

3D VIEW



Your 3D Stereoscopic Resource

December 1996

MOVING FORWARD

Welcome to the first issue of 3Dview — StereoGraphics® Developer Program newsletter. Our ongoing efforts to bring our developers the latest and greatest news and happenings takes a giant step with the advent of this long-needed newsletter. Included in this issue and issues to come are topics we feel will help bring you closer to StereoGraphics and the stereo 3D software development community: Industry trends, SDK and website updates, current press releases and more.

The Developer Program is not just StereoGraphics working with you alone, it is a 750-company repository of knowledge. Share that knowledge and take an

active role. Let us know what you need in terms of product support, marketing communication, web page updates, and newsletter additions.

Please take a moment to email me and let me know what exciting programs you are working on, suggest ideas for the Developer Program, or just introduce yourself – it would be great to hear from you.

Toby D'Elia
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Developer Program Reaches 750 Developers In First

On November 4th, StereoGraphics announced that over 750 software, hardware and content developers have joined the company's SimulEyes™ development program since its inception one year ago. With over 20 compatible titles available by December and many more expected by Q1 1997, the development community has demonstrated overwhelming support for the company's SimulEyes 3D-vision glasses.

“Our questions about being able to easily support SimulEyes in *Shattered Steel* were answered when we discovered how fast we could do it and the amazing quality of the result,” said Greg Zeschuk, Producer of *Shattered Steel* for BioWare. “We feel that it increases the level of realism in *Shattered Steel* to a new level and we're definitely going to be supporting SimulEyes in future BioWare products.”

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SPOTLIGHT:

Students Go for the Gold
Using CrystalEyes

The name Operation Orange seems more synonymous with a covert military operation than with an award winning team of students. But last year this group of 24 from Walnut Hills High School in Cincinnati, OH, placed 3rd in the National Robotics Championship and also received the coveted 1st place Chairman's Award honors in the 1996 For Inspiration and Recognition of Science and Technology (FIRST) competition.

Founded by Dean Kamen, a New Hampshire-based inventor and scientist, FIRST draws teams from all over the country to its national championships. The teams are comprised of professional engineers and middle-school, or high-school kids who, by rule, have only six weeks to design and construct a competition robot.

One addition to the 1996 contest – the Autodesk Judges Award for Excellence in Engineering Creativity and Communication – was also given to the team from Cincinnati. This new award is conferred on the team that most clearly and creatively presents its solution to the competition design problem through its computer model and animation sequence.

This year's group from Walnut Hills is looking to garner 1st place honors in the National Robotics Championship category and the Autodesk Judges Award at FIRST's competition in 1997. What will give them a competitive advantage at this year's animation sub-competition?

"I feel CrystalEyes will give us the edge we need to "wow" the judges in the animation category of the competition,"

CTO'S REPORT**Working Together***Dear Developer,*

StereoGraphics inhabits a unique position in the world of computer graphics: Our products are judged entirely by what you do. We know our hardware is good; it's used by tens of thousands of visualization professionals around the world on workstation platforms, who are looking at computer generated images of DNA, or the wind swirling across an airframe, or galaxies colliding. However, it is the quality of the software you produce that makes our hardware valuable.

In the world of the CrystalEyes®, people are most interested in doing a job. They use our products not to see a more beautiful image, but because they need to see a more useful image — an image that lets them interpret the rich complexities that the computer can present to the human visual system.

In the world of the SimulEyes, people use the product to have fun. It's exciting to see deep into a virtual environment, or to

see things hover out of the screen. For years people have been looking at flat display screens that attempt to portray the three dimensional world, but only stereoscopic displays providing both the left and right images can succeed in creating the ultimate and most convincing illusion of the visual world.

Having made the world's best electronic stereo 3D display products, we want our users to see the world's best stereo 3D images to compliment our accomplishment.

For that reason, we stand ready to assist your efforts to create the very best images. Because the creation of these images is an art, they deserve care and dedication. We invite you to collaborate with us early in your development process so that your stereo 3D implementation is the very best it can possibly be.

Lenny Lipton
Founder, Chief Technical Officer

says team advisor and member of last years winning team Matthew Rece, now a freshman at the University of Cincinnati. By using CrystalEyes supplied by StereoGraphics and 3D Studio Max provided by Autodesk, Inc., the team intends to provide both a video screen and monitor version of their robotic-simulation entry – both which will include stereo 3D.

Please join us in wishing Matthew and his teammates the best in their stride for

first place honors at this years competition. For a QuickTime movie of their 1996 award winning entry, Visit Walnut Hill's homepage at: <http://w3.one.net/~dfessel/usfirst/index.html>



On the Road

Trends in Stereoscopic Software Development

By **Bob Akka**
President
Chasm Graphics

I have been doing a lot of traveling recently. From Silicon Valley to Manchester, England, I have been helping software developers adapt their programs to look great in stereo 3D. In my travels, I am seeing some revolutionary trends which are changing all the rules for application and game development.

