3Droundabout IBC 2012

Stereoscopic 3D Product & Technology News

Welcome to the 3Droundabout stereoscopic 3D supplement for IBC 2012. This serves as a quick reference to products, technology, exhibitors and events at IBC for stereoscopic 3D content creation, delivery and display. Further coverage can be found at **www.3droundabout.com/3d-ibc-2012**.

Everyone kept asking 'How do we see the Olympics in 3D?' The appetite was there, but the opportunities were rare. Those lucky enough to have seen the Panasonic Showcase at the Olympic Park were treated to some wonderful 3D shots of the Opening Ceremony, kayaking and gymnastics. It may be an obvious thing to say, but 3D really does bring a new dimension to the sports viewing experience, and with the Olympics having energised the public's appetite for sports of all kinds, it is surely this that will be a primary driver of 3DTV take-up.

The main obstacles are often cited as a lack of content and the need for glasses. At IBC 2012, you will find exhibits and conference sessions that roundly address these issues. Plus, don't miss the IBC Big Screen which is showing 4K and stereoscopic 3D digital projections, the IBC Production Village where you can get hands on experience with the latest equipment, and the Future Zone featuring tomorrow's electronic media from leading broadcast R&D labs.

Whatever your 3D requirements, we hope this supplement helps you find the right solutions and information for a very enjoyable 3D IBC 2012! (And if you find this useful, do let us have your feedback.)

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3Droundabout is an online trade publication for stereoscopic 3D content creation, delivery and display focusing on the EMEAA region. A free newsletter subscription form is available at www.3Droundabout.com.

Acquisition

Meduza Systems (stand 9.C26) is showing the latest version of the Meduza TITAN two-lens full-HD single-camera 3D system. Aimed at any application, including sport, live action, drama and natural history, this lightweight, compact and fully remote-controllable 3D camera has been built from the ground up to provide the specific tools needed to produce the highest level of matched stereoscopic images in a flexible range of resolutions and formats. The camera offers all of the usual controls expected of a rig but are now provided in a compact single unit, and is ready to go straight out of the box. All standard frame rates up to 60fps are supported with 4:4:4 and 4:2:2 10-bit colour sampling, as well as uncompressed RAW. The interaxial (38mm - 110mm) and convergence (5 degrees) are both motorised and wirelessly controlled by a hand unit. Meduza also produces its own matched-pair lens series called the Delta 4K S3D. There are eight focal lengths in the set and each pair is matched to three decimal places. IBC 2012 is the launch point for a six-month World Demo Tour of the Meduza TITAN covering 26 countries, more details of which are available from Meduza via meduzasystems.com.

P+S Technik (stand 11.F80) is showing the PS-Micro Rig as a compact and lightweight beamsplitter mirror stereo 3D rig. This compact design includes all of the features a professional beamsplitter 3D rig needs, and its operation is tool-free. It has built-in motorised interaxial control from 0-70mm, can shoot parallel or converged, is compatible with Manfrotto base plates, and is optimised for handheld, Steadicam and small crane use. P+S Technik is also showing the PS-Cam X35 MotionFX camera designed for normal shooting rates and rates up to 450fps in slow motion, fast motion, ramped motion, and time lapsed motion.

3ality Technica (RED Digital Cinema stand 3.A55) is featuring the Helix rig. This is the result of the combined efforts between the former designers and engineers from 3ality Digital and Element Technica, who have combined magnesium, carbon fibre and aluminium to form a precise and configurable automated camera platform. The Helix was designed from the ground up to take advantage of the new IntelleSuite enhanced control and automation software, and it can be seen in action at the RED Digital Cinema stand being used with RED Epics.

BSI (stand 5.B20) is demonstrating a new 3D wireless camera package for live broadcast, featuring return vision, camera control and remote convergence. The demonstration involves an integrated Panasonic 3D camera, with low delay encoding, and full camera

3D Exhibitor List

(Visit 3Droundabout.com/3d-ibc-2012 for updates.)

