan@integra.com.au**

Reality+™ is a Virtual Reality (VR) application programming interface (API) and a graphical user interface (GUI). The API extends the functionality of WorldToolKit™ from Sense8 by providing an additional 350 functions, making it the most comprehensive and cost-effective VR software tool in its class. It is an essential tool for developing VR applications through use of the GUI to prototype VR worlds which can then be incorporated into applications built on the API. Available on other platforms-contact Integra.

IRIX version compatibility:

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## Reference Calibrator™

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Barco Graphics, Inc.  
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Vandalia, OH 45377  
USA  
**404-590-7900**  
**404-590-8042 (fax)**

The Reference Calibrator™ monitor provides designers and prepress people with an accurate color reference for their workdesks. It features continuous autocalibration and provides user-friendly recalibration and even-color measurement. The Reference Calibrator synchronizes automatically onto whatever source is connected.

IRIX version compatibility:

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## RoboVision™

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Boulder, CO 80301  
USA  
**303-444-0094**  
**303-444-0470 (fax)**  
**info@vexcel.com**  
**http://vexcel.com**

RoboVision™ software provides a graphic toolkit for use in the development, evaluation and application of robot vision systems. Precise, quantitative sensor modeling enables the construction of accurate 3-D graphic models from robot sensor data. Simulation capabilities allow analysis of "what if" scenarios while environment reconstruction capabilities create accurate graphic models. The RoboVision™ system is applicable to the entire robot vision system life cycle from simulation of proposed sensor designs and analysis of algorithm selections to processing data acquired by actual operating robots. RoboVision™ system provides simulation, analysis and graphic modeling capabilities which support robot task planning operations and sensor design activities.

IRIX version compatibility:

# Visual Simulation

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## SDI Animator

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Simulation Dynamics, Inc.  
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48236  
USA  
**313-881-0600**  
**313-881-8203 (fax)**  
**mark@simdyn.com**

SDI Animator brings high-end, 3-D scientific visualization to the desktop with blazing speed and dynamic controls. Animator is a flexible program that lets you merge dynamic data from diverse sources and create complex scenes. Animator's power helps you understand more multi-disciplinary data in less time.

Animator combines high-speed, interactive animation with advanced features previously only found in slower and more expensive software. Animator frees analysts trapped between slow, single-purpose post-processors and the time-consuming video tape requirements of high-end visualization software.

Animator is accessible from Rasna's MECHANICA® menu to provide high-end animators for both MOTION® and STRUCTURE®. Animator also reads data from ADAMS® plus test data.

IRIX version compatibility: Pre 5.x

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## SEE-BED™

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Sirius Solutions Limited  
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Suite 215  
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Canada  
**902-465-2328**  
**902-464-0931 (fax)**  
**800-500-4775 (tollfree)**  
**stefan@sirius.ns.ca**  
**http://www.sirius.ns.ca**

SEE-BED™ is a multidimensional, interactive data visualization and editing tool for hydrographic data.

SEE-BED allows the user to visualize geo-coded bathymetric data sets in a variety of ways from any point in space. Individual point data may be viewed and edited according to user defined attributes such as depth or depth range. Statistical rendering of data is also available while maintaining a true 3-dimensional, interactive perspective. Data editing features are in complete control of the user. The software is quickly and intuitively driven by the use of a mouse and graphical user interface.

IRIX version compatibility: 5.3

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## SENSOR TRAINING SYSTEMS

Sharron Lifshitz  
Deputy Dir., Marketing  
B.V.R. Technologies, Ltd.  
1 Korazin Street  
Givatayim, 53583  
Israel  
**972-3-571-5671**  
**972-3-571-5668 (fax)**  
**lifshitz@bvr.co.il**

Training with smart guided weapon systems has been limited to training facilities incorporating sand-box terrain models combined with a mechanically driven TV camera. Such systems lack terrain versatility and actual mission practice capabilities. Solutions for simulators based upon real photographic terrain data have been extremely costly.

B.V.R. has applied its unique simulation approach to sensor training simulators. This has resulted in an affordable near-to-real-life quality imaging system enabling smart weapon operator squadron level training. B.V.R. engineers and programmers have applied a breakthrough technology (patents pending) allowing weapon operators to train on actual terrain imagery, providing specific mission rehearsal.

