Stereoscopic 3D Product & Technology News

Welcome to the 3Droundabout special stereoscopic 3D supplement for IBC 2011. This serves as a quick reference to products, technology and events at IBC for S3D content creation, delivery and display. Further coverage can be found at **www.3Droundabout.com/3d-ibc-2011**. Commentators on stereoscopic 3D fall into two camps: those who are sceptical of its commercial viability; and those 3D pioneers who are incredibly enthusiastic. These are early days yet, and there is much to learn about and do to bring 3D into the mainstream, but the genie is definitely out of the bottle. At IBC 2011, you can see the future, and it is not flat!

On show is a wide array of products and technology to help broadcasters and AV professionals take the 3D plunge or improve their workflows. There are new 3D cameras, controllers, rigs and OB vans, and numerous 3D post production and mastering tools. To improve 3D quality, there is a growing number of monitoring and analysis tools, and to help make more 3D content available, there are new and improved 2D-to-3D converters, and more ways to deliver 3D to different platforms. There are also some great conference sessions and 3D demonstrations, details of which are conveniently summarised within this supplement.

So whatever your 3D requirements, we hope this will help you find the right solutions and information. Have a very enjoyable 3D IBC 2011!

Acquisition

Among the expanded family of **JVC (stand 10.D41)** professional 3D products is the GY-HMZ1 3D handheld camera. This is JVC's first 3D ProHD camcorder. It records each left and right image in full 1920x1080 resolution to non-proprietary SDHC or SDXC media cards or to the camera's built-in 80GB internal memory. Video can be recorded with timecode at 50i to provide smooth motion (for sports and other fast action) or 24p for a film-like effect. The GY-HMZ1 can also capture 3D time lapse and 3D digital stills, and its 3.5" colour LCD touch panel offers glasses-free 3D viewing.

Ikegami (stand 11.A31) is showing the HDK-97A (or Unicam HD). This 16-bit 3G-SDI 1080/50p HD portable companion camera uses 3G fibre transmission, and has an HD-SDI 'trunk channel' for connection to a second camera for S3D applications.

Another new camera product is the Delta 4K S3D Meduza matched-pair lens set from **Meduza Systems (stand 9.A40)**, This has been designed to deliver super-high precision, not only in the glass, but also in the motorised focus and iris controls. For those requiring a compact, lightweight zoom lens, the **Thales Angenieux (stand 11.F30)** Optimo DP 3D-ready lenses offer easily-adjustable tracking, harmonised focus marks between the two lenses, and the ability to instantly change focal length without the need to dismantle a rig for frequent lens swaps.

For shooting 3D in tight spaces, **Toshiba Imaging (stand 10.C49)** is demonstrating the IK-HD1 as the world's smallest 3-chip HD camera head. Meanwhile, **LMP (stand 10.F21)** is showing the Micro HD which works with the HD Multi-X Cineview 3D universal 3D processor for single-link recording and playback, and direct 3D monitoring. The ALEXA M is being showing by **ARRI (stand 11.F21)**, with full 3D sync functionality. Comprising a separate small-form camera head and body, ALEXA M is tailored for action photography, tight corner shots and 3D productions.

For speed and motions effects, **Olympus (stand 9.A35)** is offering synchronised high-speed i-SPEED cameras, while **Photron (stand 11.G25)** is showing synchronised high-speed FastCam SA6-HD cameras. **I-MOVIX (stand 11.E60)** is demonstrating SprintCam Vvs HD with support for synchronisation of two cameras in 3D ultra-slow-motion capture. The camera operates at frame rates up to 2700fps in 1080i50 or

Duncan Humphreys, Creative/Technical Director, Can Communicate

What stereo 3D projects are you working on? *I recently finished the production of 2011 Wimbledon 3D and have immediately begun planning for 2012 with Sony and AELTC. At the same time I have been overseeing a number of other 3D projects CAN are involved with right now in the television documentary field.*

What has been your stereo 3D highlight of the past year? *I would choose 3 favourites! From a personal perspective I deemed the Wimbledon 3D broadcast a big success and one CAN is justifiably proud of. The other two highlights I would choose are Sky's coverage of the 2010 Ryder Cup, which was excellent whilst working in extreme weather conditions (the broadcast on the final day was superb) and David Attenborough's Flying Monsters by Atlantic Productions.*

