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CX

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THE INTEGRATION ISSUE

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*Cover Photo – Integrate 2018

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VTX : A-SERIES **A12 | A12W**

Cmi Audio

Melbourne's Arts & Entertainment precinct

Melbourne's Arts Precinct Redevelopment.

Melbourne's NH Architecture and Norway's Snøhetta have been appointed to deliver the Arts Centre Melbourne's vision for the future of the Theatres Building, including addressing specific critical maintenance issues. The team will create an integrated design for the footprint of the Theatres Building, incorporating design for the Critical Asset Maintenance project to minimise redundant works in the future as the organisation progresses with a major redevelopment.

The Critical Asset Maintenance project and the continued development of Reimagining Arts Centre Melbourne's Masterplan are supported by the Victorian Government as part of the $208 million first stage of the transformation of Melbourne's Arts Precinct.

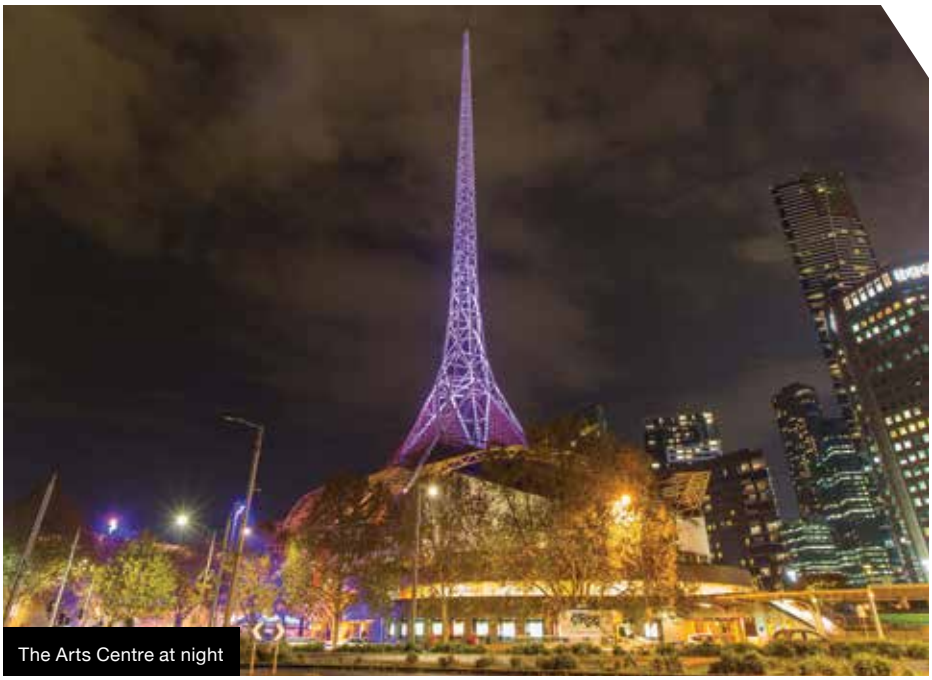
The precinct redevelopment will deliver NGV Contemporary, a new gallery on the current CUB administration building on Kavanagh Street, major upgrades to theatres and public spaces at Arts Centre Melbourne's Theatres Building, and a new creative hub at 1 City Road, providing new rehearsal and workshop spaces, an expanded Australian Music Vault and a new Australian Performing Arts Gallery. The project will include more than 18,000m2 of new and renewed public open space, seamlessly linking the city to the Melbourne Arts Precinct and beyond.

Snøhetta is a design studio based in Oslo and New York City with an office in Australia. The internationally renowned practice has captured global attention with projects such as the Norwegian National Opera and Ballet, the 9/11 Memorial Pavilion and Times Square redevelopment projects in New York and more recently the San Francisco Museum of Modern Art.

NH Architecture has extensive experience in the design and delivery of complex infrastructure projects such as both stages of the Melbourne Convention Centre, Margaret Court Arena and the Stage 2 and 3 Masterplans for Melbourne & Olympic Parks.

NH Architecture and Snøhetta are currently collaborating on the $271m Melbourne Park Stage 3 works and have previously worked with Arts Centre Melbourne to produce the Masterplan and Concept Design for Reimagining Arts Centre Melbourne.


The Art Centre's forecourt


The Arts Centre at night

Jands become a Distribution Partner for Bosch Communications Systems.

Jands will provide sales and support for a select range of Bosch's prosound installation audio products from Dynacord and Electro-Voice, including the new IPX Multi-Channel Installation DSP Power Amplifiers, EVID and EVC Series loudspeakers, and the ever-popular EV Innovations range.

"Bosch is well known for our commitment to excellent service and support and by entering into partnership with a strategic national distributor like Jands, who have the expertise to support the needs of the customer, we will continue to provide the quality products and services that people expect when they buy Dynacord and Electro-Voice. Our Prosound team are excited by this alliance, and we look forward to a prosperous long term relationship," stated Chris Dellenty, General Manager - Oceania, Bosch Security and Safety Systems.

"Following Jands' resignation late last year of several audio lines, I am pleased to once again be in a position to provide contracting style loudspeakers and amplifiers to our customers. As Jands restructured our product offering, around our strengths in corporate, government and education, our contracting customers made it clear they wanted to be able to source a complete solution from us. When we saw the new product offering from EV and Dynacord at Infocomm, we quickly realised Bosch represented the perfect partner for Jands," said Paul Mulholland, Managing Director, Jands Pty Ltd.

Bosch Security and Safety Systems is one of the world's leading manufacturers and suppliers of professional audio and commercial communication brands including Electro-Voice and Dynacord.

Jands is an Australian owned company founded in 1970. The company distributes some of the world's most recognised brands of Audio, Lighting and Staging products primarily for the entertainment and corporate industry. With headquarters in Sydney, a factory in Melbourne and offices in Brisbane and Perth, Jands employs over 120 people across Australia, and are well known in the industry for their outstanding product knowledge and support.

Damien Juhasz joins Audio Brands Australia.

Audio Brands Australia is very pleased to announce that Damien Juhasz will be joining the team in the role of 'Technical Sales and Business Development – Meyer Sound'.

Damien is well-known and respected in the industry and comes to Audio Brands Australia with extensive loudspeaker, system design, DSP, and general audio experience.

Don McConnell, Director of Audio Brands, commented: "I have known Damien for many years, initially as a customer, then a work colleague, and more recently as a competitor. It will be great to again be working on the same team. The addition of Meyer Sound to our portfolio earlier this year has seen our company and the Meyer brand grow into many new markets. It quickly became obvious that a specialist focused on Meyer Sound would be required and we're pleased to have Damien to fill this very important role."

Damien added: "I'm very excited about this new opportunity, both working with Meyer Sound and the great team at Audio Brands Australia. Meyer is one of the true innovators of the industry and a brand I have always admired. I'm really looking forward to getting out in the market and promoting Meyer's fantastic range of products." Damien starts with Audio Brands in the second half of August.

Damien Juhasz

Mike Davis and Marcus Pugh

Industry experts join expanding Harry the hirer Productions.

Harry the hirer Productions is proud to announce the arrival of two new and very accomplished employees - Marcus Pugh and Mike Davis. Both bring significant industry knowledge and experience, which further strengthens the overall service offering available at Harry the hirer Productions.

With 20 years in the entertainment industry specialising in lighting production, Marcus Pugh brings solid expertise in lighting production to the team. “Marcus’s skillset and professionalism complements our existing team extremely well. He has worked his way through various industry roles including warehouse manager, crew boss, hire manager and business development manager over the last 16 years and knows the industry backwards. We look forward to offering the production market a new sense of confidence when it comes to high-end lighting production,” says national sales manager Brad Johnson.

Mike Davis joins the team fresh from a successful contract with the Gold Coast 2018 Commonwealth Games as Site Services Manager (Rigging). Previous to this, Mike has spent the last seven years rigging across Australia in a diverse range of disciplines including concerts, television and film, automation, venue and exhibitions.

“As rigging contractor for the Commonwealth Games, the Harry’s team worked alongside Mike every day for the duration of the event. His attention to detail, professionalism, communication skills and understanding of rigging safety is exceptional. I knew immediately he would be a great fit for our team and, as with Marcus, I’m really looking forward to seeing Mike grow with Harry the hirer Productions,” says Mr Johnson. Mike and Marcus join the team at a very exciting time for Harry the hirer Productions. “Our new warehouse space has allowed us to grow rapidly in terms of new products, new processes and with that, new people. The future is very bright at the big blue”.

Vale Richard ‘R2’ Pacholski.

CX were saddened to hear about the untimely passing of Richard Pacholski – universally known as R2 – in late August, after a short battle with cancer.

R2 was a highly respected member of the lighting community, as a lighting designer, associate designer or production electrician. After starting his lighting career at the Adelaide Festival Centre, and then with The Australian Ballet, Richard joined Cameron Mackintosh Australia in the late eighties as Lighting Manager, and over the next decade toured extensively on productions of Cats, Les Misérables, Five Guys Named Moe, The Phantom of the Opera, Miss Saigon and Rent!