IRIX version compatibility:



# Visual Simulation

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## SHO-FLO

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Creative Visual Software,  
Inc.  
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Evanston, IL 60204  
USA  
**408-252-0458**  
**310-212-5046 (fax)**

SHO-FLO is a 3-D interactive scientific visualization program analyzing finite element/finite difference or experimental data. Release 3.0 contains contouring, pseudocoloring, isosurface, vector and tracer particle tools and employs a MOTIF user-interface. Plot-Ed structured or unstructured data from FEM is imported along with 3-D bodies and rendered in real-time as the user travels through the field data. SHO-FLO serves as a post-processor to the NEWTUN CFD program and has been used for visualization of structures, turbulence data and aerodynamic simulation solutions.

IRIX version compatibility:

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## SIMULINK®

Enza Froio  
Marketing  
The MathWorks, Inc.  
24 Prime Park Way  
Natick, MA 01760-1500  
USA  
**508-647-7000**  
**508-653-2997 (fax)**  
**efroio@mathworks.com**  
**<http://www.mathworks.com/>**

SIMULINK® is a powerful, interactive software package for modeling, analyzing, and simulating dynamic nonlinear systems. SIMULINK employs a graphical, mouse-driven interface based on X Windows, Microsoft Windows, and Macintosh windowing systems. System models can be defined either as block-diagram structures or by sets of differential equations. SIMULINK supports linear, nonlinear, continuous-time, discrete-time, multi-variable, multirate, and hybrid systems. Fully integrated with the MATLAB numeric computation software environment and the MATLAB application toolboxes, SIMULINK is well-suited to solving a broad range of system simulation problems.

IRIX version compatibility:

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## SIMULINK® DSP BLOCKSET

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The SIMULINK® DSP Blockset provides interactive graphical simulation of DSP algorithms to facilitate rapid design of DSP-based devices. The DSP Blockset's graphical programming environment makes it easier for engineers to create, document, and modify DSP designs. The blockset contains over 100 blocks for signal processing, complex and vector math, and signal generation and display. It builds upon the advanced algorithm development capabilities of MATHLAB to help engineers easily explore new algorithms and immediately simulate their behavior. The optional Real-Time Workshop generates ANSI standard C code from SIMULINK block diagrams for prototyping and implementation on programmable floating-point DSP hardware.

IRIX version compatibility:

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## SSM - Solid Surface Model Builder

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USA  
**706-542-3265**  
**706-542-4807 (fax)**  
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**<http://www.cosmic.uga.edu/pub/SGI.html>**

SSM, Solid Surface Model Builder, is used to generate 3-D geometric models. SSM is currently used by NASA-JSC, government contractors, and other NASA sites to build payload models, space station models, and models of conceptual designs. These models are then used in animation and visual analysis. SSM incorporates a wide variety of primitive shapes that can be combined to create detailed models. SSM also includes a constructive solid geometry function to create higher levels of detail. SSM can be used by almost any area that has a requirement to create polygonal models. Source code is included. Successfully implemented under iRIX 4.0.5. Also see OOM (Object Oriented Manipulator).

IRIX version compatibility:

# Visual Simulation

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## STAGE (Scenario Toolkit and Generation Environment)

Sid Svorscek  
Development Engineer  
Virtual Prototypes, Inc.  
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Suite 300  
Montreal, PQ H4P 1T7  
Canada  
**800-361-6424**  
**514-341-8018 (fax)**  
**sid@virtualprototypes.ca**  
**http://www.**  
**virtualprototypes.ca**

STAGE is a software toolset for synthetic environment generation that facilitates the development of training systems and distributed simulator environments. STAGE allows users to quickly prototype a simulation environment and then integrate high fidelity simulations of equipment subsystems to test the effectiveness of different equipment concepts with existing or new tactical doctrine from procedure to team training, and for console HMI validation. STAGE is extremely flexible in configuration, operation, and functionality and STAGE is flexible, commercial-off-the-shelf (COTS) development environment to facilitate the creation of aerospace and defense simulation and training applications. STAGE is used by a broad base of applications developers and engineers to create engineering simulators to model, simulate and prototype operational systems. It is a proven product which has been successfully used to integrate simulators for a wide variety of military and aerospace applications, including the training of naval tactical teams, on-board systems operators and electronic warfare teams.

IRIX version compatibility:

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## SURF - Surface Shading Program

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Athens, GA 30602  
USA  
**706-542-3265**  
**706-542-4807 (fax)**  
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**http://www.cosmic.uga.**  
**edu/pub/SGL.html**

SURF, the Surface Shading Program, is developed in support of the work of Computational Fluid Dynamics (CFD) scientists at NASA Ames Research Center. SURF's mouse-driven menu interface allows the user to create models consisting of a mixture of different types of parts (including Gouraud and smooth-shaded function mapped parts) that can be interactively viewed, deleted, or output to ARCGRAPH files. Source code is included. Developed for IRIS 2xxx/3xxx in 1988. Ported to IRIS 4-D in 1991. See also FAST, Flow Analysis Software Toolkit (ARC-13316).