3ality Technica 3.A55
3D VIVANT 8.F49
Adobe Systems 7.G27
Adtec Digital 1.D01
AJA Video Systems 7.F11
Albiral 10.A42
Albis 14.542
Altera 8.A31
Antik Technology 14.434
ARRI 11.F21, 11.G36
ASSIMILATE 7.H11
Aston Group 2.C38d
ATEME 1.F70
ATG Broadcast 8.B51c
Avid 7.J20
Autodesk 7.D25
Axon Digital Design 10.A21
B & H 10.A01
Band Pro Munich 11.F41
Barco Silex 10.D31
Binocle 11.F61c
Blackmagic Design 7.H20
BLT Italia 8.A64
Bluefish444 7.J07
Bluestreak Technology 14.551
Brainstorm Multimedia 2.B59
BSI 5.B20
Camera Corps 10.C49
Casablanca On Line 5.B11e
Cel-Soft 10.C49
Cinedeck 10.B44
China Ruige 11.C77
Christie 9.C30
Chyron 7.D11
Cmotion 1.E39
Convergent Design 7.D01
Dataton 8.E966
DataDirect Networks 7.C30
Dayang 7.B35
DeCS Media 8.G49
DEEP VISION 8.B30g
Digital Vision 7.E30
Dolby 2.A31
Doremi 10.B10
DVB 1.D81
EBU 10.F20
Egripment BV 11.A21
Elrom Studios 3.A19g
ETRI 9.B41
EVS 8.B90
Eyeheight 8.B97
F.A.Bernhardt 2.A21
FilmLight 7.F31
Fraunhofer 8.B80
Gefen 7.B30
GlobeCast 1.A29
Grass Valley 1.D11, 1.E02
Hamlet 9.D10
I-MOVIX 11.D75
Ikonoskop 11.A71
Image Matters 10.D31
IDC 1.C29
INTOPIX 10.D31
IO Industries 9.A04
ISU 5.B46j
JVC 10.D45
Leader Instruments 8.A22
Lightcraft 9.A01
LMP Lux Media 10.F21
Loft London 10.A10
Marshall Electronics 11.D20
Matrox 7.B29
Maxon Computer 6.C10
Meduza Systems 9.C26
Metracom 2.C38e
Microfilms 11.E71
Movicom 9.A05
MSV 7.J49
National Instruments 8.D71
NVIDIA 7.B17
NewTek/3D Storm 7.K11
Olympus 9.B49
Omnitek 6.A18
Orad Hi-Tec Systems 7.B27
Panasonic 9.C45, 9.D35, 9.D40
P+S Technik 11.F80
Pixel Power 7.A31
Polecam 10.C49
PURE4C 9.A55
RED Digital Cinema 3.A55
Qube Cinema 7.F45
Quantel 7.A20
Rohde & Schwarz DVS 7.E25
Remote Solution Co 4.B78b
Ross Video 9.C23
Screen Subtitling Systems 1.C49
Satlink 5.A21
SES ASTRA 1.B51
SGO 6.A11
Sisvel Technology 5.A17
Softel 1.A27
Snell 8.B68
Softlab - NSK 7.A05
Software Mind 14.431
Sony 12.A10
Stereolabs 11.F61a
Stereoscopic Tech 11.C84
SterGen Hi-Tech 7.A10
Studiotech 8.A68
T-VIPS 1.B71
Tektronix 10.D41
Technicolor 14.C10
Telecast Fiber Systems 10.B39
TestVid/VidCheck 9.B24
Thales Angenieux 11.F31
The Foundry Visionmonger 7.B21
The Pixel Farm 6.C18
Thomson Broadcast 14.B20
Thomson Video Networks 14.A10
Tiffen 11.G30
TVLogic 10.D26
Transvideo 11.F30
TV Skyline 11.C70
Visual Research 7.J30
Vizrt 7.A10
Vocas Systems 11.D43
WASP3D 3.B62
xtr3d 3.A19w
YUVsoft 7.A01

control. This system uses BSI's dual-stream mini encoder/transmitter to carry the two signals simultaneously, ensuring synchronous signals.

