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The holy grail of 2D conversion is to achieve negative parallax

Transforming 2D to 3D

3D Production

By George Jarrett

One of the hardest things to believe about the booming area of stereoscopic 3D is that converting live 2D camera feeds and 2D archive content to 3D could ever be a simple matter of plug and play, on the fly processing.

The first to gather some proprietary algorithms — and deservedly bag loads of ‘hit pick’ awards at IBC — was JVC with the IF-2D3D1. It has now sold several dozen of this box, but it is very keen to identify what the product is designed for and where it resides in the OB armoury because some people expect too much.

“It has actually been on the market for nine months and used for some major productions, but 2D to 3D conversion is an awkward subject,” says Kris Hill, sales executive and 3D product specialist at JVC. “People did not think it could be done, and first up it is not designed to get you away from true stereo. It is yet another tool to complement true stereo acquisition.

“Where it is being openly used is in current events, where they are taking from 2D camera positions that simply do not work in 3D for one reason or another. They convert on the fly and in realtime to 3D using our processor,” he adds. “The other purpose of the tool — so it can be seen as a ‘get you out of trouble’ box — is taking archive footage shot originally in 2D and re-purposing it for insertion in largely 3D acquisition projects.”

Asked what the common misconceptions are, Hill says: “Precisely that you simply put

“It is very plug and play, unlike other processor systems where you get a big server system, software, and set-up issues to resolve” – Kris Hill, JVC

your 2D footage through our box and you have got a 3D programme or film. That’s not the case. It is designed, for the live events business, to do something very quickly on the fly, but when you are working with archive content it does about 70-80% of the work for you.”

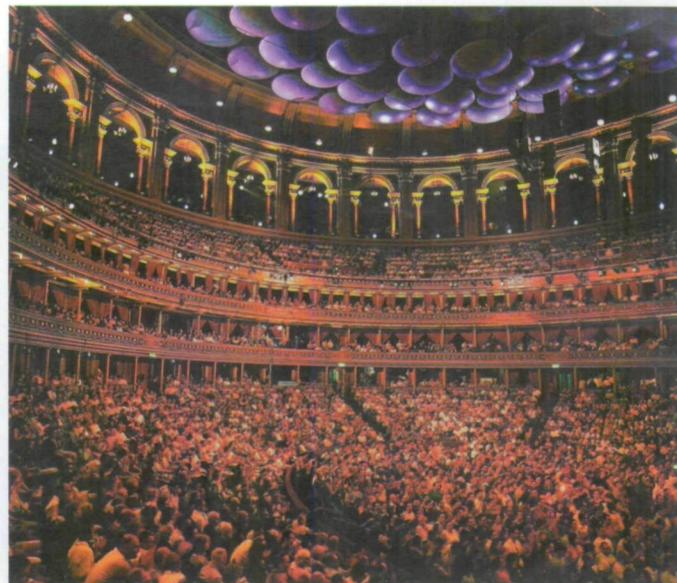
Oh for negative parallax

The IF-2D3D1 weighs about the same as a laptop and is not much bigger in footprint as it comes in a 19-inch rack-mountable frame. It looks so unremarkable it is hard to imagine there is a technical holy grail to chase.

“It is very plug-and-play, unlike other processor systems where you get a big server system, software, and set-up issues to resolve,” says Hill. “The holy grail of 2D conversion is to achieve negative parallax. The current box will only put everything it converts

into positive parallax, where everything looks like it is behind the screen. This gives you an immersive feeling.

“What people are hoping for, and indeed what we are looking at, is what we can do with the algorithms to bring some content to the negative space as well,” he adds.



The JVC image processor was used for a 3D production of the Prince’s Trust Rock Gala at the Royal Albert Hall last Christmas

Hill sees 3D as a niche market at present, peopled by a growing professional community. The processor has been used regularly by OB facility companies like Telegenic and production outfits like Nineteen Fifteen 3D, and it was this combo which made history at the Albert Hall just before Christmas with a 3D production of the Prince’s Trust Rock Gala, starring Eric Clapton.