The most important trend is that high performance computing power has become relatively cheap. Pentium-class processors have become the baseline for computer purchases, fast CD-ROM drives are nearly universal, and the cost of RAM has finally come down. What this means is that even an entry-level home computer now has the power to generate three-dimensional scenes at the kind of real-time speeds that were once only seen on specialized graphics workstations.

Additionally, we are seeing the introduction of 3D accelerator chips driving standard personal computer graphics boards. Not only do these 3D accelerator chips radically speed up the rendering frame

rate of 3D scenes (this higher speed also allows graphics to be rendered at higher resolutions), but texture quality is greatly improved as well.

What does this mean for software developers considering developing stereoscopic applications and games? It means that we have the power to develop dazzling real-time graphics. In fact, we are quickly reaching the point where new home and office computers have the power to drive full-screen stereoscopic renderings at moderate resolutions and smooth frame rates. At last, 3D games and applications really can have it all!

Notes from the DeveloperDen...

S3 ViRGE and Rendition Verité Support Completed

S3 announced its highest performing 3D multimedia accelerators — the ViRGE/DX™ and ViRGE/GX™. The DRAM-based ViRGE/DX and SDRAM/SGRAM-based ViRGE/GX are designed to deliver the next level of acceleration required by advanced gaming and emerging business desktop applications. StereoGraphics has adapted Descent II and Whiplash as stereo-accelerated titles for S3 ViRGE and Rendition Verité 3D accelerator chipsets.

SimulEyes Driver Update

Developers will want to periodically check our ftp site for upgraded drivers:

<ftp://ftp.stereographics.com/Developers>

Our ftp site enables you to examine date stamps of ZIP files. If you haven't downloaded new drivers recently, here are some new additions:

- Our DOS protected mode driver SVRDOS32 (simdos32.zip) has some new alternative API functions for programmers who wish to manage video themselves. These have been developed in response to programmers who are rendering directly into video memory and implementing their own multi-buffering schemes. The latest added API function allows our interrupt handler to callback other software drivers, as used with some 3D accelerator chipsets.
- Our Windows interlaced drivers SVR3D (simwin16.zip) and SVR3D32 (simwin32.zip) have added more chipsets, completing the S3 series. An additional API parameter can invert the SimulEyes white line code for windowed stereo images positioned on odd scan lines instead of even. A sample applet SG-Toggle easily demonstrates this operation.
- Our DirectX (simwindx.zip) driver is being adapted to handle page-flipping for all chipsets supported by DirectDraw, not just specific chipsets. This will be accomplished by having our driver call DirectDraw's Flip() method through a callback mechanism.

OPENGL Documentation for CrystalEyes

Joining the Silicon Graphics GL graphics library documentation and sample code is the new Using OpenGL for CrystalEyes Stereo-Vision Viewing on SGI Systems document. The document (sgi_opengl.txt), located on our website, explains how to use OpenGL for stereo development on Silicon Graphics systems with CrystalEyes. Be on the lookout for SDKs for NT, HP, IBM, SUN and DEC platforms coming soon.

Contact StereoGraphics

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StereoGraphics Website Updated

Since StereoGraphics set up its web site one year ago, it has become the primary vehicle for delivering software drivers and technical information to developers. We recently updated the site to provide easier navigation. Future additions to the site will include:

- Moderated chat sessions with our in-house stereo 3D development experts.
- Links to other sites of interest that provide technical information and unique ways to use stereoscopic images in web sites.

As part of our desire to see more stereo 3D content on the Internet, we're beginning an alpha testing program for a new piece of software. StereoGraphics has developed a Java applet that works with your browser to enable stereo viewing with SimulEyes. To download it go to www.stereographics.com/html/simuleyes_sdks.html or visit our FTP site at [ftp.stereographics.com/developers](ftp://stereographics.com/developers) and download `simweb3d.zip`. Please let us know about your experience using the applet by sending email to toby@crystaleye.com.

Apple Introduces Stereo Support

Apple has announced support of StereoGraphics SimulEyes in version 1.1 of *DrawSprocket*, Apple's API for video game graphics. Scheduled to ship December 15th, *DrawSprocket* 1.1 provides a device independent API for developers to access devices that provide stereo vision to Macintosh users, including LCD glasses such as SimulEyes, red/blue (anaglyph) glasses, and head-mounted displays, without knowing which device will be used. Future announcements will be made on the mac-games-dev mailing list, a forum for Mac game developers to discuss game programming issues. To join the list, visit <http://www.solutions.apple.com/ListAdmin/>.