The SIMPLY SMPTE from **Camera Corps (stand 10.C49)** compact remote camera link is making its European debut. This allows any remotely-controlled camera system in the company's product range to be operated over long distances via SMPTE 3K-standard electrical/optical cable. Camera Corps is demonstrating SIMPLY SMPTE as part of a complete system including the established Q-Ball and the new Q-Ball Pre-Set compact remote pan/tilt/zoom/focus cameras. Camera Corps' CC-3D Universal RCP allows six cameras of different makes and models to be remotely controlled from a single panel. For 3D applications, up to two stereoscopic rigs can be controlled on a paired-camera basis to maintain predetermined adjustment offsets between left and right cameras.

Panasonic (stands 9.D35, 9.D40 and 9.C45) is showing the AG-3DP1 integrated twin-lens camera/recorder for broadcast-level 3D. This incorporates two pairs of 1/3 type full-HD 2.2 megapixel 3-MOS imagers with enhanced sensitivity and a 20-bit DSP to acquire full production quality, native 1920 x 1080 resolution images. As with the Panasonic AG-3DA1 3D camcorder, the 3DP1 incorporates stereoscopic adjustment controls including convergence, as well as automatic correction of horizontal and vertical displacement. There is also a new convergence assist function. The 3DP1 records in AVC-Intra 100/50 and is 50Hz/60Hz switchable. It is equipped with dual optical, wide 17x zoom lenses and can record for up to 80 minutes on dual 64GB P2 cards in AVC-Intra 100 1080/24pN. Panasonic is also showing some 3D sporting action footage including coverage from the London 2012 Olympics.

In addition to the PMW-TD300 professional 3D camcorder and the HDC-P1 compact POV-style HD camera for 3D applications, **Sony (stand 12.A10)** is offering the i3DPS self-contained modular solution that provides an entry level to 3D content production. Designed as a modular flight case system, i3DPS is based on the Sony MPE-200 multi-image processor that allows lens differences to be controlled and corrected automatically. The MPE-200 works best with metadata-enabled cameras such as the Sony HDC-1500R and HDC-P1, but is also compatible with any stereo camera rig and HD cameras.

Conversion

Blackmagic Design (stand 7.H20) is offering new Teranex 2D and 3D processors. This family of high-end broadcast standards converter processors adds improvements to the previous generation of Teranex VC100 design, such as dramatically reduced size and cost, whisper-quiet operation, new connection with technologies such as HDMI, analogue, upgraded 3Gb/s SDI, independent AES/EBU and balanced analogue audio connections, as well as adding new Thunderbolt capture and playback technology.

Matrox (stand 7.B29) is showing the MC-100 mini-converter for managing SDI signals for monitoring, distributing, switching, multiplexing, or converging 3D. Designed to be easy-to-use and eliminate the need for multiple devices, the portable MC-100 supports a wide range of display resolutions through 3G, Dual Link, HD, and SD-SDI and can be used as an HD-SDI switcher, a distribution amplifier, a multiplexer and a 3D processing unit.

Monitoring and Analysis

Cel-Soft (stand 10.C49 with Polecam) is introducing new features to its Cel-Scope3D stereoscopic content analyser software. Designed for use in 3D grading, quality-control, post-production and for 3D camera set-up, Cel-Scope3D offers operators a wide choice of display configurations. These include a novel depth spectrogram which plots all depth activity and excursions against time. With version 2.5, any feature on any display window can now be magnified for closer inspection. Also new is x10 contrast enhancement in the 'onion skin' difference mode. A new Frame Shot facility allows two-way interaction between one operator and another; a Pixel-Probe provides the ability to analyse and find dead, lazy or stuck pixels automatically from the left or right channel, and detect optical blemishes. Cel-Scope3D 2.5 can analyse file-based content as well as live or recorded signals in dual-stream or multiplexed formats. It allows stereoscopic camera alignment to be performed quickly, ensuring 3D is accurate from the moment of capture. Footage and edits in a wide range of file formats can be viewed and assessed in real time, with disparities being analysed and displayed as clear and intelligible graphics on 2D or 3D monitors.