What stereo 3D products or services are you looking for at IBC? *The never ending search for a full HD 3D broadcast camera with on board recording! They won't replace rigs, but will offer productions an ability to be more reactive than current technology allows.*

Which companies are on your 'must see' list? *Sony for its new PSC 3D HD camera and their new digital recording devices, and Avid for the new 3D tools that are coming out.*

www.cancommunicate.com

3D Exhibitor List

2020 3D MEDIA 8.G35	EVS 8.B90
3ality Digital 9.B40	Eyeheight 8.D92
3D-ONE 11.B40	F.A.Bernhardt 2.A21
Adobe Systems 7.G27	FFV 9.A16
AJA Video 7.F11	Filmlight 7.F53
AMD 7.H35	FOR-A UK 2.A51
Antik 13.313	Fraunhofer HHI 8.B80
ARRI 11.F21	Frontniche 10.F32
ASSIMILATE 7.H11	Gefen 7.B30
Aston Group 2.A30e	Glidecam 11.G45
ATEME 1.F70	GlobeCast 1.A29
Atos 13.153	GoPro 9.A36
Autodesk 7.D25	Grass Valley 1.D11
Avid 7.J20	Hamlet 9.D10
Axon 10.A21	Harris Systems 7.G20
Barco Silex 9.A57	I Tech 5.B11G
Binocle 11.D70a	I-MOVIX 11.E60
Blackmagic 7.H20	Image Systems 7.A28
BLT Italia 8.A68	Imagineer 7.J47
Bluefish444 7.J07	Indiecam 10.C49
Bluestreak 13.123	IneoQuest 1.C39
Boxx TV 11.C66	IDC 1.C29
BRAINSTORM 2.B59	intoPIX 10.D31
Bright Technologies 7.A10	iP4.tv 13.442
Broadcast Pix 7.B20	iPONT 1.B51
BSI 9.A46	JVC 10.D41
Burton 8.G48	K-Tek 8.A72
Cabletime 13.373	LiveU 3.A15x
Calibre UK 7.J43	LMC 11.D70ciii
Camera Corps 10.C49	LMP 10.F21
Canon Europe 11.E50	Marquis Broadcast 2.A58
Cartoni 11.C30	Marshall Electronics 11.D20
Cel-Soft 7.K01f	
Christie 9.B30	Matrox 7.B29
Chrosziel 11.E65	Medialuso-Kronomav OE.204
Chyron 7.D11	
Cmotion 11.C40	Meduza Systems 9.A40
Codex Digital 11.F40	Metracom 2.A30b
CRC 8.F49	Microfilms 11.E61
Convergent Design 7.A07	MikroM 8.B95
	Miranda 8.D41
Cotech 11.A54	MUSCADE 10.F20
Data Vision & Allied Vision Technologies 9.A50	NewTek 7.K11
	NICT 8.F39
	NuMedia 3.B55
Dataton 7.G12	Olympus 9.A35
DFT 7.E21	Omnitek 6.A18
DigiTAG 10.F20	Orad 7.B27
Doremi 10.B10	P+S Technik 11.E28
DVS 7.E25	Pace 1.B19
Editshare 7.C21	Panasonic 9.C45
Elrom Studios 3.A15g	Photron 11.G25
emotion3D 6.A01	Pixel Power 7.A31
Ericsson 1.D61	PNY/NVIDIA 7.J38
EBU 10.F20	
Evertz 8.B40	*(continued overleaf)*

5800fps in 720p60 (200 times slower than live action). The **LMC (stand 11.D70Ciii)** Antelope camera records up to 5800fps in native HD or higher frame rates in lower resolution. It features EVS compatibility, and gyro, handheld, wireless and 3D options.

Other 3D camera products to look out for include professional integrated stereoscopic cameras from **3D-ONE (Alphatron stand 11.B40)**; and the ALADIN MKII multichannel lens remote control receiver from **Chrosziel (stand 11.E65)**. This can control up to eight motor channels and is suitable for S3D side-by-side and mirror rigs.

