

# Graphic illustration in 3D

Following his look at editing and directing for 3D programmes, **Philip Stevens** reviews the graphics production requirements for the format with an aim to make the output easy to view

## 3D Tutorial

As we have seen in a previous article (see *TVBEurope* June issue), when it comes to directing and editing productions in 3D, there are techniques that have to be considered in order to make the output easy to view. And the same is true when it comes to creating graphics that are used on such programmes. In many cases, simply taking 2D graphics and converting them is not acceptable.

Sky Television, for example, has published guidelines relating to negative/positive parallax. These guidelines are based on a 46-inch screen. "Obviously, we make sure internal and external designers, and production and post production companies are aware of our requirements," states Sarah Cloutier, visual effects manager at the broadcaster. "However, they are guidelines only and we

take each project individually, so that the design is not compromised."

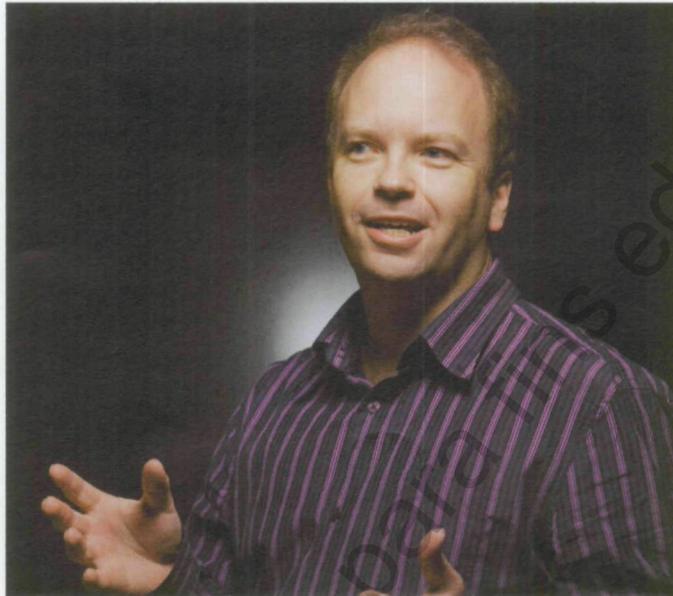
She continues, "At Sky, we have an existing infrastructure that includes Maya and Softimage 2011, Nuke and Ocula, Flame 2012 and Mistika. We have used this pipeline for all graphics design required for titles, idents and branding for 3D programming. Designers are currently using Adobe CS4 and 5, which is not compatible with Stereo 3D graphics production. We are going to upgrade to CS5.5, which is the first iteration of 3D tools Adobe has introduced. For our live to air graphics we use Vizrt."

Cloutier reveals that the broadcaster needed to create an initial pipeline with some speed, as only three weeks notice was given to produce graphics prior to the first 3D transmission on 31 January 2010. At that time, Sky used a Vizrt system to play out the 2D live to air graphics, so it made sense to continue with the same supplier for 3D.

"When we started, we were the only people



The Vizrt package allows 3D graphics that enable a ball in action to be tracked to illustrate tactics



James Gilbert: "Display technology is the key to development"

creating 3D graphics for live television in the UK, so we had to learn on the job. Since then, a number of training options have become available through vfxphd and Escape Studios. There are also many online tutorials available. Not surprisingly, we have found that working hands-on is the best way to really get to know 3D stereo."

And that knowledge of what works and what doesn't is essential when it comes to designing 3D graphics. "We are always aware of window edge violation and the amount of time the graphics are in negative space. But we have managed to create a library of wipes and other effects that work for live broadcasts. Ultimately, graphics are always going to come out on screen for less time. In the

design of the channel branding, we decided to have most images in negative space, not breaking frame for a more subtle 3D experience."

## Making it viewable

Nir Goshen, director of User Experience at Vizrt, maintains that stereoscopic content tends to be more taxing on the eye. It is vital, therefore, to bear this consideration in mind while designing content for stereo. "One of the most important things to avoid is fast-moving graphics near the edges of the screen. When the eye looks at fast action it performs very rapid 'seek-and-follow' movement. If the stereo graphic is running by the edges of the screen, the eye notices the screen's bezel — which is not situated at the same perceived depth as the graphics. This causes a dissonance that should be avoided."

For similar reasons, the graphics need to stay on screen for longer. Goshen provides an interesting scenario to help graphic designers grasp the difficulties associated with 3D. "Think along the lines of trying to select an apple that is on a table — where it is easy to know exactly where to send your hand, versus picking the fruit off a tree. The discoverability of stereo graphics is similar to the apple on the tree. The viewer has to see first where on the screen they must look, and then adjust the eye to the correct depth — or convergence — of the graphics. It doesn't require an entire different treatment, but just the speed of things must be a little slower."

James Gilbert, joint managing director at Pixel Power, agrees.

"In my opinion, when it comes to 3D graphics, less is best. Designers must resist the temptation to make the graphics stand out too much, or the background image will be lost. That is the first key consideration"

Gilbert's second key is the positioning of the graphics in relation to the live action or edited material. "If the graphics are too far forward, they simply look silly. If they are too close to the action, then there is a possibility that the graphics may appear behind that action. Broadcasters are already talking about creating a 3D 'safe-area' and that will be important"

His third key point relates to audio. "It is fairly common practice these days to associate a sound effect with the appearance of some graphics. Designers need to bear in mind that the audio needs to be correctly positioned, too, if it is to match the visual elements. Sadly, that is often forgotten today."