IRIX version compatibility:

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## Satellite Tool Kit™ (STK™)

Donna Milewski  
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Analytical Graphics, Inc.  
660 American Avenue  
King of Prussia, PA 19406  
USA  
**610-337-3055**  
**610-337-3058 (fax)**  
**donna@stk.com**  
**http://www.stk.com**

Satellite Tool Kit (STK) significantly enhances a user's ability to perform aerospace system analysis. STK includes tools to generate, display, and perform detailed analysis of ground stations, satellites, aircraft, ships, ballistic missiles, and terrestrial objects. Data is generated using Two-Body Keplerian, Space Command MSGP4 (which accepts 2-line mean element sets), or ballistic launch propagators. STK also allows the user to import custom-generated data in simple-to-use format. Users can calculate constrained or unconstrained access periods, azimuth, elevation, and range values; graphically display ground tracks, swath, and field-of-view limits; use antenna and sensor tools to observe sensor availability and coverage effectiveness; perform link closure analysis; and select between a dozen different map projections.

IRIX version compatibility: Pre 5.x

# Visual Simulation

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## Satellite Tool Kit/Visualization Option (STK/VO)<sup>™</sup>

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660 American Avenue  
King of Prussia, PA 19406  
USA  
**610-337-3055**  
**610-337-3058 (fax)**  
**donna@stk.com**  
**http://www.stk.com**

STK/VO fulfills your requirements for a 3D, time-driven presentation and constellation analysis environment. The VO is tightly coupled with STK allowing the user to view the satellite, facilities, targets and sensors already created without starting from scratch for a 3D project. The environment enables the study of animated space systems and constellations, including planetary, air, space, and ground vehicle relationships. Real-time program inputs can be used to display operational activities. STK users can leverage their current knowledge of STK and need only learn the new 3D features to use this powerful option.

IRIX version compatibility: Pre 5.x

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## Satellite-Based Air Traffic Management Accuracy Performance Model (SAPM)

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Rockwell International  
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S 460-520  
Richardson, TX 75082  
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**214-705-1714**  
**214-705-3043 (fax)**  
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**rockwell.com**

SAPM visually models the accuracy and availability of navigation information over any defined air traffic management service volume using GPS and geosynchronous satellite services. This tool is used for architectural development of GPS Augmentation Systems, a service Rockwell markets internationally.

IRIX version compatibility:

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## SensorVision<sup>™</sup>

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Photon Simulations, Inc.  
5720 Oberlin Drive  
San Diego, CA 92121  
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**619-597-3020**  
**619-455-0658 (fax)**  
**jrj@photon.com**  
**http://www.photon.com**

SensorVision<sup>™</sup> is a quantitative image rendering software system for computing, in real-time, sensor views of visual simulations. It is a physics-based software module for Dallas-based Paradigm Simulation's product, Vega<sup>™</sup>. SensorVision creates sensor views for user-selected spectral filters, from the visible through the far infrared, in varying weather, at any earth surface location, date and time of day. It is often used for real-time infrared sensor views such as those found in military applications.

IRIX version compatibility: Pre 5.x

# Visual Simulation

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## Sterling FASTdrivers™

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USA  
**415-802-7100**  
**415-802-7162 (fax)**  
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Sterling FASTdrivers™ is a highly optimized library which enables the NASA Flow Analysis Software Toolkit (FAST) to operate under AIX on IBM RISC System/6000 and the Hewlett Packard 9000 series workstations. The Sterling FASTdrivers™ package is installed with the FAST standard distribution from NASA or COSMIC, using makefiles and shell script files provided by Sterling. FAST is a modular analysis and visualization tool developed by Sterling Software under contract to NASA. It is commonly used with grids and data generated by finite-difference, finite-element and other analytical methods. FAST is one of the most widely used systems in the United States for visualization of fluid flow and similar types of grid-oriented 3-D data. As distributed by NASA or COSMIC, FAST can operate only on a limited set of workstations and does not operate on the RS/6000, or the Hewlett Packard 9000 series workstations. When the Sterling FASTdrivers™ are installed with FAST on your IBM RS/6000, or the Hewlett Packard 9000 series workstations, FAST is adapted to and optimized for the RS/6000 and HP.