Grass Valley (stand 1.D11) is showing key new products and technologies for sports, entertainment and production, news, playout, and delivery. In terms of stereoscopic 3D workflow, the company will be showing a practical approach towards technology solutions for handling 3D production, with multi-format and multi-use 2D/HD solutions that work just as well and easily, when producing 3D content. Grass Valley will show how its cameras, switchers, servers, replay systems, and routers are capable of being used for 3D production without the need for building separate systems or needing to be replaced by specialised 3D equipment. Grass Valley is also promising to unveil something guaranteed to tear up the track, comprising high-octane performance and sleek, next-generation styling!

OB & Connections

Sony (stand OE.302) is showing OB-Team's 3D-capable, 19-camera high-definition outside broadcast vehicle. This features Sony HDC-1500s, HDC-P1s, slo-mo and Link Research wireless RF camera systems, and a 3D-capable Sony MVS-7000X vision mixer. Meanwhile, **Medialuso-Kronomav (stand OE.204)** is showing 3D OB van featuring a complete system for producing 3D in real-time.

For those requiring a portable, point-to-point microwave link, **Boxx TV (stand 11.C66)** is introducing Cerulean. This carries two video streams or one 3D feed, with no errors and no latency, making it an alternative to fibre on productions where

cables are impractical. Specialist in portable broadcast-quality, video-over-cellular solutions **LiveU (stand 3.B43)** is presenting its new 3D live broadcast technology and further enhancements to its flagship LU60 broadcast-quality system.

Rigs & Cranes

There are plenty of 3D rigs on show at IBC. **Stereoscopic Technologies (stand 9.D20)** is showing 3D rigs for sale or rental, featuring precise and fast rig alignment of up to 11 motorised 3D parameters, digital counters, quick release plates, balanced movements and wide focal lengths. **Bincole (stand 11.D70A)** is showing a 14kg 3D Brigger 1 rig that can be used directly on the shoulder, on Steadicam or on the Easy rig harness. The company is also showing its 3D Disparity Tagger software.

New **P+S Technik (stand 11.E28)** accessories for the PS-Freestyle Rig include the Magic Support for cranes, lambda heads and tripods; and the PS-Freestyle Quarterwave Filter that reduces polarisation artefacts with almost no light loss. The new film-style PS-Cam X35 film-style camera for motion effects is also on show. From **Teletest (stand 11.D80)** comes the new lightweight and shoulder-mountable BINORIG, an S3D mirror and parallel camera rig that has servo-controlled interaxial and convergence settings, thus eliminating the need for a convergence puller.

Other camera support products include an optimised trifocal rig from **2020 3D Media (stand 8.G35)**; and a 3D rig from **Microfilms (stand 11.E61)** that can adjust IO and convergence automatically while accounting for focal length, focus and iris in real-time. Designed as a simple yet effective crane for DSLR cameras and compact camcorders for 2D or 3D requirements, the **Polecam (stand 10.C49)** Starter Pack has a three-section 3.5m boom and can be mounted on standard professional tripods or harness mounts.

In addition to showing its 3D rigs, **3ality Digital (stand 9B40)** is providing live demonstrations of two new technologies, Intelle-matte and Intelle-cal. The Production Village also includes 3ality Digital technology with a live demonstration of Intelle-cam.

Monitoring & Analysis

For 3D live production monitoring, **NuMedia (stand 3.B55)** is demonstrating the Stereobrain 3D processor with full support for all slow frame-rate progressive sources. **TVLogic (stand 10.B29)** is showing the TDM Series of 3D monitors. Designed for 3D broadcasters, production and post-production professionals and OB Vans, the Full HD panel includes a wide viewing angle. **Omnitek (stand 6.A18)** has a new stereo 3D monitoring option for its test and measurement products providing a comprehensive range

Nicolas Henri Sieber, S3D Director/Producer, Kamerawerk
What stereo 3D projects are you working on? *We are currently working together with Weisscam on a stereoscopic commercial for an automotive company, shot on the Weisscam HS-2. We are also prepping an S3D music video and just finished the trailer for an S3D documentary about a Swiss circus.*
What has been your stereo 3D highlight of the past year? *Our 3D highlight certainly was the production of our high speed S3D film RISE (shot entirely on Weisscam HS-2s at 2000fps), which is about to be released on 3D content platforms such as 3DeeCentral.com.*
What stereo 3D products or services are you looking for at IBC? *There are a lot of great and by now established products for stereo 3D production, so I'll be looking out for emerging products, which have a different and fresh take on S3D. At least I hope to find those!*
Which companies are on your 'must see' list? *P+S Technik, Iridas, Quantel, RED, JVC, Blackmagic, AJA and I'm very curious to see what Avid does in terms of S3D.*

www.kamerawerk.ch

3D Exhibitor List (continued)