The LV 5980 17-inch SDI waveform and video monitor/analyser from **Leader Instruments (stand 8.A22)** is making its European debut. Designed for live production, post-production and technical support, the LV 5980 incorporates a 17-inch TFT display for monitoring up to four SDI signals simultaneously, allowing rapid comparison of gain and black balance values from multiple cameras. Video signal waveform, vector display, picture and multiple input signals can be displayed simultaneously. The LV 5980's 3D-Assist option can evaluate stereoscopic content by applying the right signal to channel A and the left signal to channel B. It supports anaglyph, convergence, overlay, and wide display formats.

Dashwood Cinema Solutions (represented by Noise Industries at CPUG Network Amsterdam SuperMeet) is announcing a turnkey rack-mountable hardware version of Stereo3D CAT stereoscopic calibration and analysis software for Max OS X. This turnkey solution allows for the bundled hardware/software combination to be installed in any 1U rackmount on typical DIT or convergence carts. All the user needs to do is plug in 3D HD-SDI sources, monitor and mouse and it is ready for production. Stereo3D CAT rackmount bundle is offered with either a Personal or Full software license. The Personal license includes the same parallax line guides, left/right solo, anaglyph, split displays, QuickTime playback, Stereo3D Visualizer, Depth analysis, side-by-side, line-by-line, checkerboard, superimpose, difference, Parallax Inspector, Alignment Tracker, 3D waveform/vectorscope, variable interaxials and online technical support. Live geometry correction, metadata logging, IMAX screen sizes, external output and phone support are only included with a Full license.

TestVid (stand 9.B24 with VidCheck) is launching a test video suite designed to provide all the 4K 3D test video material that a broadcaster or equipment provider could need. Supplied on USB hard disk, the video is provided as 3D uncompressed 4096x2304 12-bit 4:2:2 in YUV format, with a utility program allowing conversions to other resolutions and formats.

Stereolabs (stand 11.F61a) is launching VERITY 3D quality control software. This is aimed at content providers, post-production houses and broadcasters, and is designed to speed up post-production and quality control work by eliminating the long error search process. It automatically verifies file-based stereoscopic content prior to transmission or use, and performs extensive checks of video files against user-defined quality thresholds for geometric, colour and depth errors. VERITY analyses stereo content frame by frame to detect any image mismatch or depth errors. Tests include alignment, scale and focus checks, depth tests, luminance, chrominance and gamut analysis.

Cinedeck (Oxygen DCT stand 10.B44) is showcasing the full range of its rack-mounted and portable solid-state recording, monitoring and playback systems. Cinedeck MX, RX Broadcast, RX Cine/444 and EX systems offer a choice of codecs and operational toolsets for creating ready-to-edit files, and helping to eliminate time-consuming ingest/transcode processes. Along with small form factors, they all feature a proprietary touchscreen interface that is designed to reduce training time. Cinedeck RX Cine/444 and Cinedeck EX also include Cinedeck's new 3D stereo visualisation and monitoring tools for on-set/near-set playback and checking of 3D stereo material as soon as it has been shot.

Eyeheight (stand 8.B97) is showing the LE-3D dual-channel 3D video legaliser. This offers a simple way of helping edited stereoscopic programmes pass broadcasters' technical quality-assurance requirements. Legalisation parameters for left and right video channels can be adjusted from a single operating panel, ensuring precise compliance with industry standards. For those requiring a stereoscopic colour corrector and legaliser in a single unit, Eyeheight is offering the CC-3D. This allows unified control of both channels of a stereoscopic 3D pair. The integral legaliser automatically ensures that adjustments remain within industry-agreed signal levels. Default legalisation settings are to EBU R103-2000, and alternative legalisation parameters can be set and stored.