## Convergence considerations

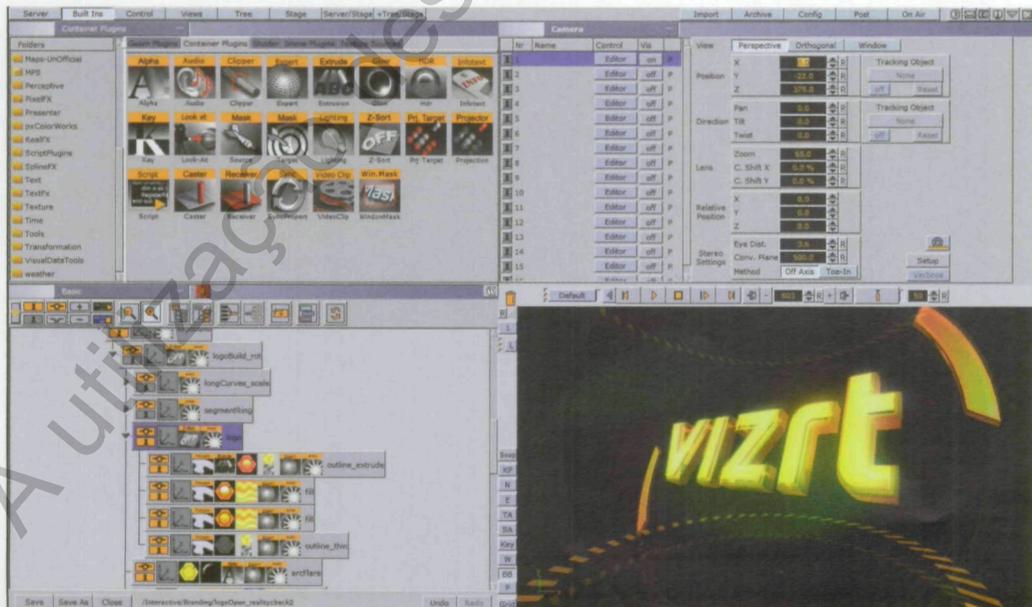
Just as the convergence on 3D cameras can be adjusted during a live programme, so similar movements are required for graphics.

"The convergence point in or from each cut is made by the director and stereographer to ensure the transition is comfortable," declares Cloutier. "That convergence point will determine where the graphics sit. The position of the graphics can also be affected by the camera positions at the event. If the cameras are relatively low, the chances of a clash between a graphic and the live action are increased, so we will adjust the convergence accordingly."

Using the Vizrt system, the graphics operator can prepare ahead of time and set quick recalls for each camera blocking position. Each blocking position can be stored and then be associated with a GPI slot. These can be connected to the GPI positions on the ME bank of the vision mixer, enabling the graphic to correspond to the live camera instantly and without the need of manual synchronisation.

"It's easy to alter the separation distance," states Goshen. "We offer a simple and snappy utility to set the eye disparity and convergence — the 'Stereo Control'. It is an on-screen interface that allows the operator to manipulate these values in a 'what you see is what you get' fashion. This information can also be saved into the graphic scene, if need be."

Pixel Power provides a similar adjustment of convergence in realtime through its combined master control and branding BrandMaster system. "That was a pretty essential requirement by ESPN for its World Cup coverage last year," points out Gilbert. "The live footage beamed from South Africa did not allow



The Viz Artist User Interface, showing the camera setting editor with the stereo parameters

control over the 3D parameters, so the graphics that were added by ESPN had to be positioned 'on the fly' to make them look right. That manual control we offered enabled the broadcaster to obtain the optimal look."

Gilbert expects this positioning will be handled automatically in the course of time. "There's a lot of work going on with

**"When it comes to 3D graphics, less is best. Designers must resist the temptation to make the graphics stand out too much, or the background image will be lost. That is the first key consideration" – James Gilbert, Pixel Power**

[usa.autodesk.com](http://usa.autodesk.com)  
[www.thefoundry.co.uk](http://www.thefoundry.co.uk)  
[www.sgo.es](http://www.sgo.es)

[www.adobe.com](http://www.adobe.com)  
[www.fxphd.com](http://www.fxphd.com)  
[www.escapestudios.com](http://www.escapestudios.com)



An example of a 3D graphic created by Sky for its football coverage



**Sarah Cloutier: "We are always aware of window edge violation and the amount of time the graphics are in negative space"**

metadata that will describe the 3D space the action occupies. That will help with an automated process."

### Looking forward

Needless to say, 3D graphics for television is still evolving from some simple beginnings. But, obviously, there will be growth. So, how do those intimately involved with the technology see the future?

"Sky is leading the charge in 3D broadcasting and we are building on already successful relationships with manufacturers to ensure we have the most current and suitable tools," states Cloutier. "We will continue to push the boundaries of what is achievable in stereoscopic."

According to Gilbert, the way ahead is not confined to the graphics packages. "Display technology is the key to development — and opinion is divided at the moment. A small number of our customers are pushing us — and Pixel Power will provide the tools to match their requirements."

Goshen at Vizrt is looking beyond the immediate future. "3D is an exciting new frontier and as such, we are all still at the exploration stage. Obviously, the industry will gain from having glasses-free experience and from the fairly near future of more than two points of view. However, I hope someone will figure out how to create a good-looking holographic image that is feasible for the mass consumer market. This will be the ultimate game changer in terms of viewing experience."

[www.sky.com](http://www.sky.com)  
[www.vizrt.com](http://www.vizrt.com)  
[www.pixelpower.com](http://www.pixelpower.com)

## Imagem

Copyright of TVB Europe is the property of Miller Freeman plc and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

**Fonte: TVB Europe, p. 40-41, July 2011. [Base de Dados]. Disponível em: <<http://web.ebscohost.com>>. Acesso em: 12 Aug. 2011.**

A utilização deste artigo é exclusiva para fins educacionais.