Polecam 10.C49
Preco 8.E49 QoE
Systems 9.A05
Quantel 7.A20
Quantum 7.G30
Qube Cinema 7.F45
RED 9.B49
Rimage Europe 7.G15a
Ross Video 9.C20
RRsat 1.A25
Sagemcom 1.F40
Satlink 5.A41
Schneider Optics 11.A28
Screen Subtitling Systems 1.C49
SES ASTRA 1.B51
SGO 6.A11
Sisvel 13.106
Snell 8.B68
Softel 1.A27
Sony 12.A10
Stereolabs 11.D70b
Stereoscopic Technologies 9.D20
Stergen 2.A31

T-VIPS 1.B71
Tektronix 8.C75
Telecast/Belden 10.B39
Teletest 11.D80
Teranex 10.D21
TestVid 10.A09
Thales Angenieux 11.F30
The Bakery 9.A59
The Foundry 7.B21
Thomson Video Networks 5.A17
Toshiba 10.C49
Transvideo 11.F31
Triaxes Vision 2.A28
TVLogic 10.B29
Vestel 13.131
Vimond 2.A31
Vinten 11.D61
Visual Research 7.J30
Vizrt 2.A31
WASP3D 3.B62
XD Productions 8.D82c
YUVsoft 11.F74
Zalman 9.A32

IBC Production Village & Inside Knowledge

The IBC Production Village is all about a hands-on experience, and at its heart is a fully-equipped studio set which features the very latest in stereo 3D, speciality and DSLR cameras. Here you can ask manufacturers direct questions, and get a real feel for how the cameras work. New for 2011 is Inside Knowledge, an area where the people that actually use the cameras, such as broadcasters and production companies, present case studies showing how the technology works in the field.

The IBC Big Screen

The IBC Big Screen facilities offer 2K, 4K and stereoscopic 3D digital projection, and Dolby 7.1 surround sound, and it will be used to support the 3D@IBC conference sessions on Monday 12 September.
The Saturday night movie screening this year will be Transformers 3: Dark of Moon in stereoscopic Dolby 3D and Dolby 7.1, courtesy of Paramount Pictures International. The Monday night showcase will include an extended trailer of James Cameron's Titanic 3D, Flying Monsters in 3D, the Royal Wedding in 3D, and courtesy Lightstorm Entertainment and Twentieth Century Fox, test clips illustrating the capture and display of 3D content at higher frame rates.

of colorimetry and depth-analysis functions. **Tektronix (stand 8.C75)** is also showing new 3D video monitoring and measurement products designed to help production teams determine the differences between the left-eye and right-eye images.

Stereolabs (stand 11.D70b) is showcasing the PURE advanced stereo image processor. Designed for studio and mobile 3D production, PURE provides stereo analysis and correction, depth control, on-the-fly rig control and live 3D monitoring and output.

For stereoscopic signal analysis in 3D grading, quality-control, post-production and 3D camera set-up, the **Cel-Soft (stand 7.K01F)** Cel-Scope3D 1.4 incorporates a novel depth spectrogram which plots all depth activity and excursions against time. Meanwhile, the **Eyeheight (stand 8.D92)** LE-3D Video Legaliser provides identical legalisers working in parallel to a single control panel so the operator knows that each level of 3D video capture is precisely in compliance.

Other monitoring and analysis products include new 3DView monitors with embedded synchroniser and stereo analysis tools from **Transvideo (stand 11.F31)**; and the ZM-M240WPF professional micro polarised 3D monitors from **Zalman (stand 9.A32)**.

Cards & Recorders

A choice of 3D-capable video cards is on show at IBC. **AMD (stand 7.H35)** is showing FirePro V7900 and FirePro V5900 workstation-class graphics cards with support for simultaneous displays in multi-application workflows, collaborative design and stereo 3D broadcast and post-production applications. **AJA (stand) 7. F11)** is demonstrating Hi5-3D and KONA 3G, and an Element Technica 3D camera rig with dual RED EPIC cameras, two AJA Ki Pro Minis as well as an AJA GEN10 sync generator and an AJA Hi5-3D connected to a 3D monitor.