More recently R2 worked as a freelancer, with his own company r2 design + production pty ltd, and has been the Associate Lighting Designer for Cats (Australia, Korea), The Phantom of the Opera (Australia, Korea), Les Misérables (Argentina, Brasil, Mexico, Germany, Holland, Korea), Mamma Mia! (Australia, Asia, Korea), We Will Rock You (Australia, Japan, South Africa, Canada, New Zealand, Asia, UK tour, Italy tour), Spamalot (Australia), Boeing Boeing (Australia), The Graduate (Australia), Billy Elliot The Musical (Australia, Korea), Avenue Q (Australia), Miss Saigon (Australia, Korea, Brasil, Holland, Japan, London), Mary Poppins (Australia), War Horse (Australia, Japan), Les Misérables 25th Anniversary (Korea, Japan, Canada, Australia), Strictly Ballroom The Musical (Australia), Barnum (UK tour), Matilda The Musical (Australia) and Kinky Boots (Australia).

Our condolences are with his family and his friends all around the theatre world. R2’s sisters Julie Wells and Leonie Degaris arranged their dear brother’s funeral, which was held on Monday, 27th August at 11am in the Magnolia Chapel, at the Macquarie Park Cemetery, Sydney.


Richard ‘R2’ Pacholski

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MACAU CITY'S DAZZLING 'HOUSE OF DANCING WATER' EXPANDS COMMS.

The House of Dancing Water, a breathtaking in-the-round water show created by the Franco Dragone Entertainment Group for Macau's City of Dreams entertainment complex, has extended its in-house communications capabilities with Riedel's Bolero wireless intercoms. Bolero provides comprehensive, reliable, and integrated wireless capabilities that leverage the facility's existing Riedel Artist digital matrix intercom system, in operation since 2014.

Designed by Pei Partnership Architects, the state-of-the-art Dancing Water Theatre created for The House of Dancing Water includes a stage pool that holds a record-breaking 3.7 million gallons of water, equivalent to five Olympic-sized swimming pools. The arena also boasts a 40-metre-high steel-trussed space that provides the generous heights required for the show's diving and acrobatics elements. The show itself centres on an epic love story and spectacular journey through time, showcasing dazzling costumes and special effects.

"A show as complex as The House of Dancing Water would simply not be possible without reliable, stable, and flexible communications between and among our cast and crew members," said Nicolas Hammond, Head of Sound, Dragone Macau Limited. "We're already sold on the quality and flexibility of Riedel's Artist, so it was only natural to choose Bolero for our upgrade to wireless comms."

The Riedel-based communications infrastructure is the result of a collaborative effort between Hammond and Assistant Head of Sound David Sharrock, with the support of The House of Dancing Water sound team. The new Bolero system extends the existing Riedel infrastructure, including two Artist 64 frames and two Artist 32 frames, to enable clear and reliable communications for all cast members and crew throughout the Dancing Water Theatre. Motocross stunt riders and acrobatic performers, coupled with the technical teams, use the intercom system for continual communication during the show, which features visuals, water, and atmospheric effects. Even in the aquatics area, the Bolero/Artist combination supports communications with performers and underwater performer handlers in the pool via underwater speakers, in-mask communications systems, and buddy phones.

Programming flexibility is another extremely important requirement for the production, and Bolero enables the team to customise the system to meet the needs of individuals and departments. Riedel's Director software enables intuitive management and configuration of the system while also facilitating real-time system monitoring by the sound department.

"Remote monitoring and fewer moving parts means we can operate and maintain the system much more efficiently, giving us more time to work actively on solutions for users. And the outstanding build quality of the Bolero belt packs means our consumables and service/repair costs have gone down dramatically," Hammond added. "Also, we can't speak highly enough about the fantastic service we've received from Riedel. The personal connections we've built with the Riedel team and their outgoing and professional manner have made working with Riedel a pleasure, and we know that support is always just a message away."

Superannuation for Independent Contractors – LPA issues definitive statement.

It has come to Live Performance Australia's attention that there is uncertainty as to whether employers in the Live Entertainment Industry must make superannuation contributions for independent contractors.

All employers in the Live Entertainment Industry should be making superannuation contributions on behalf of both their employees as well as people they engage as independent contractors under an ABN who undertake work as provided below.

WHY IS THIS THE CASE?
Superannuation legislation (section 12(8) of the Act) extends the requirement to make super contributions for independent contractors working in the Live Entertainment Industry if they are:

- a person who is paid to perform or present, or to participate in the performance or presentation of, any music, play, dance, entertainment, sport, display or promotional activity or any similar activity involving the exercise of intellectual, artistic, musical, physical or other personal skills is an employee of the person liable to make the payment; or
- a person who is paid to provide services in connection with an activity referred to above.

When asked how to pay superannuation to contractors who provide an ABN, LPA's David Hamilton replied "What we at LPA do, and other producers and employers we know do, is request the ABN holder for their super details at the time of contracting."

For more information or enquiries please contact:

David Hamilton, Director Workplace Relations
on 03 8614 2000
or dhamilton@liveperformance.com.au

Claire Seremetis, Workplace Relations Advisor
on 03 8614 2000
or cseremetis@liveperformance.com.au

Elation Seven

The Seven range from Elation features 25W 7-in-1 RGBAW + Lime + UV LEDs (Red, Green, Blue, White, Amber, Lime, and a 395nm UV) a CRI of 90 and individual hue, saturation, and intensity control, RGB + dynamic amber channel modes, 12 internal programs with speed and fade control, 64 unique 7-colour macros, selectable dimming curve modes, adjustable LED refresh rate and gamma brightness for flicker free operation for TV and FILM, DMX and RDM. The range is launching with a 1.8m 60 cell batten and two IP65 Rated pars in 7 and 19 cell variants.

Australia: Lexair www.lexair.com.au or 0477 539 222

New Zealand: Lexair www.lexair.nz or (09) 213 7436

Novastar MCTRL660 Pro

The MCTRL660 Pro video controller is an upgraded model of the popular MCTRL660. Noticeable improvements include the resolution for 10bit input, now reaching 1600x1200@60Hz. Additionally, 12bit input source video is now supported. The 660 Pro also has 2 additional optical outputs - these two output ports come in handy for fine-pitch large cabinet mapping. It adds support for mirror image, and TCP and Art-Net make the Pro version more powerful than ever before. Finally, the wealth of input options (3G-SDI, HDMI, DVI, HDBaseT) give the Pro version unrivaled flexibility.

Info: www.novastar.tech

NEW

Panasonic AW-UE150 and AW-RP150

Panasonic has unveiled a new 4K integrated remote camera that offers 4K 50p capture – a first for a broadcast-class PTZ solution. Ideal for high-end applications including broadcast, production and events and staging, the AW-UE150 will incorporate a 1-type MOS sensor and 20x optical zoom, as well as seamless intelligent zoom (iZoom). The 4K interfaces supported will include 12G-SDI, HDMI, IP and optical fibre. Along with HDR mode, support of various 4K interfaces and simultaneous 4K/HD output, the AW-UE150 will also afford the widest viewing angle (75.1 degrees, horizontal) in its class – a perfect solution for filming stages, stadiums and arenas or high-end broadcast projects. Panasonic has also announced a new and intuitive camera controller, the AW-RP150, which is compatible with the AW-UE150 and Panasonic's higher-end PTZs and other remote cameras. The AW-RP150 offers significant improvements over previous models, including a new singlehand operation joystick (controlling PTZ or Focus) and a large touch-panel LCD screen for essential camera functions such as monitoring and menu setting.

Australia: Panasonic www.panasonic.com/au/ or 132 600

New Zealand: Panasonic www.panasonic.com/nz/ or (09) 272 0178

Epson EB-L20000UNL

The EB-L20000UNL is a 20,000-lumen WUXGA laser light source projector. Featuring a light and compact design without comprising 3LCD technology, it delivers a laser light source of up to 20,000 hours with a dynamic contrast ratio of up to 2,500,000:1. A fully sealed optional engine, titling assist feature and interchangeable connectivity make it easy to integrate into any existing large venue infrastructure. The model is compatible with lenses used by Epson's G and L series line-up, and it comes with a 5 year manufacturer's warranty.

Australia: Epson
www.epson.com.au or (02) 8899 3666

New Zealand: Epson
www.epson.co.nz or (09) 366 6855

Allen & Heath SQ Dante

SQ Dante provides any SQ mixer with a full 64×64 channel, 96kHz or 48kHz interface to a Dante network. An SQ fitted with the Dante option card can seamlessly connect to amplifiers, preamps and other devices on the Dante network, making full use of SQ's high resolution 96kHz audio. The SQ Dante card can be switched between 96kHz or 48kHz to accommodate Dante networks running at either sample rate. In addition to facilitating system integration, the card also enables digital splits and affordable multitrack recording direct to a computer.

Australia: Technical Audio Group www.tag.com.au or (02) 9519 0900

New Zealand: Jansen Professional Audio & Lighting www.jansen.co.nz or (090 377 3663

Kramer CA–HM

CA–HM active HDMI copper cable provides a solution for delivering HDMI signals over long distances: 18Gbps up to 20m, 10.2 Gbps up to 25m, and 6.75Gbps up to 30m. The innovative technology utilised in the cable's connector features superior equalizing and signal compensation to meet the most demanding challenges in Pro AV installations. CA–HM features the Kramer exclusive K–Lock HDMI connector that prevents cables in your installation from unintentionally disconnecting, eliminating cable–related service calls. Additionally, an LED on the connector indicates when the signal is transmitted successfully.