IRIX version compatibility: Pre 5.x

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## Sterling SSV™

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**wanda\_pfaller@sterling.com**

Sterling SSV™ is an easy-to-use, general purpose scientific and engineering visualization tool (with roots in fluid dynamics) that handles both finite difference and finite element type gridded data sets. It is optimal for visualization of fluid dynamics data since it computes particle traces and other CFD parameters internally.

Sterling SSV provides a fully interactive 3D environment. It includes scalar and vector data computation, function-mapping and rendering, particle tracing, and cutting planes. Sterling SSV provides interactive lighting and color map manipulation, shading, titling, real-time rendering, and animation. It is fully scripted and compatible with FAST/PLOT3D.

IRIX version compatibility: Pre 5.x

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## TI S1000 Loader

John Powers  
Texas Instruments Inc  
3700 Preston Road  
Suite 334  
Plano, TX 75093  
USA  
**214-575-7591**  
**214-575-6771 (fax)**  
**jpowers@lluvatar.dseg.ti.com**  
**http://www.ti.com**

The TI S1000 Loader reads S1000 (SIMNET) databases and builds a scene graph for use in visual simulation applications built on top of SGI's Performer. It correctly handles layered geometry, multiple levels of detail, LOD range data, textures, colors, vegetation and cultural feature models. An additional features gives the user the flexibility to do global substitution for textures and cultural models through a simple ascii file format specification. This S1000 database loader makes the significant library of S1000 databases available to the defense simulation community on SGI platforms.

IRIX version compatibility:

# Visual Simulation

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## TRAXX™

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OriginalSim Inc.  
5524 rue St-Patrick  
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Montreal, QU H4E 1A8  
Canada  
**514-766-8868**  
**514-766-8861 (fax)**  
**fszeto@originalsim.com**  
**<http://www.originalsim.com>**

TRAXX™, the next generation tool for developing simulation and distributed multimedia synthetic environments. An innovative object oriented application framework, TRAXX shatters the historically rigid barrier imposed by traditional top-down design and bottom-up implementation approaches by supporting a flexible, object oriented requirements analysis and incremental design methodology. A domain expert can initially implement a cross-section of the problem space, continuously build upon it in an iterative process, while ensuring that the design addresses the initial requirements.

TRAXX is fully distributed, incorporating a multimedia user interface for modeling, authoring, control and analysis. Applications include comprehensive scenario modeling, training, planning and synthetic environments.

IRIX version compatibility:

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## TT-150 Truck Driving Simulator

Alan Jordan  
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FAAC, Incorporated  
825 Victors Way  
Ann Arbor, MI 48108  
USA  
**313-761-5836**  
**313-761-5368 (fax)**  
**ajordan@faac.com**  
**<http://www.msen.com/~faac>**

The TT-150 is a fully interactive simulator designed to train truck drivers in basic maneuvering skills as well as decision making in potentially dangerous situations. The TT-150 provides 180 degrees of forward view to the driver as well as rear view mirrors on right and left. Truck dynamics are accurately modeled for a variety of truck and trailer types. 85 miles of roads are available, including city areas, country roads, freeways, hilly regions, and unfinished road surfaces. One of the major features of the TT-150 is the world's most sophisticated intelligent traffic. Up to 25 vehicles in the nearby area interact realistically with the student. The TT-150 is currently used by the U.S. Army, Department of Energy, and many commercial customers.

IRIX version compatibility:

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## TacTools™

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Xtensory, Inc.  
140 Sunridge Drive  
Scotts Valley, CA 95066  
USA  
**408-439-0600**  
**408-439-8845 (fax)**  
**cutt@netcom.com**  
**<http://www.xtensory.com>**

TacTools™ is a tactile feedback system that easily attaches to any application that requires tactile feedback. It provides the application with the ability to transmit tactile sensations to the user with a controller and tiny (2 mm) tactors. The tactors are individually controlled, and complex tactile patterns can be transmitted through the use of arrays of tactors. Applications of TacTools include the ability to touch objects within virtual worlds, such as playing virtual musical instruments.

IRIX version compatibility: Pre 5.x

# Visual Simulation

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## Tecplot®

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Amtec Engineering, Inc.  
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Bellevue, WA 98004  
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**206-827-3304**  
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**http://www.Amtec.com**

Tecplot® Version 6.0 is a versatile data visualization and technical plotting software package for scientists and engineers. It is interactive, doesn't require programming, and allows easy creation of XY, contour, vector, mesh, and surface plots in 2D and general multiple 3D surfaces. An optional extension called 3DV adds the capability to visualize volumetric data as iso-surfaces, 3D streamlines, selected IJK-planes, and arbitrary data slices.