In addition to the 12-bit quality of its Epoch video card range, **Bluefish444 (stand 7.J07)** is demonstrating advances in its customisable Fluid software and 3D stereoscopic previews. Stereo 3D products from **Blackmagic Design (stand 7.H20)** include the UltraStudio 3D with Thunderbolt technology; the DeckLink 4K capture card;

and the DaVinci Resolve 8 colour correction system with XML import/export support for Apple FCP 7 and Adobe Premiere Pro.

For recording, the Gemini 4:4:4 HD from **Convergent Design (stand 7.A07)** supports HD-SDI, single link, dual-link, 3G, 1080p50/59.94/60, 3D and S-Log with full support for viewing and grading LUTs, and multiple monitors. Meanwhile, **Codex Digital (stand 11.F40)** is showing the Codex Vault for dailies review, deliverables production and archiving of camera content from digital cinema cameras, accompanied by the 1TB Codex Transfer Drive for the transfer of files from production to post.

Post Production

DVS (stand 7.E25) is presenting its DI workstation, CLIPSTER, with an extended feature set. Designed to make working with stereoscopic workflows much easier and faster, CLIPSTER now offers Mezzanine Format Mastering for IMF with extended JPEG2000 support in addition to new DCI Mastering functions. CLIPSTER supports the new AVC-Ultra codec classes from Panasonic, as well as real-time support for JPEG2000, and the RAW formats of a variety of cameras. The integrated STAN (Stereoscopic Analyzer) software is a correction tool that can be used both manually and automatically. STAN analyses and corrects 3D material in real-time, and automatically adjusts the colour for the left and right eyes, among other features. Other DVS products on show include DVS Atomix video boards that feature an extended SDK and support Full HD 3D and 4K resolutions via HDMI 1.4a ports; and VENICE, a multichannel video server for the broadcast market. In addition to high-quality codecs such as JPEG2000 and AVC-Intra Class 200, VENICE also supports the Avid ISIS and Interplay for effortless stereo 3D material handling.

emotion3D (stand 6.A01) is presenting the Stereoscopic Suite X1, a software plug-in for Adobe After Effects that allows stereographers to optimize already-shot 3D film content for any 3D screen. The Stereoscopic Suite X1 allows filmmakers to edit in the third dimension and optimally customise film sequences to any 3D display, whether cinema, home theatre, TV or a mobile device. The software computes a depth map of the scene, enabling new camera perspectives to be rendered as though they had been recorded by additional cameras in different positions. Its tools are designed to be easy-to-use, being highly-automated, fast and robust over a wide range of content types, and a single slider enables stereographers to stretch or squash the 3D space (parallax), while another controls the extent of the pop-in/pop-out effect (convergence). The software is tailored to exploit the acceleration capabilities of multicore processors and

Andy Millns, Co-founder & Director, INITION

What stereo 3D projects are you working on? *I'm currently in post on a 3D promo based on super-slow motion shots of Manchester United players. We shot with two Epic rigs, a Phantom rig and two documentary minicam rigs.*

What has been your stereo 3D highlight of the past year? *See above! This was a fantastic challenge to shoot the promo with only 3 hours access to the players and with 5 rigs simultaneously. I really enjoyed working on a 3D project that was conceived in 3D from the start, working with director Michael Lindsay and DP Brendan McGinty who really understand 3D and are excited by the untapped creative opportunities. My 3D content highlight was seeing Pina.*

What stereo 3D products or services are you looking for at IBC? *Matched lenses, on-set 3D professional monitors, macro 3D rigs.*

Which companies are on your 'must see' list? *3ality Technica, Angenieux, Avid, Iridas, The Foundry.*

www.inition.co.uk

IBC Awards

The IBC Awards on Sunday 11 September at 18:30 in the Auditorium, recognise those who have made a real contribution to the industry and whose careers have had a positive impact on its future direction. This year the shortlist for the Content Creation Innovation Awards includes ONSIGHT and SGO Mistika for 'Post production – Flying Monsters 3D.'