Australia: Kramer www.kramerav.com/au or (07) 3806 4290

New Zealand: Kramer www.kramerav.com/nz or (09) 215 8083

ClearOne Converge Huddle

The ClearOne Converge Huddle is a professional audio DSP mixer that addresses today's AV needs in huddle rooms and similarly sized meeting spaces. Audio and video collaboration applications can be accomplished through a single cable connection to users' devices such as laptops, tablets, and smartphones that run applications such as Spontania or Skype for Business. It features distributed Echo Cancellation on every mic input, and noise cancellation with Adaptive-Ambience. Laptops connect via a single USB 3.0 connection, and in the future, mobile devices will connect via Bluetooth.

Australia: PAVT www.pavt.com.au or (03) 9264 8000

New Zealand: PAVT www.pavt.com.au or 04 21 410 050

GEAR

Chauvet DJ

The new range of Chauvet DJ LED wash effects has landed, making it easier than ever to create captivating lighting shows. Fitted with Bluetooth technology, these new fixtures let you create and store scenes, control colour fades and chases, and more right from your favourite smart device without any additional hardware needed with the new BTAir app. The range includes Slimpar T12BT (12x RGB 3-in-1 diodes) , Slimpar Q12BT (12x RGBA 4-in-1 diodes), and the Colorband T3BT (12x RGB 3-in-1 diodes)

Australia: AVE www.avecorp.com.au or (03) 9706 5325

New Zealand: M.D.R Sound & Lighting www.mdrlighting.co.nz or (06) 355 5073

Digital Projection TITAN laser 37000

The TITAN laser 37000 projector produces 37,000 lumens and features connectivity including DisplayPort, HDMI 2.0 and HDBaseT. It's also compatible with DMX and Art-Net. The compact chassis uses liquid cooling with radiators to remove energy to the outside environment. Its optical system – from the laser light source up to the lens – is completely sealed and rated at IP60. This provides a near maintenance free solution by ensuring light output and colour performance will not degrade due to the ingress of dust.

Australia: Amber Technology ambertech.com.au or 1800 251 367

New Zealand: Amber Technology amber.co.nz or (09) 443 0753

Neutrik NA2-IO-DLINE

The NA2-IO-DLINE is an end-of-network device. It is a breakout box which allows two channels of audio to be integrated into a Dante network. Simultaneously, NA2-IO-DLINE converts a Dante stream into analogue audio signals. NA2-IO-DLINE is designed for harsh stage conditions. It therefore features lockable chassis connectors for both the audio and network connections. For fixed installations, the rubber protection can be removed. With optional mounting brackets or a rack panel, the box can be mounted below tables, in floor boxes, or in equipment racks.

Australia: Amber Technology www.ambertech.com.au or 1800 251 367

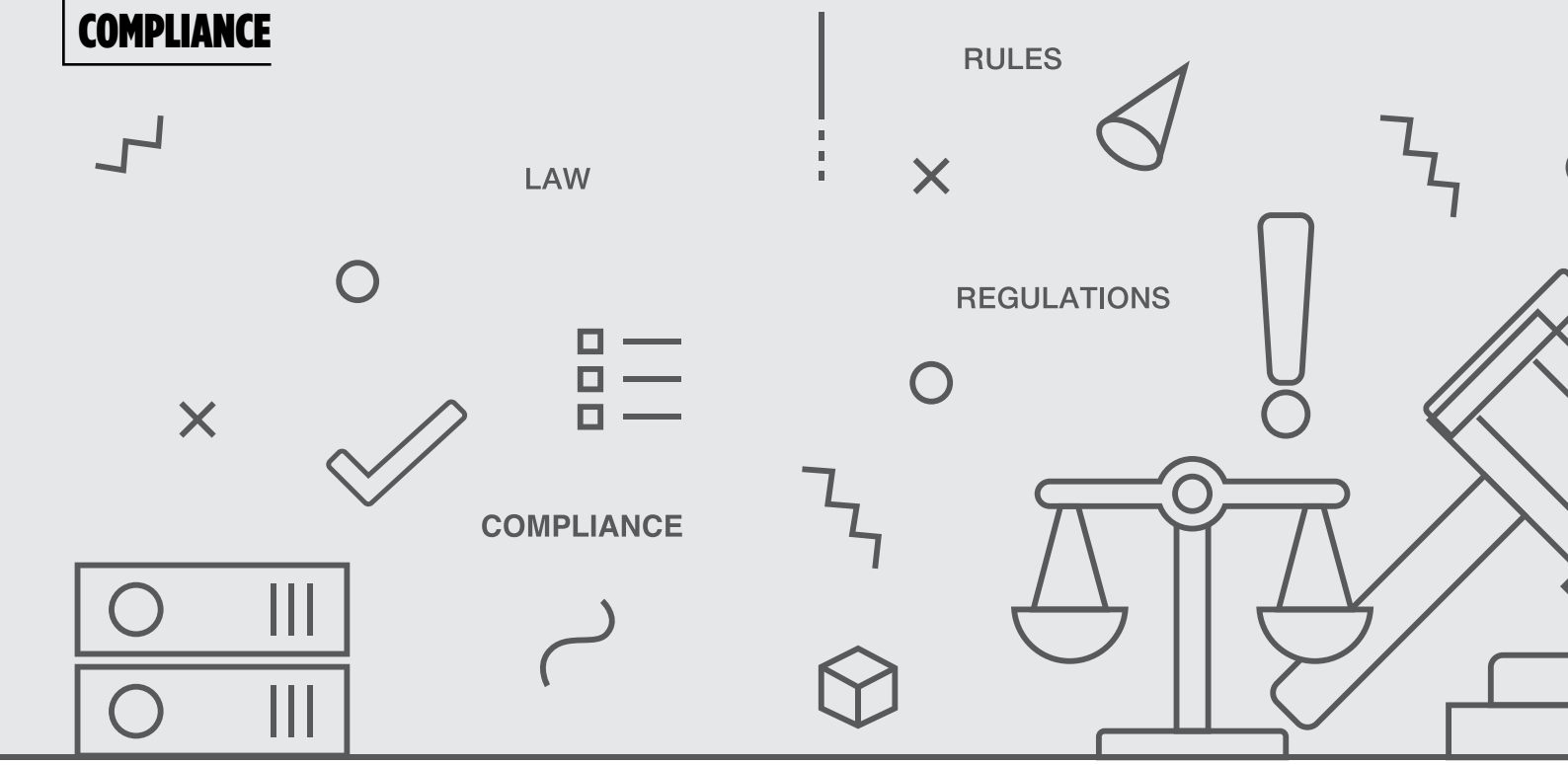
New Zealand: Amber Technology www.amber.co.nz or (09) 443 0753

ShowPro K4 LED Beam

The K4 LED Beam is a 90W 8200K LED source that produces tight, solid beams with an output of 70,000 LUX @ 5 metres. It includes an 8-facet, bi-directional prism, 14+ open colour wheel and 17+ open gobo wheel. Pan and tilt movement is 540° and 270° respectively. Up to eight units can be power linked at 230V.

Australia: Show Technology www.showtech.com.au or (02) 9748 1122

New Zealand: Show Technology www.showtech.com.au/homenz or (09) 869 3293



COMPLIANCE PART TWO. EMC: ELECTROMAGNETIC COMPATIBILITY

by Steve Devine

Do you ever wonder why you are asked to turn off mobile phones and electronic games in an aircraft or hospital, where there are other electrical and electronic systems upon which many people's lives may depend?

Is your favourite radio programme interrupted by interference or the TV screen covered in 'snow' when someone uses a vacuum cleaner or electric drill nearby? EMC – Electromagnetic Compatibility. EMC is a regulatory framework to control the amount of 'noise' emitted by electrical devices. PA systems are very good at picking up this noise so it's particularly relevant to our industry.

Any electrical item imported into or manufactured in Australia and New Zealand and then supplied must comply with Australian and New Zealand standards. This not only covers distributors who import a lot of product, but also a sole trader who imports and supplies a few items to friends. Both must make sure they comply with the regulations. A mobile DJ who purchases a few lights on Alibaba for his mobile disco is also regarded as an importer and a rental, even on your own events, is a form of supply and is also subject to the regulations.

The following standards apply to the products used in the entertainment industry. There are others for more specialised product.

AS/NZSCISPR32 - Information technology equipment, modems, etc.
EN55032 - Sound and television broadcast receivers, radio receivers, DVD/CD Players, audio amplifiers, surround sound equipment.
CISPR32 - Multimedia equipment intended primarily for professional use.
EN55103-1 - Audio, video, audio-visual and entertainment lighting control apparatus for professional use.
AS/NZSCISPR15 - Lighting equipment, lighting accessories, ballasts, dimmers.
EN55015 - Lighting equipment.