Production and Playout

With a view to solving the problem of a lack of 3D content for broadcasters, **Stergen (stand 7.A10 with Vizrt)** is demonstrating full 2D to 3D conversion of sports events. Using a geometrical analysis of the entire playing space, SterGen generates a virtual second eye camera that, combined with the original 2D camera, produces true stereoscopic 3D video in real time. SterGen's technology also offers an advantage over native 3D productions

IBC Production Village

Production technology is changing fast. DSLRs bring new creative possibilities for directors searching the elusive film look. High speed cameras have moved into the mainstream, delivering the most extraordinary insights in sports and entertainment and the pressure to deliver stereoscopic 3D television is driving innovation. Centred around a professional standard studio set, the IBC Production Village in Hall 11 offers hands-on experience with the very latest production technologies.

Future Zone

The Future Zone provides a glimpse into the future of tomorrow's electronic media. This collection of concepts and prototypes exist only in the world's leading broadcast R&D labs, or as academic papers, until they are demonstrated here. This year's Future Zone exhibitors with a stereoscopic 3D component are Project FINE, 3d VIVANT and ETRI. In addition, NHK will present the latest developments in Super Hi-Vision including a new 33-megapixel CMOS image sensor operating at a frame frequency of 120Hz and an 85-inch LCD display with a frame frequency of 60Hz.

The IBC Big Screen

With capacity for 1,700 people and boasting facilities for 4K and stereoscopic 3D digital projection, with audio presented in Dolby 7.1 surround sound, the IBC Big Screen plays host to numerous presentations and conference sessions, as well as exclusive movie screenings.

The IBC Movie screening on Saturday 8 September will be Prometheus in Stereoscopic Dolby 3D and Dolby 7.1 courtesy of Twentieth Century Fox International.

On Monday 10 September, the IBC Big Screen Showcase will be the world's first screening of a feature length movie using laser projection technology presented by Christie, and the first public screening of a 3D movie mastered and shown at full 2D movie specification brightness (14 FL).

IBC Awards

The IBC Awards on Sunday 9 September, in the Auditorium encapsulate everything that is positive about electronic media and entertainment, highlighting collaboration and those who push the boundaries. This years' Best Conference Paper Award will be presented to researchers from the Fraunhofer Heinrich Hertz Institute for their paper 'Fully Automatic Stereo-to-Multiview Conversion in Autostereoscopic Displays.'

by solving the 'flatness' problem created in wide angle shots (the high cameras), which constitute 60%-80% of the sports broadcast. SterGen's GUI allows the interaxial distance to be changed, thereby increasing or decreasing the intensity of the 3D effect. SterGen also deals with the low cameras where players appear in front of a complex background. The system automatically identifies cuts and applies the proper algorithm and parameters for the current on-air camera. SterGen is showing how the system works in different sports with different camera positions for football (soccer), tennis and baseball.

Version 5 of the **Rohde & Schwarz DVS (stand 7.E25)** CLIPSTER DI workstation offers a DCI validation tool and the ability to generate mezzanine formats such as IMF. In stereoscopic workflows, CLIPSTER offers automatic analysis, correction and quality control, and the new 3D correction tool helps with 3D presetting of 3D DCPs and deliverables. CLIPSTER performs quality checks based on the 3D depth histogram and includes additional configurable thresholds for maximum disparities.

Brainstorm Multimedia (stand 2.B59) is featuring its Studio on-air graphics and virtual studio engine - the platform upon which all other Brainstorm products run, including EasySet 3D, a cost-effective, trackless virtual set solution. EasySet 3D is designed to provide a 3D real-time environment with stereoscopic capabilities, integrated chroma keyer, up to four SD/HD inputs, and a live switcher mode with up to 12 live simultaneous productions for easy transition between 3D cameras from a single PC.

For those requiring graphics, **Pixel Power (stand 7.A31)** is offering Clarity. This can create, manage and playout premium broadcast graphics including social media, and is being demonstrated in scheduled, live and online production applications. On display are new features that enhance Clarity's graphics including the creation of real-time 3D graphics for news and sports, social TV audience interaction and workflow improvements such as automatic up/down scaling of SD and HD content prior to playout. Clarity includes full support for stereoscopic 3D graphics, with real-time control of depth and separation allowing great flexibility at the point of playout. The stereoscopic 3D creation process is identical to that used for planoscopic 3D graphics, making the process familiar and easy-to-use.