Conference Sessions

Friday 9 September 2011

• Masterclass: When Does 2D-3D Conversion Make Technical and Financial Sense?
Location: E102 Time: 13:30 – 15:00

Saturday 10 September 2011

• Stereo 3DTV Graphics – Investigating the Issues in Depth
Location: E102 Time: 11:30 – 13:00
• Making the Business Case for 3DTV
Location: E102 Time: 14:00 – 15:30
• Stereo 3DTV Production – Preparing For the Next Generation
Location: E102 Time: 16:00 – 17:30

Sunday 11 September 2011

• Getting to Grips with Stereo 3D
Location: Auditorium Time: 10:30 – 12:00
• 3DTV Broadcast Standards – The Complete Picture
Location: E102 Time: 14:00 – 15:30
• EDCF/SMPTE: Dealing with the Mastering and Distribution Challenges of 3D Movies
Location: E102 Time: 16:00 – 17:30

Monday 12 September 2011

• Delivering 3D to the Audience
Location: Auditorium Time: 09:00 – 10:30
• Stereoscopic 3D- Fixing it in Post
Location: Auditorium Time: 11:00 – 12:30
• 3D Live at the Big Screen: Movie and Programme Makers Show How It Works in Real Time
Location: Auditorium Time: 13:30 – 15:00
• A Glimpse into the Stereoscopic Future
Location: Auditorium Time: 15:30 – 17:00

Tuesday 13 September 2011

• 3D and Cable: Technical Challenges and Business Opportunities
Location: Emerald Suite Time: 10:00 – 13:00
• EDCF: Review of Progress in D-Cinema
Location: E102 Time: 10:00 – 13:00

IBC Rising Stars

Saturday 10 September 2011

• From 2D TV to 3D Magic: "Horrid Henry" Through the Looking Glass
Location: Amsterdam Suite Time: 16:00 – 17:00

graphics cards for maximum productivity, and the integrating of its complex sub-pixel-accuracy algorithms into After Effects is designed to ensure a smooth workflow.

SGO (stand 6.A11) is unveiling Mistika version 6.5, launching Mistika Insight - a free educational training module - and is demonstrating the integration of Element Technica's 3D rigs, through bi-directional metadata capability. The Lightworks editor from **Editshare (stand 7.C21)** features advanced stereoscopic 3D capabilities as well as the phase one release from the Lightworks Open Source initiative. **Assimilate (stand 7.H11)** is offering the Windows and Mac-based SCRATCH Six and SCRATCH Lab. SCRATCH Six is a data-centric DI system for the playback, conform, editing, colour grading, compositing and finishing of RED camera and high-end digital workflows; while SCRATCH Lab is designed for on-location workflows and VFX dailies pipelines.

For grading, **Marquise Technologies (Cintel stand 7.B35)** is showing RAIN, a fully-featured colour grading station with real-time image degrain/denoise, stabilization and dust/scratch concealment for any type of image native format (ARRI Alexa, RED, Canon 5D etc) in 2D or stereo 3D. The **Filmlight (stand 7.F31)** Baselight 4.3 software is sporting a major upgrade to its 3D stereoscopic toolset. The company is also showing Baselight plug-ins for Apple FCP and The Foundry Nuke; and the new Blackboard 2 control surface. New features for the **Image Systems (stand 7.A28)** Nucoda grading and finishing products include support for digital cameras, editorial and VFX workflows, onset capabilities, and stereoscopic feature additions including a preview of new fix tools.

The Axis World Graphics cloud-based platform from **Chyron (stand 7D11)** is making its European debut. Designed to simplify, streamline, and facilitate the graphics creation process, Axis World Graphics enables reporters, production assistants, and news producers to create graphics anytime, anywhere. Additionally, Chyron is showing Axis World Graphics integration with Final Cut Pro and Adobe Premiere Pro, and the Chyron BlueNet end-to-end workflow for fast and sophisticated 2D and 3D graphics to air. As part of the BlueNet workflow, Chyron

is highlighting the LEX3.1 and HyperX3.1 graphics systems. LEX3.1 now includes stereoscopic 3D support, and through Lyric PRO graphics creation software, LEX3.1 users gain access to the basic toolsets required to position stereoscopic 3D graphics optimally for left- and right-eye viewing. Chyron's flagship on-air graphics system, HyperX3.1, is designed for sports channels, news stations, and outside broadcasts. It features seamless creation-to-playout capability, real-time 2D/3D animation, built-in stereoscopic-ready 3D, and Lyric PRO 8.