“We do not choose the projects. Everybody in the 3D community will find how our product works. It was

even used at the World Cup, despite that being a Sony event,” says Hill.

“The Albert Hall event was managed by stereographer Vicki Betihavas of Nineteen Fifteen, and she has had experience of using our box with the guys at Telegenic — the OB provider to Sky — before,” he adds. “Her expertise alone works best because obviously she knows what camera positions are going to work best. Vicki knows what you can get, and indeed the

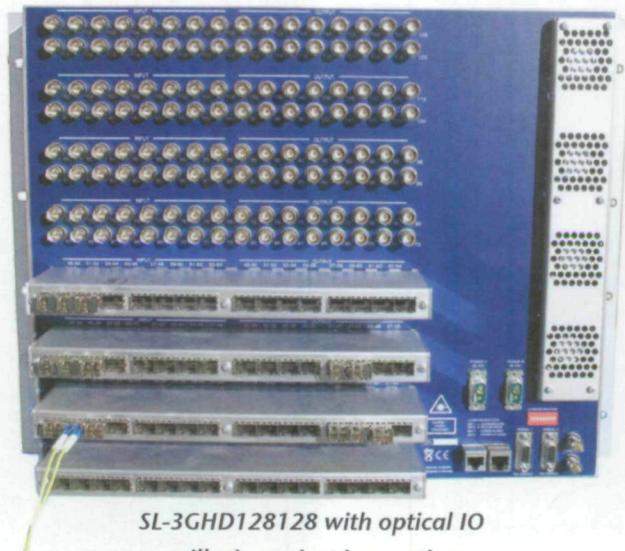
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Cloud produces bright outlook

'Cloud' is the latest buzzword when it come to computing technology.

Philip Stevens looks at how it is helping with the streaming of sports events

For most people talk of 'Cloud' usually means the potential for a dull time ahead. But in terms of computer technology, 'Cloud' is far from bleak — in fact, it opens up a whole new vista of opportunities for those in the broadcast industry.

Put simply, cloud computing embraces services used on the internet without the need to download any software. Most people already use Cloud when they log in to Gmail or Yahoo. The information being sourced or collected is located in a central place rather than on a specific computer. In short, Cloud involves a grid of computers and a service-oriented architecture to deliver software and data from a production source to selected participants.

Although the technology can be used by just about any industry, developments by broadcasters are opening up new opportunities.

In order to provide a more wide-ranging service to its customers, London-based sports production company, Input Media has formed a strategic alliance with Octopus Media Technology, one of the leading Cloud-based content management and digital delivery facilities.

OctopusMT's range of services includes enhancing websites with video content, bespoke online video applications, digital content storage, broadcast content management and distribution, global digital delivery of rushes, interactive IPTV channels, hosting, web-casting, web-TV simulcasting, and live events streaming.

"An increasing demand for new media services meant that we



David Johnson: "The main advantage is that it is browser-based"

wanted to find flexible and economic solutions for our customers," explains Input Media's Managing Director, David Johnson. "So, it makes sense to form alliances with specialists in areas outside our main core expertise. This enables Input Media to concentrate on production work — which is our speciality."

The Octopus platform used by Input Media is Software As A Service (SAAS) and browser-based. This means that content can be uploaded and managed anywhere in the world from any device with an internet connection, without the need for any extra software or hardware.

"The main requirement for Input Media was a very flexible solution that could be tailored for each individual client," reveals Andrew Eborn, founder and president of Octopus Media Technology/Octopus TV. "For

example, one of the contracts is for a service that needs the capacity to stream up to 12 live football matches simultaneously. The Octopus equipment handles this effortlessly."