Bluefish444 (stand 7.J07) is showing a new Windows driver V5.11.1, enabling 3D HD-SDI preview from within Assimilate SCRATCH and SCRATCH Lab. Bluefish444 has collaborated with Assimilate to develop a freely-available plug-in to enable SCRATCH customers to preview their workflows, including stereoscopic 3D workflows, in native HD-SDI.

Image Matters (stand 10.D31) is making its European debut and is showing a new system for digital cinema high-frame-rate-quality evaluation. The system delivers playback of JPEG 2000 codestreams at bitrates in excess of 1Gb/s - more than four times the current DCI specification. The decoded 2K images are transmitted to the projector at a frame rate of up to 120fps (or 60fps per eye for stereoscopic 3D content). To allow the easy production of multiple encoding formats, the system can encode high-frame-rate content from uncompressed files in near real-time.

Qube Cinema (stand 7.F45) is showing how its Quad 3G interface for digital cinema projectors facilitates digital intermediate and D-cinema mastering workflows. Post facilities can now use the same server-projector setup for both HD-4K uncompressed colour grading and 2K-4K digital cinema playback for comprehensive review and quality control. The Qube XP-I server has a data throughput of up to 1000Mb/s, enabling 4K 3D dual-projector playback from a single server running a single DCP.

Post Production

Quantel (stand 7.A20) is launching Pablo Rio. Previewed at the NAB Show as 'new Pablo', Pablo Rio is now a fully-fledged high-end colour and finishing software product that is designed to be interactive and open to the modern 2D and stereoscopic 3D post world. Pablo Rio can run on the user's own hardware and storage, but is also available as a range of fully-configured and tested turnkey systems based on the latest PC hardware. Designed to integrate into today's data-centric post pipelines, it works across a wide range of data formats including high frame rate, stereo 3D, OpenEXR, RED HDRx, Sony F65, Arri RAW, Canon, Phantom, Silicon Image and even GoPro.

Grass Valley (stands 1.D11 and 1.E02) is demonstrating a new systemised version of the EDIUS editor that is specifically designed to provide comprehensive interoperability with the Grass Valley K2 Summit platform and Grass Valley STRATUS media workflow application framework, enabling fast-turn-around production in environments such as news and studios. EDIUS Elite, which is based on EDIUS Pro 6.5, has native support for raw footage captured with digital cinematography cameras, including those from RED Digital, as well as comprehensive 3D editing tools and 3D workflow support.

FilmLight (stand 7.F31) is showing a number of enhancements to the stereoscopic 3D toolset within the Baselight colour grading system. These include a high-quality disparity/depth histogram for stereoscopic quality control and other purposes; the ability to generate a whole disparity map between the two eyes to enable a depth key that can be used for grading; an enhanced colour