For subtitling, the latest **Softel (stand 1.A27)** Swift family of software for creating subtitles and captions in SD, HD and 3D, supports most formats and languages and transmits them over multiple platforms including the web and mobile. **Screen Subtitling Systems (stand 1.C49)** is offering the new 3D subtitling solution 3DITOR. By introducing depth-mapping technology, this allows subtitlers to deliver high-quality and safely-positioned 3D subtitles.

Conversion & Mastering

YUVsoft (stand 11.F74) is unveiling 2D to 3D Suite, a 2D-to-3D conversion software package designed for film post-production companies, VFX companies, and 3DTV studios. 2D to 3D Suite automates 2D-to-stereo and 2D-to-2D+depth conversion, providing mid-level quality and minimising the amount of manual input required. It is also designed for accelerating and reducing the cost of several stages of high-quality depth-based 2D-to-3D conversion using rotoscoping. The software is available as a set of plug-ins for Adobe After Effects CS5 or later, and a version for The Foundry Nuke is scheduled for release soon. Key features include automatic generation of plausible depth maps so that rotoscoping may only be necessary for important objects; depth propagation from key frames to decrease the number of frames when rotoscoping is required for all or just a few objects; and a high-quality stereo generator that provides fully-automatic stereo generation from 2D+depth.

For real-time 2D-to-3D conversion, as well as serving as a 3D L/R mixer for monitoring 3D footage on location, the updated **JVC (stand 10.D41)** IF-2D3D1 Stereoscopic Image Processor features a new processor and a new algorithm for automatically creating more accurate emboss data for human faces. The user can confirm output in real-time, adjust depth, and limit the amount of parallax. Meanwhile, **SterGen (Vizrt stand 2.A31)** is showing a real-time 2D-to-3D sports footage conversion product that can be placed anywhere in the video path. The company claims that in many cases, the result is even better quality and depth perception than native 3D shooting!

For format conversion, **Doremi (stand 10.B10)** is showing the Dimension-3D. This uses stereo codecs and offers any-to-any video/cine conversions, allowing, for example, HD recorders to work with 3D. The Medway media transfer and format conversion software from **Marquis Broadcast (stand 2.A58)** now features subtitle preservation throughout editing workflows, and metadata support for the frame-accurate requirements of 3D/proxy production.

The QubeMaster Xport digital cinema package (DCP) from **Qube Cinema (stand 7.F45)** provides Final Cut Studio users with a seamless workflow, from editing through finishing and DCP mastering. Stereo 3D and 4K modules can be added.

Servers

EVS (stand 8B90) is introducing Sports360°. This new concept aims to help sports content owners, broadcasters and facility companies to address multiple markets such as TV, web, mobile phones, tablets or connected TV. Sports360° covers all aspects of sports production and multi-platform delivery, including: enhanced live production with high-end replays, on the fly editing, new ultra motion control capabilities, overlay graphic analysis or 3D replay and super-motion operations; sports highlights and immediate media access and exchange with post-production; logging and statistics integration; mobile, web streaming and multi-channel delivery; second screen applications; and sports archive management. EVS offers servers, disk recorders and editors for applications such as live 3D editing and 3D SuperMotion slow-motion replay. The company is also showing a complete set of tools offering IT and broadcast technologies for news and production.

The SMS-4U HDTV broadcast video server from **BLT Italia (stand 8.A68)** records up to 6 independent video sources or performs super-slow motion with a high-speed camera up to x3 speed. It supports dual-stream operation for 1080p and 3D-HDTV.

Distribution

Sisvel Technology (stand 13.106) is demonstrating the complete 3D chain, from live 3D shooting to home reception. Two on-set 3D cameras will shoot live from different angles, and the live feed will be linked to a professional panelizer, a mixer, and an advanced encoder to allow the operator to switch online between the two cameras. At the receiving end, prototypes of an Antik Technology set-top-box and a Vestel TV set that are capable of decoding the 3D Tile Format will be shown. The Sisvel Technology 3D Tile Format integrates two 720p frames within a single 1080p frame, for delivery over existing HD infrastructure. It is backwards compatible, allowing viewers not equipped

for 3D to view the transmission as 2D images on their Full HD sets. The reconstructed right and left images maintain their original 720p spatial and temporal resolution, giving viewers of both 2D and 3D versions the full benefit of the original picture, and allowing the transmission of both versions without the need for increased bandwidth.