These standards are available for sale (at considerable expense) at https://www.standards.org.au/ and http://www.iec.ch/index.htm

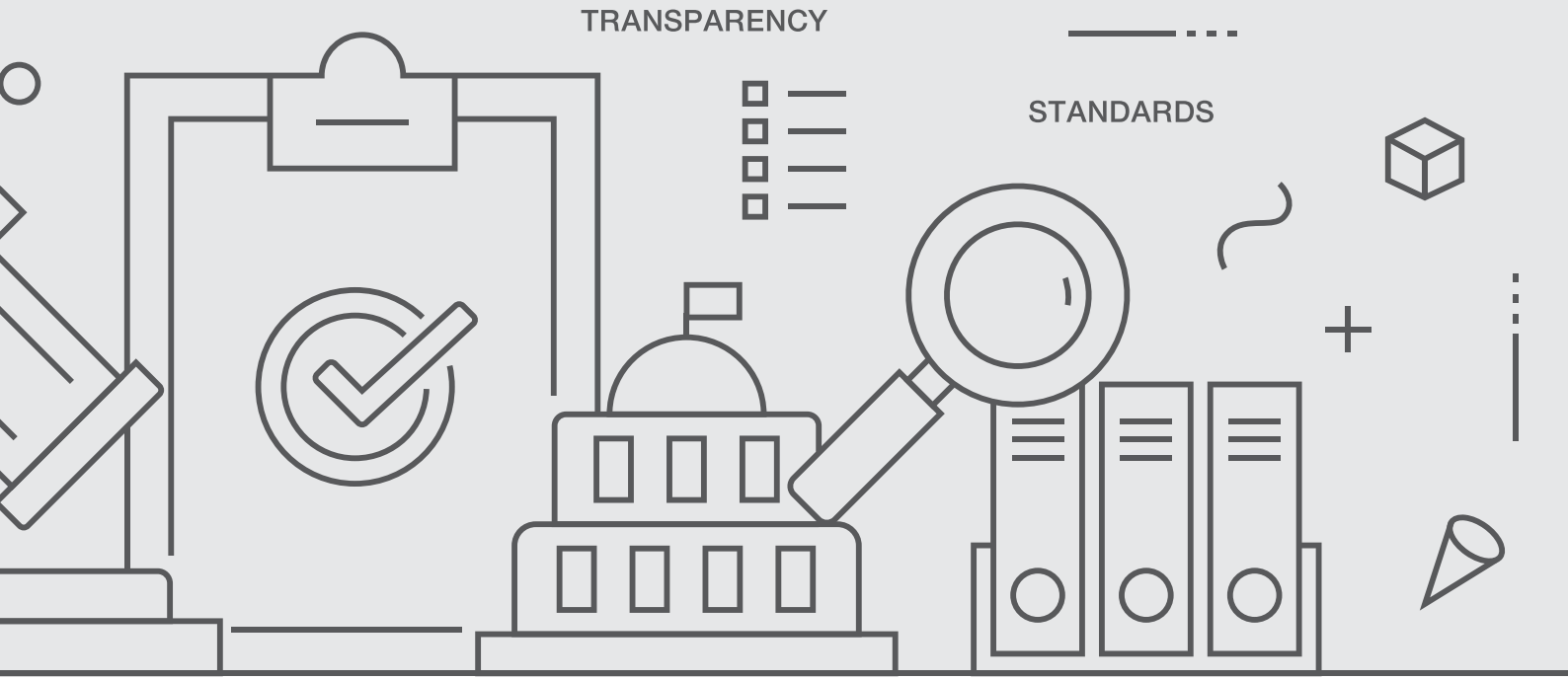
The Regulatory Compliance Mark or RCM is the system used in Australia and entails a national product database managed by the Electrical Regulatory Authority Council (ERAC). A similar system is used in New Zealand and is managed by the Radio Spectrum Management. The system uses the RCM mark which can be affixed to product once compliance has been demonstrated.

This system requires Australian and New Zealand importers and manufacturers sign declarations of conformity, provide evidence of same and use

the RCM mark. It specifically prohibits overseas suppliers signing declarations or placing the RCM mark on products. The intent is that the entity in Australia or New Zealand who imported or manufactured the product is responsible for its compliance.

The fact that an item may have CE or UL compliance and markings does not necessarily mean it complies with Australian or New Zealand Standards.

A compliance record for all items, regardless of level is required. It must be in English and may be kept in electronic form. Records must be available for inspection within 10 working days of receiving an inspection notice from ACMA. Records must be kept for 5 years after the importer/manufacturer ceases to supply product in the market.



The following elements make up an EMC compliance record:

Product Description

- Current model name and number and if relevant any related model numbers.
- The version of any software or firmware incorporated into or supplied with the product where changes in these may affect the compliance of the product with the technical standard
- ACMA also suggests a photograph of the product illustrating its internal and external aspects including printed circuit boards.

Test Report

- Indicate the product type, model, and batch number of the item under test.
- The name of the testing agency, the standards tested to, the tests conducted and the test results.

Technical Construction File

- Documentary evidence that includes a report produced by a competent body assessing the product against the requirements of the applicable standard. The file must:
- Identify the product being assessed
- Identify the applicable standard against which the product was assessed
- Includes a statement by the competent body that in their opinion the product tested complies with the relevant standard

Declaration of Conformity

- A declaration signed by the supplier asserting that the product being supplied is compliant with the applicable ACMA technical standard and that all products of that type supplied in the future will also comply with that standard.

A sample declaration can be downloaded at https://www.acma.gov.au/-/media/Technical-Regulation-Development/Form/Word-Document/C02--Suppliers-declaration-of-conformity-Final-100215-doc.doc?la=en

Compliance Levels

There are three levels of compliance for EMC. The evidence you are required to obtain to demonstrate the product complies with the applicable EMC standard varies with each level. The higher the level, the greater the risk of interference presented by a non-compliant product. The greater the risk, the more stringent the testing and record-keeping requirements are to demonstrate compliance. Be careful to make sure that you correctly identify which level applies to the product in question.

Compliance Level 1 – Low risk

Low risk items are those that emit very little or zero EMF. An example of a low risk device would be an SM58 microphone. It is not mandatory to affix the ACM mark to Level 1 items. The only record required is a description of the product. If the RCM mark is attached, then a Declaration of Conformity is also needed. Whilst there is no requirement to hold a test report for level one items, you need to be confident that the product complies with the applicable standards. ACMA suggest including the manufacturers performance specification documents for the product in your record.

Compliance Level 2 – Medium risk

A device is a ***medium risk device*** if it contains 1 or more of the following:

- Switch mode power supply;
- Transistor switching circuit;
- Microprocessor;
- Commutator;
- Slip ring motor;
- Electronic device operating in a switching mode or a non linear mode.

Most of the electronic equipment used in our industry falls into the Level 2 category.

For a Level 2 medium risk device a supplier is required to keep the following records

- Description of the product
- Complete and sign Declaration of Conformity for each product
- Test report or a technical construction file prepared by a testing body.

The testing body can be a laboratory that has the equipment, resources, and technical capability to conduct testing to an applicable standard. Examples of testing bodies include: an in-house laboratory or a testing facility that does not hold an accreditation.

Van Veen 3-Dimensional Loop Antenna
Used for measuring radiated emissions

Conducted emissions testing 9KHz to 30MHz under CISPR15 using a Line Isolation Stabilisation Network

Compliance Level 3 – High risk

A high-risk device is a device in which radio frequency energy is intentionally generated and/or used in the form of electromagnetic radiation for the treatment of material. The requirements for Level 3 are the same as Level 2 other than the testing laboratory must be accredited by NATA - National Association of Testing Laboratories or by a NATA MRA Partner. An MRA Partner is an overseas regional accreditation cooperation with which NATA has an agreement for the mutual recognition of test reports. I suspect lasers and similar items come under this category, but I am unable to confirm at this time.

Wireless microphones and signal transmission equipment will be dealt with in a future article.

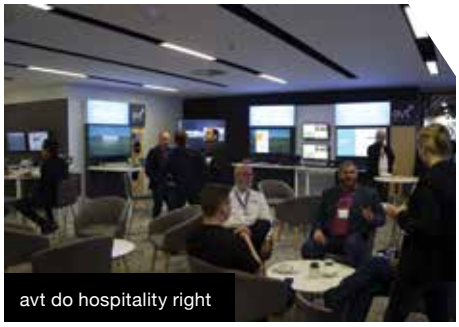
by Jason Allen

INTEGRATE 2018

Integrate returned to Darling Harbour and the new ICC from August 22 to 24 to celebrate its 10th anniversary. Despite some reservations about running on a Friday, turnout was good, with organisers reporting their busiest day ever on the Thursday. Exhibitors were feeling confident, stands were impressive, and the industry turned out for the biggest single location catch-up we have.

It's About Hospitality

We're all friends here - Andrew Crawford (TAG) Dave Jacques (NAS), and Doug Pringle (NAS)



avt do hospitality right

It's become apparent that big, centrally located, expensive tradeshows like Integrate are really more about people than gear. It was a year of incremental product improvement, and few really big tech stories; all the action was in catching up with where people were at, where they were going, and what projects they were working on. With all of the distribution changes in the last twelve months, there was a lot of talking to do.