Tecplot doesn't impose a rectangular structure to your data. It allows visualization of data in whatever grid structures exist including multi-block 2D/3D curvilinear, random points, and various finite-element types.

Easily create multiple, overlaying plots quickly and output them as presentation quantity PostScript® files.

IRIX version compatibility:

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## The Intelligent Merchandiser

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Design Vision Inc.  
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Toronto, ON M5H 1N1  
Canada  
**416-585-2020**  
**416-585-2389 (fax)**  
**dvi@io.org**

The Intelligent Merchandiser is a suite of tools for use by a variety of people in various management and operational capacities in retailing organizations. This suite of products transforms complex information and data environments into more meaningful 3-D visual analogues that make it easier for people to access, analyse, understand and make decisions about the retailing business.

IRIX version compatibility: Pre 5.x

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## The NPSNET Visual Simulation System

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Naval Postgraduate School  
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Science  
Code CS/ZK  
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USA  
**408-656-2305**  
**408-656-4083 (fax)**  
**http://www-npsnet.cs.nps.navy.mil/npsnet/**

NPSNET Visual Simulation System is a large-scale, DIS-compliant networked visual simulator written using the SGI Performer visual simulation toolkit and C++. NPSNET runs on Reality Engine class machines. NPSNET reads Multigen Flight formatted databases. NPSNET is public domain source code, i.e. the full source is available via anonymous ftp from the following site:

<http://www.cs.nps.navy.mil/research/npsnet/distribution/page.html>

Paper describing NPSNET and its abilities are also available on the web:

[ftp://taurus.cs.nps.navy.mil/pub/NPSNET\\_MOSAIC/npsnet\\_mosaic.html](ftp://taurus.cs.nps.navy.mil/pub/NPSNET_MOSAIC/npsnet_mosaic.html)

NPSNET is currently being utilized by over 100 DoD agencies and contractors. The software is configuration managed and documented in support of our external user community.

IRIX version compatibility:

# Visual Simulation

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## The VisionDome™

Ray Idaszak  
CTO  
Alternate Realities  
Corporation  
215 Southport Drive  
Suite 1300  
Morrisville, NC 27560  
USA  
**919-467-6200**  
**919-467-5057 (fax)**  
**rayi@virtual-reality.com**  
**<http://www.virtual-reality.com/>**

The VisionDome™ is the first portable 3D virtual reality environment that allows 10 or more people to experience interactive VR without restrictive head-mounted displays or goggles. Developed and manufactured by Alternate Realities Corporation, the VisionDome is offered in 5 meter and 7 meter diameter tilted-dome orientations in portable and semi-permanent configurations. In partnership with several multi-national technology companies, the VisionDome is being marketed for applications in civil engineering, defense, aerospace, automotive, event marketing, and other industry sectors that can benefit from its unique features for collaborative virtual reality.

IRIX version compatibility: 6.2

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## TurbuSyn®: System for Designing Turbulent Gaseous Flow

Georgios Sakas  
Dr.-Ing.  
Fraunhofer Institute for  
Computer Graphics  
Wilhelminenstrasse 7  
D-64283 Darmstadt,  
Germany  
**011-49-6151-155-153**  
**011-49-6151-155-199 (fax)**

Turbulence Synthesizer (TurbuSyn®) enables the interactive design of a turbulent gas motion and provides an intermediate feedback. Quasi-real time rates of several pictures per second can be calculated. Using a small and intuitive parameter set, users can design their "personal" gas turbulence (for example, moving clouds of fog, rising smoke, or dust). Users can see the effect of a parameter variation on the turbulence appearance and adjust the parameter accordingly.

Users of TurbuSyn are primarily computer animators and designers. Aside from computer animation for films, videos, logos, commercials, etc., possible application areas also include simulation and training systems.

IRIX version compatibility: Pre 5.x

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## UIM/XMove™

Julia K. Miller  
Business Development  
Black & White Software,  
Inc.  
1901 S. Bascom Avenue  
Suite 700  
Campbell, CA 95008  
USA  
**408-369-7409**  
**408-369-7406 (fax)**  
**julia@blackwhite.com**  
**<http://www.blackwhite.com>**

Black & White Software, Inc. is the leading developer of extended technology for UIM/X™. UIM/XMove™ is a very graphical interface development tool, representing the next step in user interface development. UIM/XMove complines the power of the market-leading Graphical User Interface builder, UIM/X, with the only entirely X Windows based interactive graphical application builder, XMove™. UIM/XMove is the tool you need for the realization of complex and portable visualization solutions. Use UIM/S to lay out the menus, buttons, dialog boxes, and windows for your application, including XMove widgets for your XMove graphics. Then use the integrated XMove editors to build your XMove graphics. Finally, from within UIM/XMove, add behavior to animate and control your XMove graphics.