For digital content distribution, **International Datacasting (stand 1.C29)** is showing the Pro Cinema solution that features a multi-screen live event capability supporting high-frame-rate delivery in both 2D and 3D. **Ericsson (stand 1.D61)** is demonstrating a 3D solution for contribution and distribution, as well as direct-to-home delivery of 3D content. **Vimond Media Solutions (stand 2.A31)** is showing 3D adaptive streaming as a new solution for live and VOD streaming in 3D to web and connected TV. **Bluestreak Technology (stand 13.123)** is promoting its Video Everywhere concept for the delivery of content from traditional TV services, OTT vendors, and social media into connected devices, with a demonstration of both 3D content and interactive features.

Media Players & STBs

Triaxes (stand A28) is showing the Triaxes 3D Media Player. This autostereoscopic device plays back 3D video received over IP or DVB-T or stored on flash drive via USB port, and allows real-time control of 3D depth for foreground and background. Also for glasses-free viewing, **iPONT (SES ASTRA stand 1.B51)** is showing a wide-angle 42" autostereoscopic LCD screen with its proprietary 3D TV box, a device that streams real-time 3D broadcast content from a satellite receiver to the display.

Other delivery products include a high-end hybrid IPTV set-top box from **Antik Technology (stand 13.313)** and new set-top boxes from **Pace (stand 1.B19)**. The latter support full HD and 3D, are IP ready, making them able to receive OTT, on-demand and broadcast content, and provide integration into Wi-Fi, powerline or coaxial home networks.

David Wood, Deputy Director, Technology and Development, European Broadcasting Union
What stereo 3D projects are you working on? *My 3D projects are the standardisation work of the ITU and the DVB Project. I have the honour to chair the ITU-R Working Party concerned (WP6C) and the DVB Commercial group on 3DTV.*
What has been your stereo 3D highlight of the past year? *Forgive my xenophobia, but the most important events of the past year have been the standardisation of the DVB 'frame compatible' 3DTV broadcast format (which included special measures for subtitles) in February 2011. We needed to get this agreed and published to avoid fragmentation of broadcast systems. We also started work this year on a 'Phase 2' 3DTV system which is intended to provide, among other features, full resolution left and right images. In the ITU-R WP6C we have begun work on guidelines for 3DTV programme production. As everyone knows, using production grammar that minimises eye discomfort is an absolute must, if 3DTV is to succeed.*
What stereo 3D products or services are you looking for at IBC? *I'll be looking out for professional 3D TV programme production equipment, principally cameras, and 3D editing and optimisation suites.*
Which companies are on your 'must see' list? *For 3DTV production, it has to be the Sony and Panasonic 3D cameras, and probably JVC. But if you are a 3DTV-ite, you have to visit the NHK Super High Vision demo, to judge for yourself how much 32 Megapixels of UHDTV create 'depth' in the pictures.*
www.ebu.ch

Displays

JVC (stand 10.D41) is showing two RealD-compatible 3D monitors. The GD-323D20 32" passive monitor is aimed at post production and medical applications, being IEC60601-1 and IEC60950-1 compliant. It offers 2x HDMI 1.4A inputs and 2x HDSDI inputs, each with a mixer function, and an optional protection screen for use in surgical theatres. Meanwhile the 24" DT-3D24G1 3D production monitor, which can be battery powered, supports virtually any 3D camera setting, and offers advanced image alignment tools and 1920x1200 pixel resolution with 10-bit digital processing.

Burton (stand 8.G48) claims to be first in developing true 3D display using laser plasma technology. It offers the SRV (Super Real Vision) compact display which it says will help in producing images like Princess Leia in Star Wars.

Gefen (stand 7.B30) is showing its Mini Signal Generator for HDMI 3DTV. This supplies all displays and projectors using HDMI with test patterns for calibrating video performance, HDCP verification and all aspects of HDTV including 3DTV.

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Stand **13.106**

SISVEL TECHNOLOGY

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