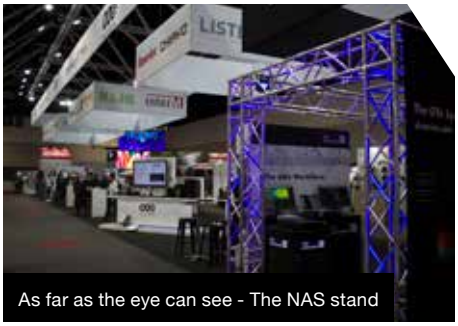
With that in mind, we'd like to congratulate the exhibitors who understood this and provided what is always in short supply at these things; somewhere to sit and chat, water, coffee (or something stronger later on) and decent food. Congrats to avt on their combination of a modest stand on the floor with a big room one floor up overlooking the show, replete with buffet, beverages and a comfortable lounge atmosphere. Hats off to NAS and TAG for including a café in the middle of their stands. Thanks to Bose for putting on a good post-show drinks, and big congrats to TAG for probably the most successful evening shindig at the show – they actually organised a piss-up in a brewery, and did so very well.

New Brands on New Stands

A mere one week before Integrate opened Jands announced it would be carrying select products from EV and Dynacord, re-opening their bread-and-butter trade of ceiling speakers and 100V line amps. The two Bosch brands joined newcomers Biamp, Robe, and L-Acoustics on the stand, making it almost unrecognisable from last year's offering.

EV and Dynacord at Jands

New recruit Damien Juhasz with Meyer Sound on the Audio Brands Australia stand



As far as the eye can see - The NAS stand

Credit to them – they haven't missed a beat. They were confident, proud, and selling like the powerhouse they always have been. Over at Amber Technology, Mackie made itself comfortable, while Harman installation products joined the mix at avt. Meyer Sound stood out at a vastly expanded Audio Brands Australia. And speaking of vast, NAS made an enormous impression with a stand about half the size of a football field.

Breakthrough Tech - d&b Soundscape

d&b audiotechnik's Ralf Zuleeg and Gert Sanner with the DS100

It wasn't just the enormous stand that NAS had going for it. They also had a room running d&b audiotechnik Soundscape demos throughout the day. d&b double act Ralf Zuleeg and Gert Sanner delivered a slick presentation introducing the motivation behind and basics of the technology, before proceeding to blow the mind of all in attendance with its capabilities. The room was surrounded with a ring of 26 rigged loudspeakers on truss, plus 11 front fill on the ground and two subs. Ralf and Gert showed how Soundscape through the DS100 processor can be used for creating an incredibly realistic soundfield for a four piece band, follow performers in an opera, recreate entire concert hall acoustics, or be used for wildly creative

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Subtle seat-based marketing at the d&b Soundscape demonstration

immersive mixing. Stereo is dead. This is what's next. I can't imagine ever going back after mixing to Soundscape.

Tech Trends – PoE+ and Behind the Screens

Biamp demo room at Jands with Tesira AMP-450P punishing EV speakers

Biamp Tesira AMP-450P. They're not kidding!

Barco's Craig Saunders and the ingenious rear of the UniSee LCD panels

Behind Barco's UniSee - totally front-serviceable video walls

If it doesn't run on PoE+, it's a non-starter. I think everything I saw at Integrate that was smaller than a briefcase ran on PoE+; AV endpoints, encoders, decoders, ceiling mics, PTZ cameras, and even amplifiers. Special mention to the Biamp Tesira AMP-450P, an AVB enabled four channel output model. Jands ran regular demos in a meeting room on their stand, and it absolutely caned the EV surface mount speakers it was running. All of this gear now being powered by Ethernet switches made me think – installers better be very careful with the switches and cabling they choose, and their calculations, or there are going to be a lot of things melting and catching on fire!

Integrate always has a huge number of screens, be they interactive, OLED, LCD, or LED panels. Whether you want to buy European or go to Shenzen and get them made to your spec, all the options were there. What now separates one offering from another is the handling and design, making what's behind the screen more important than what's in front. The newly merged VuePix Infiled impressed with Air Carbon AC5.3, a tour-ready system with its own dollies, with handles and rigging partly made of actual carbon fibre, making the units rugged and light. Barco displayed their deviously clever UniSee LCD video wall system that uses a tool not unlike an Ikea Allen key to make front-servicing incredibly easy. It's hard to describe without getting hands-on with it, but it used a combination of simplified connection management, gravity, and gears to make moving panels, disconnecting and reconnecting, elegantly achievable for one person.

Stand by Stand – A Round-Up of Gear on Show

PAVT

PAVT brought their EAW Anya line array, their craft beer bar, and regular enormous presence. Hot items on the stand included the ClearOne Converge Huddle; an all-in-one networked DSP solution for huddle spaces that PAVT can package up with ClearOne mic products like the Ceiling Microphone Array Analog-X. The ClearOne Unite 200 PTZ camera was right next door; a professional-grade PTZ that includes USB, HDMI, and IP connections. Jordan Christoff of Visionary Solutions was on hand to talk through the PacketAV Duet, a networked encoder/decoder that combines video with Dante audio, creating amazing flexibility for distributing both. Just to show off, PAVT had control of the PacketAV Duet running from Symetrix DSP.

ClearOne Huddle with Analog-X Microphone Array

ClearOne Unite 200

Jordan Christoff of Visionary Solutions with the PacketAV Duet

Televic Plixus Nameplate at PAVT. Ironically taken just as Australia announced its 6th PM in 11 years

Jands

Robe RoboSpot was turning heads in what was a paucity of lighting gear at the show. A vast display of almost everything available from L-Acoustics, along with the brand's own Tim McCall, were there for the audio aficionados. Functional meeting and demo spaces for Shure's MXA and Biamp's Tesira rounded out the impressive Jands presence, along with new product offerings from EV and Dynacord to get their installation customers back into the habit of using Jands as a one-stop-shop.

Jands

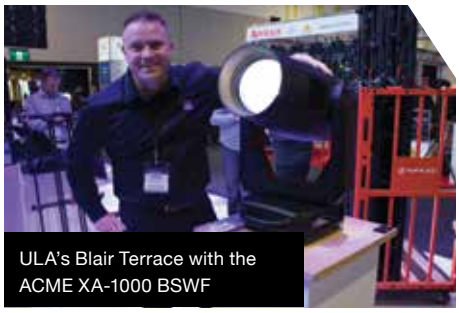
Robe RoboSpot at Jands

L-Acoustics at Jands

The Meeting Room at Jands - Shure MXA ceiling array and processing

ULA Group

In addition to the previously mentioned VuePix Infiled Air Carbon AC5.3, ULA had their Holo see-through LED panels front-and-centre. The other big news on the stand was ACME's four-in-one moving head fixture, the XA - 1000 BSWF (Beam, Spot, Wash, Framing). With a 1000W source, CMY, colour wheel, static and rotating gobos, almost every other conceivable feature, plus a three year warranty, this fixture was already creating a buzz in the LD community.



ULA's Blair Terrace with the ACME XA-1000 BSWF

VuePix Infiled AC5.3

VuePix Infiled AC5.3 rear

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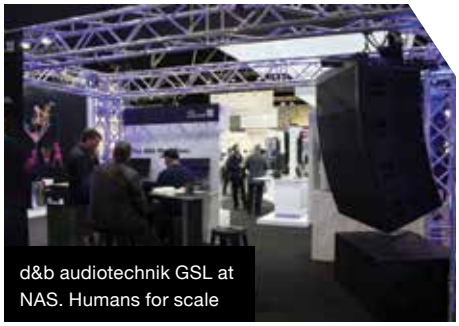
ACME XA-1000 BSWF internals

NAS

NAS's aforementioned enormous piece of ICC real estate had you covered for everything that makes a noise. The mighty d&b audiotechnik GSL line array hung proudly at one end of the stand, and a huge range of both install and live sound products ran the entire length, including Midas, Ashly, Chiayo, Listen, interM, and dBTechnologies. Special mention to underrated brand InDesign with a couple of really useful and thoughtful products, including zone mixers, surface mount speakers and the incredibly useful MP30 – a 30 Watt, 100V line mixer amp with built-in FM Tuner, MP3 player and Bluetooth receiver, a real 'fix all of your problems' box!



d&b audiotechnik GSL at NAS. Humans for scale

InDesign at NAS – Problem Solvers

Epson

Epson were demonstrating their new 12,000 lumen native 4K 3LCD laser projector, the EB-L12000QNL, alongside their big venue projector, the EB-L20000UNL, which kicks out an impressive 20,000 lumens.

Espon EB-L12000QNL

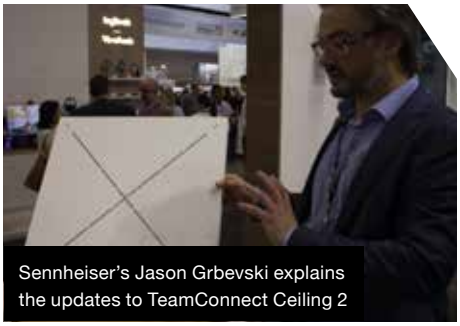
Immersive racing with Epson EB-700U projectors edge blending

Panasonic

Big projectors were also the order of the day at Panasonic, with the 4K+ capable PT-RQ22K laser projector using its 20,000 lumens to project onto a huge concave canvas hanging above the stand.

Under the Dome - huge immersive projection three metres across created with a Panasonic PT-RQ22K 21,000 lumen 3 chip DLP with 4K

Sennheiser



Sennheiser's Jason Grbevski explains the updates to TeamConnect Ceiling 2

Sennheiser have updated their Team Connect Ceiling microphone array, with improvements to its algorithms and EQ, and the addition of PoE and a redundant Dante port. It can now also send location information over its data connection to other devices. Control Cockpit software has also been updated, adding support for the new evolution G4 wireless series and the flagship D6000.