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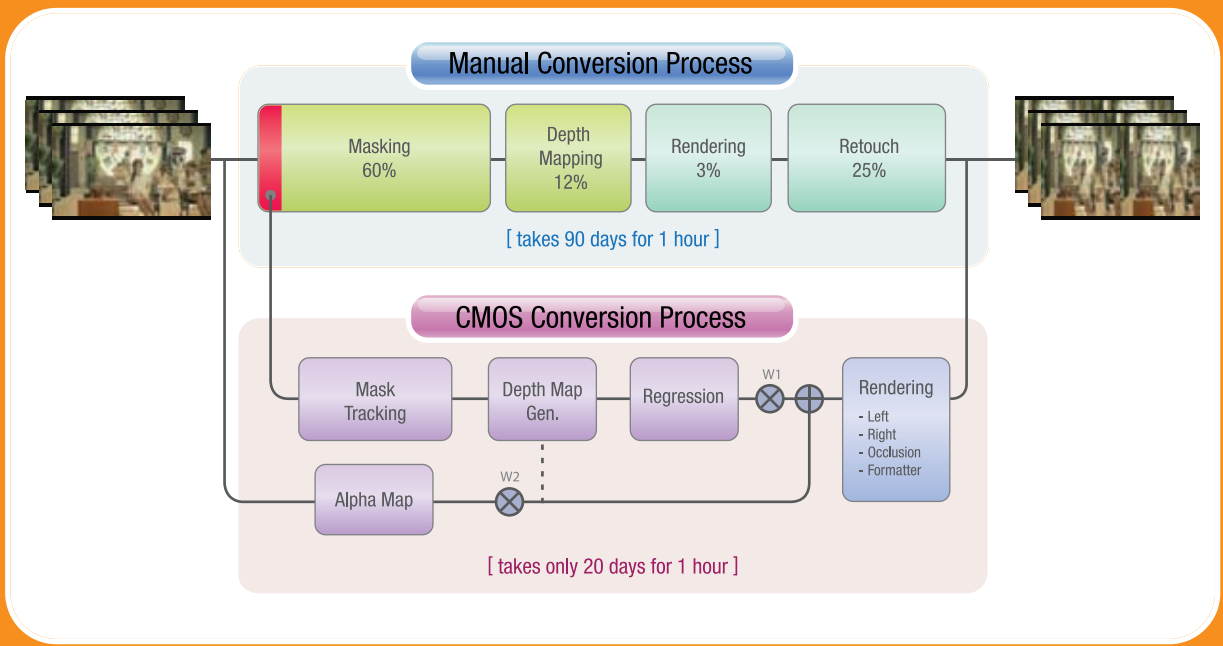

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Conference Sessions

Thursday 6 September 2012

• Cutting Edge 2 – New Ultra High Resolution Displays and Imaging
Location: Emerald Room
Time: 16:00 – 17:30

Saturday 8 September 2012

• Keynote: The London 2012 Debriefing: Analysing the Summer Olympic Games
Location: Forum
Time: 09:30 – 11:00
• DVB Project: Technologies in Action and their Impact
Location: Emerald Room
Time: 11:00 – 13:00
• Turning Olympic Games Spectators Into Participants: Broadcast Tools & Technology Of London 2012
Location: Forum
Time: 11:30 – 13:00
• The Business Of Live Production – Is Transformation Overdue?
Location: E102
Time: 16:00 – 17:30
• EBU: Prepare Today, Prosper Tomorrow: Future-Proofing for Broadcasters
Location: Emerald Room
Time: 16:00 – 18:00

Sunday 9 September 2012

• Production – New Technologies and Practices in Image Capture
Location: Emerald Room
Time: 12:00 – 13:30
• Stereoscopic 3D Content and Display – Developments and Diagnoses
Location: E102
Time: 14:00 – 15:30
• EDCF/SMPTE: Cinema Workshop – Strictly For Techies
Location: Emerald Room
Time: 16:00 – 17:30

Monday 10 September 2012

• Immersive Audio: The Next Dimension
Location: Emerald Room
Time: 09:30 – 11:00
• Exploring 3D: The New Grammar of Stereoscopic Filmmaking
Location: Auditorium
Time: 09:30 – 11:00
• Why Budget Wary Producers Should Wake Up To Stereoscopic 3D
Location: Auditorium
Time: 11:30 – 12:30
• 3D ENG – Making 3D Flexible and Agile
Location: E102
Time: 15:00 – 16:30

Tuesday 11 September 2012

• EDCF D-Cinema Update
Location: E102
Time: 10:00 – 13:00

matcher to equalise the colour differences between the stereo pair; and a new way of organising stereo scenes.

SGO (stand 6.A11) is showcasing Mistika DI and stereo 3D production solutions that support timeline-based editing, conforming, infinite layer compositing, colour grading, optical flow-based motion estimation and image restoration. Version 7.0 features a new colour grading system that provides unprecedented levels of control over every aspect of the image and, as with all functions in Mistika, is ready for 2D and stereoscopic 3D productions using standard or high frame rates and at all resolutions. Mistika also now supports the export of disparity maps to Nuke, and there are plans to add a feature to create a high-quality 'second eye' from a single eye and disparity map, which is intended to help rescue 3D shots that would otherwise be unusable.