IRIX version compatibility:

# Visual Simulation

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## VAPS®

Sid Svorscek  
Development Engineer  
Virtual Prototypes, Inc.  
4700 de la Savane  
Suite 300  
Montreal, PQ H4P 1T7  
Canada  
**800-361-6424**  
**514-341-8018 (fax)**  
**sid@virtualprototypes.ca**  
**http://www.**  
**virtualprototypes.ca**

VAPS - is a suite of tools for building Human-Machine Interfaces for real-time, interactive, graphical, data driven applications. HMIs built with VAPS are truly visual in nature and allow the interaction with the user's application to occur via graphical representations of real-world objects. The development of an HMI is done graphically with a set of powerful editors supporting an object-oriented development approach. This allows users to intuitively draw objects, specify data driven animation, connect displays to application data, and specify event/response behaviour. Applications are executed in either interpreted mode (VAPS/Runtime) for testing and simulation, or compiled mode (VAPS/CCG) for workstation based or embedded systems. VAPS 3.2 runs on SGI, Sun, HP and IBM workstations and is priced from US \$9,500 to \$41,500. In 1991, VAPS received the "Best Graphics Software Product of the Year" award from IEEE Computer Graphics and Applications. VAPS is used in: • Aerospace and Defense (Avionics, ATC, C3I) • Transportation (IVHS, Automotive, Dispatch) • Network Management (Energy, Communications) • Instrumentation (Medical, Distribution) • Process Control (Manufacturing, Distribution)

IRIX version compatibility:

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## VISIG©

William Cornette  
Senior Staff Scientist  
Photon Research Associates,  
Inc.  
5720 Oberlin Drive  
San Diego, CA 92121  
USA  
**619-455-9741**  
**619-455-0658 (fax)**  
**wmc@photon.com**  
**http://www.photon.com**

VISIG© is a tool for calculating and visualizing the radiance of solid bodies in space. It produces time varying radiance maps. Object radiance is calculated at the user-specified wavelengths as the sum of the components due to self-emission and reflected sunshine and earthshine. VISIG is used by the defense community to estimate the brightness of spaceborne objects to aid in the design of sensors and algorithms for tracking and discrimination. VISIG uses Graphics Library routines to project the object from a sensor perspective and to remove hidden surfaces. The system on which VISIG runs should have 24 bits of RGB and a z-buffer. VISIG is currently at version 3.0 with version 4.0 due by August 1994.

IRIX version compatibility:

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## VISTAWORKS™

Leo Salemann  
Product Engineer  
Lockheed Martin ADS  
13810 SE Eastgate Way  
Suite 500  
Bellevue, WA 98005  
USA  
**206-957-3262**  
**206-746-1335 (fax)**  
**lsaleman@bvulads.loral.**  
**com**

Vistaworks is a full-featured visualization system for distributed simulations. Using the DoD's DIS protocol, Vistaworks provides out-the-window, thermal sensor, and TV views for manned vehicles simulators and stealth observers. Vistaworks is the foundation for cutting edge environmental effects (haze, COMBIC smoke and dust) and dynamic terrain developed for DARPA's Synthetic Environments program. Included is the S1000 Toolset for creation, modeling and editing of terrain databases, ground culture and dynamic models. LADS has been a leader in the terrain database and visual simulation fields for over a decade.

IRIX version compatibility: 5.2, 5.3



# Visual Simulation

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## VISUALIZER™

Marketing Administrator  
Alias Wavefront  
110 Richmond Street East  
Toronto, ON M5C 1P1  
Canada  
**416-362-9181**  
**416-362-0630 (fax)**  
**800-447-2542 (tollfree)**  
<http://www.aw.sgi.com/>

Alias | Wavefront's VISUALIZER™ is a full-featured, workstation-based 3-D animation system for use in engineering visualization applications. With it, you can easily import and accurately represent many types of numerical and geometric data - including output from an extensive list of CAD systems, motion analysis packages and structural analysis simulations. All 3-D modeling, animation and rendering functions are accessed through the Director, an easy-to-use, point-and-click project management interface.