TAG

The Q-SYS meeting room

Up close with Allen & Heath SQ-7

Allen & Heath IP8, IP6 and IP 1 controllers

Allen & Heath's new SQ-7 was at its first Australian show, and sat in a clever display demonstrating that the entire A&H family of desks and stageboxes can be integrated via a combination of their gigaACE and SLink connections. dLive's three IP controllers illustrated how the system can be controlled in an installation application, especially by the wall-mounted IP1, with its dual function encoder and LCD screen. The Q-SYS meeting room was never empty, as the DSP and control platform continues its dominance of the market.

avt

Chuck Frame of Mimo Monitors in the avt room

PanaCast and mezzoCast at avt

avt, now home to Harman installation products, had two major announcements. Firstly, they've picked up distribution of Mimo Monitors; tough, commercial-grade touchscreens that can run Windows or Android, and are perfect as interfaces for software-based control systems like avt's Utelogy. The second was avt's own OEM product mezzoCast, middleware that sits behind the facial recognition power of the PanaCast camera. This system can recognise faces entering a meeting room, make an ad-hoc booking through back-ends like Office365, and removes the need for anyone to remember to make a booking manually. It also shuts everything off when people leave the room, creating fantastic efficiencies.

Amber Technology

A new brand for Amber - Newline Interactive, who manufacture a range of interactive wall-mounted displays for collaboration. Their Trutouch X9 4K UHD 86-inch comes with two 1080p wide angle cameras, echo cancellation, microphone, loudspeakers and an on-board computer, which can be loaded with your OS of choice. It's a one-product collaboration solution that you hang on a wall, and you're done. Mackie has now made their home at Amber, and the new DL32S and DL16S tablet mixers are awaiting an update that will see control go totally cross-platform, opening up to Android and Windows users.

Newline Interactive Trutouch S9

Mackie at Amber

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QSC tag Technical Audio Group

P!NK

Over the top theatrics, insane production, and breathtaking aerial stunts – yep, must be at a Pink show!

Making an entrance, Pink got the party started on her Beautiful Trauma Tour by swinging in on a massive chandelier high above the crowd, dressed in a sparkling black jumpsuit, with fireworks shooting from the stage. The tone was set.

The next two hours were a non-stop, high-octane spectacle featuring the mega-star's biggest hits, death-defying aerial stunts, dazzling lights, blinding pyrotechnics and of course, an inflatable Eminem.

With no compromise when it comes to getting this show into various arenas, Production Manager Malcolm Weldon says 'making it fit' is his biggest challenge.

"It wasn't designed to fit in every building so we just move stuff around and squeeze it in with the help of the great rigger Gabe Wood," he admitted. "That's what it all starts with. I don't care what anyone else says, it's all about the rigging. Depending on the building and how difficult the load in is, if we start marking the floor at 6am we should be show ready by 4.30pm."

Baz Halpin of Silent House Productions was the creative mastermind behind the visual spectacle serving as lighting designer, set designer, and director. Associate lighting designer and programmer was Eric Marchwinski. In designing the show, Baz commented that the treatment of every song had to have a beauty and a trauma to it with emphasis on the juxtaposition between the two.

It was not surprising to learn that a show of this magnitude required a month of production rehearsals whilst the band and dancers rehearsed elsewhere before they all met up in Phoenix, Arizona for a further four weeks of rehearsal.

"We then hit the ground running and have been at it ever since!" said Steve 'Six' Schwind, lighting operator on the tour. "In four months we've done about sixty shows in the US, and in Australia and New Zealand we're doing 42 shows. The US dates

Six

by Cat Strom

Photo Credits: Todd Kaplan

were mainly one-nighters and the crew are really enjoying being parked in one city for several days at a time."

Solotech supplied lighting and video including a giant 9m by 21m video screen built with 900 6mm LED panels.

The rectangular stage is surrounded by an illuminated heart-shaped runway with two catwalks jutting into the audience, connecting at a point to create an intimate fan pit. Constructed by TAIT, the 23m wide main stage is surrounded by a fluorescent pink, heart-shaped runway thrust made of LED lit ramps, walkways and staircases. The multi-dimensional stage is also furnished with two performer lifts, two prop lifts, two treadmills, and band risers. All of the stage automation elements are controlled by TAIT Navigator.

The truss layout for the lighting design is a result of allowing for the aerial and scenic requirements and, with limited real estate, Baz designed a lighting system that could change its position for different songs.

The overhead rigging grid has two massive, mechanical arm-like lighting pods and several articulating lighting trusses which are suspended by 34 Nav Hoists. Additionally, 108 Kabuki Solenoid units are installed in the rigging grid to drop Kabuki drapes at various times during the show to create dynamic, stunning looks. TAIT Navigator cues the lighting trusses and lighting pods to move up and down and also cues the Kabuki Solenoid units to deploy.

"There's a lot of gear up there and all departments are interlaced when it comes to the build," added Six. "It all builds together or it doesn't build at all. During rehearsals everyone is in their own individual world for a while and then all hell broke out in Phoenix trying to put it all together! We'd all seen drawings of it but no one was quite sure how the heck it was going to work. Everything up there moves except for the two downstage trusses."

As Baz Halpin commented, this is a hybrid between a very theatrically-lit show and a punchy rock and roll show, so the fixtures chosen needed to be able to live between those two worlds.

"From the second the kabuki drops, it's a punch in the face," said Six on the show lighting. "It comes out full throttle, but then you can drop it down to very intimate moments on the thrust where you forget you have all that gear. It's like a rollercoaster ride; it has some turns that will take your breath

away, moments you can sit there and cruise, and then bang, drops you right in it again!"

The workhorse units of the lighting rig were the 88 Claypaky Scenius Unico, described by Six as an amazing light, whilst 118 Claypaky Mythos 2 provided beam eye-candy.

"The Unicos have such a nice, flat field of light," commented Six. "The optics and output are fantastic – in fact there's nothing I dislike about them. We use them mainly for key lighting, the way they light people and objects is really nice."

Four of the Claypaky Scenius Unicos are used to chase Pink around the stage and building, taking positional data from the TAIT system.

Also on a downstage truss were TMB Solaris Flare LRs used primarily as an audience light. GLP impression X4s were used to light the dancers, Robe Spikies lined the floor, staircase, and automation arms. Chroma-q ColorForce 72s lined the thrust with GLP impression X4 Bar 20s on the risers.

Philips VL6000 Beam fixtures were grouped together on two giant, actuated arms that hung over the stage. They were tightly clustered in groups of three to give them a unique personality in the context of the rest of the lighting rig.

"When I first saw them, I thought what the hell are these!" said Six. "But of course Baz works his magic and they turned out pretty damn nice."

Control was all MA Lighting MA2 with Six saying 'is there anything else out there?'

Despite an action packed production, Six was still questioned by someone as to why there were no lasers in the show!

"It's getting to the point nowadays where too many shows are having too much crap thrown at them," he added. "What are they thinking? Just hang crap in the roof until something bends, then take a few away? With Pink you could set her up there with

Tim Jones

eight fixtures, give her a good damn wash and a couple of spots and these rooms will still be full of people every night. Too many acts throw everything bar the kitchen sink at their show and expect it to be successful."

Spotted backstage was Tim Jones, an Aussie we last spoke to on Adele, who is crew chief and video system engineer, part of the eight-strong video crew.

The video set up included six Grass Valley cameras shooting 1080p, a Grass Valley Korona switcher and disguise media servers for the LED and projection.

"The large upstage video wall is masked by drapes into an oval shape and most shows we have the normal left and right iMAG plus some 270° torm iMAG screens for the expanded audience," said Tim. "The media servers are controlled by both timecode and lighting, plus we have a little bit of control in terms of what goes to the iMAG screen. We do a lot of the screen effects in the video switcher rather than in the media server."

The pressure is on Tim before the show rather than during. He has to make sure everything is 100% tested and checked because if there are any problems during the show, it's too late.

"Once the show has started, there are too many things going on to be able to problem solve," he added. "We have a daily check list like in theatre, making sure all the feeds and timecode work. Timecode is an extremely important aspect of the show. Because lighting and video systems are becoming more intertwined these days, we rely on each other to send signals and timecode is distributed everywhere on stage including automation."

FOH engineer David Bracey, another Aussie, was mixing to the left of the more usual centre mix position, saying it's a better place to mix from.

"It's more honest and representative of what 95% of the room hears rather than just the 5% down the centre," he said. "I was forced into this position with Adele and in the process of mixing there, I realised just how much smarter it was. It's not as nice a place to mix but it is more honest."

Dave mixed on a DiGiCo SD7, the only console that does what he personally requires a console to do, with four Bricasti M7 reverb processors as the only additions.

"The Bricasti M7 reverbs are just so good, and I've always gone outboard for main reverbs," he said. "The string and acoustic guitar reverbs on the SD7 are fantastic and irreplaceable. It's all onboard dynamic processing as well, I don't use any plug-ins. The SD7 is an easy board to mix on with everything within easy reach."

Dave admitted that the intricate design of the stage with so many flown elements made it difficult for him, but his biggest challenge was having so much of the show performed out in front of the PA.