The latest version of the Digital Vision (stand 7.E30) Nucoda grading and mastering system includes a new, automated 'S3D Colour & Align' tool. This allows users to automatically match 3D cameras, with advanced motion estimation technology providing morphing and colour matching capabilities.

Blackmagic Design (stand 7.H20) is showing the DaVinci Resolve 9 colour correction system with a completely redesigned user interface for accelerated workflow speeds. DaVinci Resolve 9 features technologies such as automatic 3D eye matching, multi layer timelines, XML support and more camera and file type support, all of which can be accessed and controlled in a much faster way - a job can be up and running in three clicks. DaVinci Resolve 9 is packaged to provide high performance in a low cost solution which can be easily upgraded by adding extra GPUs for supercomputer power to handle 4K resolutions, stereoscopic 3D and real-time grading direct from raw camera files such as ARRI raw, RED raw R3D and Sony F65 files.

Avid (stand 7.J20) is demonstrating the comprehensive 3D toolset and open platform nature of Media Composer 6. The system has a new user interface, supports AVCHD editing, has a new DNxHD 444 codec and an advanced mixer for creating 5.1 and 7.1 surround audio.

Distribution

Sisvel Technology (stand 5.A17) is exhibiting an entire 3D broadcasting chain, from live 3D content to video encoding and distribution using its 3D Tile Format, and high-resolution 3D transmissions that are backwardly compatible with 2D TV sets. Sisvel Technology is also demonstrating how to reach 2D and 3D audiences via a single H.264/AVC-frame-compatible video stream. High-quality 3D Tile Format content is being broadcast live and is also available for viewing on an IP platform that is provided in collaboration with Allied Telesis and CSP. Also on show are glasses-free high-quality 3D Tile Format content, provided by Dimenco and DepthGate software that has been developed by Triaxes; and exciting 3D content that has been broadcast by regional, national, and international television networks including Quartarete, 50canale, SES and VTV.

Adtec Digital (stand 1.D01) is debuting the EN-91P, a 1080P AVC 3D/HD/SD encoder that offers fibre SFP video input. Paired with the RD-70 Integrated Receiver/Decoder, this video encoder can deliver 1080P HD-SDI with end-to-end delays of only 1 or 3 frames using a fraction of the bandwidth required for Motion JPEG. The EN-91P and RD-70 are fully interoperable with leading third-party receivers and encoders.

The Futhura range of cost-efficient, high-power digital reference transmitters by Thomson Broadcast (stand 14.B20) is now equipped with an increased UHF wideband operating range from 1.6kW to 11.6kW. The Futhura GreenPower transmitter features a new exciter platform with support for all major standards and DVB-T/DVB-T2 dualcast capability. With IP input and MPLP capability, the transmitter is optimised for robust delivery of diverse services within a single channel, including mobile, SD, 3D, HD, and digital radio.

Display

Albis Technologies (stand 14.542) is demonstrating the new SceneGate Micro II, a compact set-top box that is designed to guarantee a high-quality experience for end users. This HD IPTV STB is capable of delivering linear TV, VoD, OTT, and PVR services, with HD resolution up to 1080p via an HDMI 1.4a interface. It is also 3DTV ready, enabling service providers to deliver a more exclusive service offering.

For professional 3D production operators, Sony (stand 12.A10) is offering LCD monitors that use a 3D circular-polarizer system, whilst for 3D theatre projection, Sony has teamed up with RealD to provide the Sony Digital Cinema 4K projector. This shows two images simultaneously through a dual lens adapter, thus eliminating triple-flash artefacts and providing high-luminance, full-resolution stereoscopic presentation.

Last, but certainly not least, Europe's first demonstration of glasses-free Dolby 3D is being hosted by Dolby (stand 2.A31). The Dolby 3D glasses-free 3D suite of technologies was developed by Dolby and Philips Research and is being applied to both 3D content and displays. The end-to-end suite allows broadcasters to deliver full HD 3D resolution content to any screen to provide consumers with glasses-free viewing on all 3D-enabled devices.

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