The Octopus browser-based platform is not only an economical solution for Input Media's services, but it also opens new revenue streams. One part of the system — Octopus Digital Courier — also enables large files to be delivered globally without the need for tapes and couriers. With accelerated upload and download, Octopus Digital Courier is significantly faster than normal ftp and also offers several additional advantages tailored to industry requirements.

Added value

As far as Input Media is concerned, the alliance (which has been in place since August 2010) enables the company to offer new openings to its clients in, what is, after all, a fast changing space. "There are added value services that can be gained through Cloud technology," declares Johnson. "The main advantage is that it is browser-based. Subject to rights availability, which we can manage, the user can access content on any device, anywhere, without complicated set-ups. This makes the services more appealing to the user. We can also offer our clients the option of securing additional revenue streams through VoD and micropayment mechanisms."

Such facilities can also be valuable as a business to business service because clients can access their own content for review more easily.

Input Media is convinced that, over time, these types of usage will become more and more valued.

To ensure the system would deliver the expectations of Input Media and its clients, technical personnel from both companies were involved in several trials at various events covered by the producer. The strategic alliance was launched with a series of live football matches being streamed for SportFive, the international rights management company, and The Football Association via FA.com, including The FA Cup draws, England Under 21 matches and the Euro 2012 qualifiers

Even though the technology is the main ingredient of the alliance, Input Media personnel have had to view the output in a different way. "The biggest change is that there is a new end product, in addition to the main TV output," states Johnson. "It really depends, programme by programme, sometimes there are slight editorial or production changes that are required to meet the demands of making content fit for the different platforms. We work closely with Octopus when new work is booked to make sure the set-up is appropriate, and then after that it is fairly straightforward."

He adds, "We're involved in a growing market. Improvement in bandwidth and devices such as mobiles and tablet units like the iPad will drive progress through customer demand. It is important to stay in tune with a fast moving market place, and working with a range of partners is enabling us to build upon the strength of our core production work."

Transforming 2D to 3D

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limitations from the box as well. It is a process, fair and simple. It takes 2D feeds and works on the fly."

Bethivas does indeed trust the IF-2D3D1. In shooting the

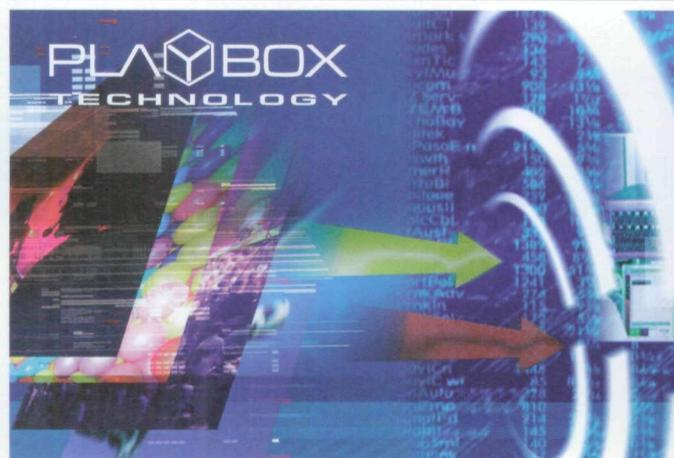
Prince's Trust Rock Gala her team used the processor for 2D feeds from a couple of camera positions, but the output from one of those positions would not work with either the JVC or Sony converters — and that camera output was subsequently kept for the 2D version of the show.

"It likes certain 2D positions better than others," she says. "We

used the JVC box in post on certain shots and it was great. They worked well in the final show."

The IF-2D3D1 is equipped with 3D image and camera adjustment tools. This means that you can use flip-flop and rotate techniques via the box. It has dual waveform monitors, dual vector scopes, plus split-screen overlays in anaglyph mode.

"Using the box and any 2D screen when you are using your 3D rig(s) it will align your cameras (using red and blue type glasses). It has a rotation mirror function as well," says Hill. "It will give you four different 3D output formats — side-by-side, above and below, checkerboard and line-by-line — and it will kick that out either as HDMI or SDI."



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