The main hang consisted of 12 L-Acoustics K1 with four K2 underneath, alongside eight flown K1 SB. Side hang is usually eight K1 with eight K2 underneath, although in Adelaide Entertainment Centre it was eight K1 with five K2 underneath. For the rear hang there were nine K1, but usually it's up to 12.

As well as dealing with the flown elements, a suitable sub array for under the stage had to be designed that could fit in with all the stage pieces. As a result, there are 27 KS28s under the stage in nine cardioid clusters of three subs, with six Karas for front fill.

"As a standard we do delays everywhere, which are eight K2 per side. That works really well for this show," added Dave. "It doesn't matter what size the venue is, we put them in everywhere …. apart from here in Adelaide! The venue has extraordinary low catwalks and if we put delays in, Pink's flying would be affected so we couldn't have them."

All systems were powered by L-Acoustic LA12X amplifiers with optimisations in LA Network Manager. The digital signal distribution was taken care of by a Lake system.

The tour was Sennheiser dominated with Pink singing through a Sennheiser 9235 capsule on handheld, and a Sennheiser HSP 4 headset mic. On the drums, Sennheisers did most of the work, with Audio-Technica ATM450s on the cymbals, hats and one tom.

Pink isn't really an IEM artist, tending to wear just the one IEM and preferring to listen to the large amount of speakers on stage. The wedges, a mix of Clair CM22s and L-Acoustic X15s, were hidden under grills in the floor allowing for a clean stage. On the heart-shaped runway were 20 L-Acoustics X15 HiQ stage monitors.

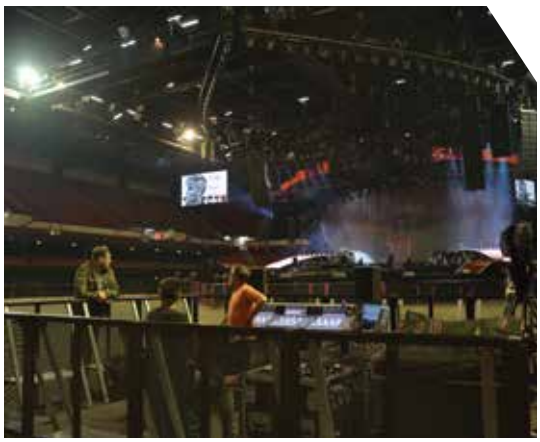
Pink has two monitor engineers: Jon Lewis just for herself and Horst Hartmann for the band. Jon also mixed on a DiGiCo SD7 using a Drawmer 1973 multiband compressor for his IEM outputs. All IEMs are Sennheiser SR 2000, with all RF mics running on the Sennheiser Digital 6000 wireless system. Sennheiser MD 9235 heads are on the SKM 6000 handhelds.

Horst mixed the band on a Yamaha PM10 using solely what's in the console, saying that the EQs, compressors, gates, FX and plug-ins in the console are great, so nothing more is needed. Band members were all on JH Audio Roxanne IEMs, and they all used Sennheiser IEM 2000 wireless systems.

Production was provided by Clair Global out of Britannia Row Productions in the UK.

This leg of the tour was scheduled to wrap up in Auckland, New Zealand on 11 September resuming in the US next year. The lighting rig was due to stay in Auckland for a few weeks where it was to be rejigged for the upcoming Cher tour, again designed by Silent House.

Unfortunately, as Pink had to cancel a couple of Sydney shows due to illness, the rescheduled shows are causing all sorts of production nightmares!



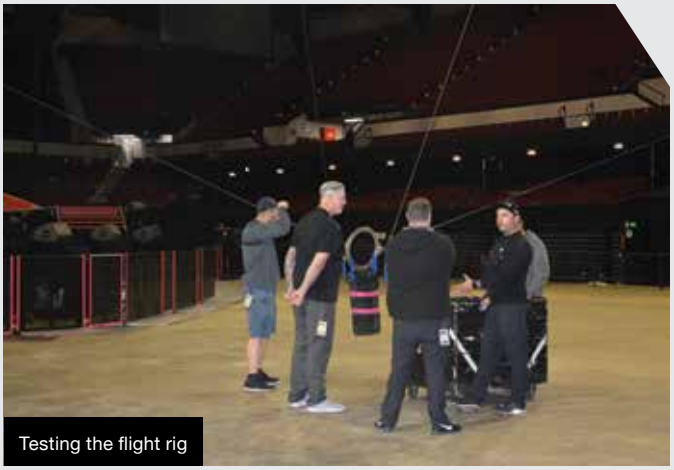
Flying Pink with TAIT

For the Beautiful Trauma Tour, Pink utilized two performer flying systems, a 3D Flight Rig and a 9-Axis Acrobatic Rig, which allowed her to take flight at various onstage and offstage locations and interact with several scenic props while flying mid-air. Her traditional performer flying system, the 3D Flight Rig, is suspended by four Big Tow Winches and flies Pink at a maximum of 6m per second around the perimeter of the arena.

For the majority of Pinks flight paths above the main stage and fan pit area, she uses the 9-axis Acrobatic Rig. The Acrobatic Rig was added to the Beautiful Trauma Tour to handle the demands of complex flight patterns while interacting with heavy scenic props. Though the 9-Axis Acrobatic Rig doesn't fly as fast as her traditional 3D Flight Rig, it is a more advanced flying solution for flying a maximum load of 453 kilos.

The Acrobatic Rig consists of a trolley system equipped with a custom rotator and a pair of T-Winches that track the length of the stage. An additional trolley system, also outfitted with a pair of T-Winches, tracks perpendicular to the Acrobatic Rig's trolley system and is followed by a single T-Winch downstage. The Acrobatic Rig can lift Pink and her scenic props up/down at 3m per second and track upstage/downstage or stage right/left at 1.5m per second. This robust Acrobatic Rig entertains numerous flight patterns simultaneously including flying Pink, her dancers and scenic pieces like the chandelier apparatus that she opens the show with or the 9m tall inflatable puppet of Eminem who "raps" along to their new duet "Revenge."

Both the 9-axis Acrobatic Rig, as well as her 3D Flight Rig, sync to TAIT Navigator providing operators with exact positioning of where the singer-songwriter is in 3D space. This technology ensures safety for the artist as well as the entire production.



Testing the flight rig

And there she goes....!

INTEGRATION'S TWO HOTTEST TOPICS – SOFTWARE DEFINED CONTROL AND NETWORKED VIDEO

by avt's Head of Strategic Partnerships & Innovation, Graham Barrett.

Graham Barrett

With over 30 years' experience in the AV industry, Graham Barrett stands in a unique position at avt. As distributors for software defined control suite Utelogy, and mature networked video technology in Harman's SVSI, avt and Graham are directly involved in changing the AV technology landscape, with both networked-based approaches to unified communications going into new installations as a complement to one another.

At avt, we see software defined control and network video as the next major re-imagination of the AV industry. I think it's safe to say that the Australian and New Zealand markets are an early adopter of these technologies. Video and audio are moving to IP, while their control becomes software-based, administered on the same network. The AV industry as a whole is engaging in this change with either a greater or lesser degree of enthusiasm, depending on who you ask.

Leveraging existing high-speed, efficient, robust, and inexpensive networks to deliver video, audio and control whereby a single platform controls and manages many spaces, rather than just one or a handful, is the mega-trend in the industry today. This is being driven mostly by end-user demand, with more interest in this technology shown by the consumer than AV technology in the past.

Customer Focus

The classic question from the IT manager or CIO is, "I spend millions of dollars building, maintaining and supporting a network in my environment, and that network carries all of my data. Why have I got this secondary, special AV network? Why can't I just put everything on my enterprise network?" That is coming directly from the end user. It's not often a conversation that's been triggered by the AV integrator or even the AV consultant. It tends to be coming from the IT professional and the owner and administrator of the environment.

These customers manage, maintain, and spend a lot of money to guarantee up-time for what is a ubiquitous data network. Almost every single network is carrying Skype, Zoom, Jabber, or some other form of critical video. Higher resolutions generate challenges, but compression technology has come ahead in leaps and bounds, to the point where video can effectively coexist on enterprise networks.

User Engagement

From the control perspective, it's the same logic that is behind Office 365, Skype, Zoom, and other productivity tools. They are becoming much more software-based and, therefore, by definition, centralised or cloud-based rather than localised within a room or on a desktop. So again, the end users are questioning, "Why do I need this special

black control box in every room? Surely I could have software that controls all of my devices and business functions?" If they are all some form of cloud-based server, and a UI delivered by a browser or personal device, why can't we do the same with AV?

The customer used to simply say, "I need some of that magic AV stuff." Now we're seeing a lot more engagement from end users saying, "No, I want to do AV this way." The really cool thing from the industry's perspective is that's because AV is becoming a business-critical service for more and more of our customers.

AMX NMX-WP-N2410 Windowing Processor

Scaling Up

That means we have to think differently. We have to be much more attuned to delivering on scale, and delivering highly consistent user experiences. The opportunity for scale is huge. Our customers are saying, "I don't want to do this the old way, I want to do this the new way" purely so they can do more of it. The demand is enormous; it's in everything from the university environment, where we're seeing massive explosions in the requirements for everything from collaborative huddles, to small teaching spaces, through to complex teaching spaces. Then, in the corporate environment, they're building floors in buildings with nearly as many meeting rooms as there are people. That demand is really fuelling the excitement and the interest for these new platforms.