IRIX version compatibility: 5.3

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## Virtual Dome™

David Flood  
Dir., Simulation Technology  
Eidetics International, Inc.  
3415 Lomita Blvd.  
Torrance, CA 90505  
USA  
**310-326-8228**  
**310-326-9358 (fax)**  
[eidetics@cerf.net](mailto:eidetics@cerf.net)

EIDETIC's VIRTUAL DOME™ Display System allows any non-dome, Out-The-Window Simulation Display to provide visual cues when friendly or threat aircraft go beyond the cockpits' limited Field Of View display. This patented display fidelity, including engagements that progress past the BVR phase to the post-merge, close-in combat phase. This system aids in providing the pilot with 360 degrees situational awareness of all aircraft in the battle. This system was developed through a joint partnership with the USAF and is currently in operation on several Air Force Interactive Piloted Combat Stations.

IRIX version compatibility:

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## Virtual Reality Consulting & Application Development

Brett Weichers  
Principal  
Weichers Simulation  
P.O. Box 649  
Half Moon Bay, CA 94019  
USA  
**415-712-9484**  
**415-712-9659 (fax)**  
[tracy@crl.com](mailto:tracy@crl.com)

Virtual Reality application development specializing in advanced simulation and dynamics. Can provide, specify, or recommend turnkey solutions for applications ranging from a VRML presence on the World Wide Web to a fully interactive, networked, multi-participant experience.

IRIX version compatibility:

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## VisionForm™

James Squires  
Technical Director  
Kinetic Visuals, Inc.  
355 Van Ness Avenue  
Suite 200  
Torrance, CA 90501  
USA  
**310-782-1334**  
**310-212-5046 (fax)**  
[jas@kvis.com](mailto:jas@kvis.com)  
<http://www.www-net.com/kvis.html>

VisionForm™ is a menu-driven high speed animation package for the display of vehicle simulation, dynamics analysis, avionics and mechanical design simulations, and the conversion and display of terrain data. VisionForm is now the basis for the first flight simulator used in space.

Complex motions can be prescribed with scripting commands, 3D-curves and hierarchical linked motions, with the display using multiple camera and "auto-tracking."

The optional VOYAGER module animates motion data input from flight or vehicle test results, or customer simulation software. VIRTUAL UNIVERSE prepares DTED and image data for partitioned display.

IRIX version compatibility: Pre 5.x

# Visual Simulation

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## VxDISPLAY™

Ron McCoy  
Marketing Manager  
Vexcel Corporation  
2477 55th Street  
Suite 201  
Boulder, CO 80301  
USA  
**303-444-0094**  
**303-444-0470 (fax)**  
**info@vexcel.com**  
**http://vexcel.com**

VxDISPLAY™ is a software tool designed to speed the screen display of large digital images (e.g., 100meg+ images). VxDISPLAY™ enhances users' ability to scroll freely to view sections of large images by reducing the load on hardware memory. Demands on hardware are reduced since only the portion of the image on the screen displays from 24 bits true color to 1 bit monochrome. VxDISPLAY™ also allows for multiband image display capabilities for added functionality and usability.

IRIX version compatibility: 5.3

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## Wings™

John Kreisa  
Wings Product Manager  
Autometric, Inc.  
5301 Shawnee Road  
Alexandria, VA 22312-2333  
USA  
**703-658-4000**  
**703-658-4401 (fax)**  
**wings@autometric.com**  
**http://www.autometric.com**

Wings™ is an easy-to-use terrain visualization package for a wide range of applications. Images and maps of any size and any resolution may be draped over terrain to display 3-D scenes. Users can interactively move through the environment for an accurate representation of the landscape. An available Programmers Interface option allows the user to inject their own data into the 2-D and 3-D environments whether real or simulated. A DIS option allows for the display of simulation data.

IRIX version compatibility: 5.3

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## XMove™

Julia K. Miller  
Business Development  
Black & White Software,  
Inc.  
1901 S. Bascom Avenue  
Suite 700  
Campbell, CA 95008  
USA  
**408-369-7409**  
**408-369-7406 (fax)**  
**julia@blackwhite.com**  
**http://www.blackwhite.com**

Black & White Software offers a complete family of application development tools. XMove™ is the tool you need for the realization of complex and portable visualization solutions. XMove's powerful editors allow you to easily draw all types of graphics, use gif, bitmap, or dxf (Autocad) pictures as backgrounds, easily build in behavior through the use of meter tables, and modify and control the graphics through the extensive XMove API.

IRIX version compatibility:

# Visual Simulation

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## **XVS-DataShow™**

Paul Cutt  
VP, Engineering  
Xtensory, Inc.  
140 Sunridge Drive  
Scotts Valley, CA 95066  
USA  
**408-439-0600**  
**408-439-8845 (fax)**  
**cutt@netcom.com**  
**<http://www.xtensory.com>**

XVS-DataShow™ is a complete VR package for total virtual reality interaction with professional-grade datasets. Allows powerful control of interactions with data (e.g., manipulation, animation, audio), yet no programming or modifications to the data are necessary since XVS-DataShow is a self-contained system designed for non-programmers. Reads DXV and 3DS data formats; translators are available for other formats such as NFF, Wavefront, etc.

IRIX version compatibility: Pre 5.x

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## **XVS-FlyBy™**

Paul Cutt  
VP, Engineering  
Xtensory, Inc.  
140 Sunridge Drive  
Scotts Valley, CA 95066  
USA  
**408-439-0600**  
**408-439-8845 (fax)**  
**cutt@netcom.com**  
**<http://www.xtensory.com>**

XVS-FlyBy™ is an add-on to SGI's Perfly software package that allows easy-to-do virtual reality flythroughs of professional-grade datasets. No programming or modifications to the DXF data are necessary, since XVS-FlyBy is a self-contained system designed for non-programmers. Includes XVS-Geom and XVS-SyncLink.

IRIX version compatibility: Pre 5.x

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## **XVS-Geom™**

Paul Cutt  
VP, Engineering  
Xtensory, Inc.  
140 Sunridge Drive  
Scotts Valley, CA 95066  
USA  
**408-439-0600**  
**408-439-8845 (fax)**  
**cutt@netcom.com**  
**<http://www.xtensory.com>**

XVS-Geom™ is a high-performance DXF reader designed to ease the importing of DXF data into systems built using SGI's Performer software. It handles more DXF entities than Performer's sample DXF loader, cleans up the 3-D geometry for effective VR display, and allows control of individual blocks and layers for better performance.

IRIX version compatibility: Pre 5.x

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## **XVS-SoundServe™**

Paul Cutt  
VP, Engineering  
Xtensory, Inc.  
140 Sunridge Drive  
Scotts Valley, CA 95066  
USA  
**408-439-0600**  
**408-439-8845 (fax)**  
**cutt@netcom.com**  
**<http://www.xtensory.com>**

XVS-SoundServe™ is a C++ class library that simplifies adding and maintaining virtual reality (VR) audio support. SoundServe allows PCs to be linked to UNIX workstations via an ethernet network using readily available and inexpensive sound synthesis, voice recognition and voice synthesis PC cards. Version 1.1 supports the popular sound cards and 3-D specializers. SoundServe includes a C++ object library, C++ header files, sample C++ application code, and requires IRIX 4.0.5H or later, plus SGI C or C++ 3.0, as well as an IBM-compatible personal computer running DOS 4.1 or later.

IRIX version compatibility: Pre 5.x

# Visual Simulation

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## XVS-SyncLink™

Paul Cutt  
VP, Engineering  
Xtensory, Inc.  
140 Sunridge Drive  
Scotts Valley, CA 95066  
USA  
**408-439-0600**  
**408-439-8845 (fax)**  
**cutt@netcom.com**  
**http://www.xtensory.com**

XVS-SyncLink™ is a standard software interface for virtual reality devices and applications. It simplifies adding and maintaining VR sensor support, and provides coordinate translation automatically between VR devices, 3-D rendering systems, applications and data sets. XVS-SyncLink includes C++ object library, and is compatible with other VR software. SyncLink simplifies application development by providing a standardized and portable object-oriented set of VR device drivers. This lets the developer concentrate on applications rather than the idiosyncracies of each VR device. Supports I/O devices from Ascension, Polhemus, Logitech, Spaceball, Origin Instruments, Virtual Technologies, Immersion and VPL.

IRIX version compatibility: Pre 5.x

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## mental ray™

Silvia Hanko  
Mental Images GmbH &  
Co. KG  
Fasanenstr. 81  
Berlin, 10623  
Germany  
**011-49-30-882-1088**  
**011-49-30-882-5381 (fax)**

mental ray™ generates images of outstanding quality and achieves high performance through the exploitation of parallelism. The software incorporates significant developments such as a novel proprietary parallel rendering algorithm and a distributed database. The message-passing based software is capable of running on single processor workstations and on shared memory parallel platforms, as well as on distributed memory architectures such as networks of workstations and massively parallel supercomputers.

The free-form surface processing and approximation capabilities, and the mathematical accuracy of the software, are superior compared to any competing rendering software products. Version 2.0 of mental ray constitutes the Rendering Component of both Microsoft/SOFTIMAGE® 3D and Dassault Systemes' CATIA®.

IRIX version compatibility: Pre 5.x