Software defined control and video and audio over IP go together. Some of the first Utelogy deployments leveraged SVSI for video transport. One of the big attractors for Utelogy to SVSI was that it was network-based, as they were, and it was all open API, so it was very easy to integrate with their hardware-agnostic solution. They've grown up together; Utelogy has been delivering solutions for over eight years. SVSI is up to its fourth generation platform, developed over 10 years.

Iterative Adoption

What we've seen with both SVSI and Utelogy is end users adopting it iteratively. For example, at Queensland University of Technology, we developed an SVSI overlay for their existing standard system to roll out into new or refreshed rooms. It uses a standard AMX presentation system, with an AMX touch panel, but instead of using HDBaseT, audio cabling or even speaker cabling to a great extent, we were able to leverage SVSI to deliver all of the audio, video, and control over the network. The user experience is identical in both the new and legacy fitouts. The users don't know the difference between a traditional room and an SVSI room, but, from a deployment perspective, they're able to say at the design stage "I need data and power here, here, and here" and depending what kind of use the space is put to, install the technology as needed.

One of the key features about Utelogy is that it is hardware-agnostic, so it's not designed around a particular hardware platform, which means it can reside over the top of existing infrastructure. For example, in a university with a large fleet of existing, traditional AV control systems (AMX, Crestron or Extron) and a hundred little spaces where they just want basic control, we can look at Utelogy sitting over the top of all of that, providing for the simple stand-alone systems, but also utilising Utelogy to control and manage the more complex spaces. This extends the life of all of their hardware.

Market Drivers

The big driver that we're seeing in software defined control is cost reduction per classroom. Every single university is chasing cost reduction because of the need to scale. The other driver, and this is true for both corporate and education, is the explosion of small, simple spaces. In the corporate world, it's huddle spaces with a display, a couple of inputs, and a little switcher. The display is a couple of grand, and the little switchers are very economical, so when you say a control system to simplify operation is going to cost between $5,000 and $6,000, it's a real challenge.

In the education sector there's a mass migration of what were faculty-owned teaching spaces transitioning across to management by the central AV teams. They're looking at these hundreds of new spaces and realising they can't get the budget to put a $5,000 or $10,000 control system in each of them. That's where Utelogy and SVSI are really changing the game because they're giving AV the ability to deliver economical solutions across this huge explosion of smaller, and therefore very cost-conscious, teaching and meeting spaces.

Utelogy Meeting Room GUI

ADELAIDE'S HQ COMPLEX – Q-SYS GOES CLUBBING

QSC's market leading DSP, integration, and control platform Q-SYS is often found in boardrooms and classrooms, but occasionally it lets its hair down. Adelaide's Andy J Sound have Q-SYS controlling HQ Complex, one of Radelaide's best nightspots and band venues.

After a decade at its old North Terrace address, HQ's original premises was sold and the club was forced to move. Securing a tenancy on nearby Hindley Street, HQ saw an opportunity to go to market and see what kind of creative offerings were available from suppliers. Production and integration company Andy J Sound responded with a concept that resonated.

"The core of our design was about minimising the amount of labour required to run the venue from an AV perspective," said Andrew Gayler, Managing Director of Andy J Sound. "HQ needs to be a nightclub, a band venue, and a function space in order to maximise their income. We could facilitate that by putting in systems that enable almost anyone to turn things on and off without bringing in an AV technician. In their old location, they had to call in a tech for the most basic setups, and a few four hour calls per week adds up pretty quickly. This is the sort of work most technicians don't want to do, and is a particular issue for multipurpose venues where techs working very late the night before need to come in very early the next morning to change something."

The Core

The brains of HQ's rack is a Q-SYS Core 250i, which takes local inputs from the DJs in the main room, radio mic inputs, left/right and sub ins from FOH desks when bands are in, and outputs everything to the distributed PA. Three further areas fitted with Q-SYS amps are sent audio over the network, and can also take local analogue inputs to feed local speakers. Both the amps and the Q-SYS core monitor the speakers, and if a driver goes open circuit or a line shows low impedance, it emails the Andy J crew.

Flexibility

The staff have custom GUIs to control the system accessible from their iPhones, or the house iPad and touchscreen PC. "It's all done with the free QSYS Control app and accessed through HQ's WiFi network," explained Andrew. "You can setup password protection, and we have a couple of pages locked out that modify limits and time alignment. What's great about this system is the flexibility. We can remote in via a TeamViewer session to the local PC, and hear audio remotely. One afternoon, a function was being set-up on the

first floor balcony, and wanted to hear the feed from the DJ downstairs, which wasn't designed as an option. I remoted in, modified the setup, restarted the core and gave them the option to select that feed. It's the ultimate in flexibility; normally when you do these projects, it's very hard to anticipate everything the end user will want to do, because they don't know yet themselves."

Rocking the Room

The PA in the main room is an eight-a-side d&b audiotechnik Q array with four B2 subs. There is no house mixing desk, and touring bands are offered a desk and rack package from Andy J with a choice of SC48, PM5D, M7CL, M32, or SD8 as well as mics, wedges, and side fill included with the venue hire. Cat5 and BNC tie-lines enable connection of any digital transport. "We've tried to make the venue as easy as possible for touring bands," elaborates Andrew. "There's patching out front for left/right and sub, and you can select if you want to feed it as LR, or LR-sub. There's a Lake LM26 running AES in and out, and you can insert or de-insert that as well via Q-SYS."

Let it Shine

The main LED screen is a Gloshine, six meters wide by 3 ½ metres tall, at 3.91 pitch. Andy J also installed a 360 degree curved screen over the dance floor with panels from Gloshine, with more available to DJs as part of the floor package. The main screen can be fed from the stage, free-to-air TV, Foxtel, or the Resolume VJ system. "We have a scaler that can be patched in and out, so you can chose to scale or go in at native resolution," illustrated Andrew. "If the staff need to set up the main room for a sporting night, for example, there's a setting in Q-SYS to turn on the LED screen and route Foxtel through the video matrix, through the scaler, onto the LED screen, and turn the audio on."

Open for Business

With the venue now open for a year with the Q-SYS system running it, its value to the owners and operators is obvious. "In that time, we've had one issue with an amp," offered Andrew. "The system found the fault, emailed us in the morning, and we'd fixed it before the venue opened. And as the venue's requirements have evolved, changing the system has been easy. For example, some MCs and DJs wanted custom EQ settings for their radio mics, and we've enabled them to store and recall those."

In Control

Andrew and the team have been perfecting their Q-SYS skills, attending distributor training with TAG and rolling out multiple installs. "I've done around 20 Q-SYS installs now," mused Andrew. "The Q-SYS family are good at educating you about functionality and what the system is capable of. Q-SYS has gained market share at a rapid rate and it is now the market leading system. Other vendors are bringing out modules that interact natively with it, which expands its ability to control other devices. You can get it to talk to almost any other system via TCP/IP or RS232, and as long as you get the relevant codes, you can control multiple systems from one point."

Gefen pendants

Macquarie University Surgical Skills Lab - Sharing Revolutionary Research with Gefen Video Over IP Solutions.

Macquarie University's Surgical Skills Lab is used by the medical community to explore human anatomy. The University's faculty set out to make its current research sharing system, complete with camera-equipped medical stations, displays, speakers, and a central LCD display and projector, much easier to use. Iain Brew, Clinical AV & IT Coordinator at the Faculty of Medicine and Health Sciences at Macquarie University, decided to enhance and expand the lab's sharing capabilities by building an entirely new Gefen connectivity infrastructure.

Project Objectives

The previous system had limitations around its ability to route and control video signals. The objective was to keep the existing medical equipment, but change how the signals were transmitted and accepted in order for students to display the images from their discoveries on to the main room's projector instantly.

Project Goals

The project had to be completed within six weeks, and stay within the very strict budget constraints. Also they had to adhere to the university's commitment to sustainability and re-use existing equipment where possible.

Product Solution

To do that, Brew designed a new Gefen Video Over IP-based system that allows the entire lab to function with one cohesive matrix, thus enabling any video source to be routed to any video destination in full HD quality. Additionally, the new system allows any user to control video content sharing with an Apple iPad Pro tablet. "If a student at a pendantor individual medical station makes an interesting discovery, their images can instantly be displayed on the room's main projector," Brew explained. "And the instructor can also send their camera feed to all displays in the lab during a demonstration, or with a push of a button, return all the displays back to the individual pendant inputs. The system makes research sharing so much easier."

Brew installed one Gefen EXT-CU-LAN Matrix Controller to serve as the basis of the new Video Over IP infrastructure to guarantee seamless video sharing amongst the lab's 10 Stryker VisionElect 26" medical displays. Brew also installed 16 Gefen HDMI Senders, 15 Gefen HDMI Receivers, two Gefen KVM Senders, one Gefen KVM Receiver, three Gefen Scalers, two Gefen HDMI scalers, 10 Gefen SDI-HDMI Converters, and one Gefen Audio Converter.

Results

Brew and the Surgical Skills team worked on a strict budget within a six-week time frame. With great customer service and easy installation software, he accomplished the Faculty's goals without issue. "Gefen's Syner-G and its auto-discovery tools make it easy to quickly set up the video aspect of the installation," he commented. "We also really appreciated the great technical support from the team at Gefen."

The installation process also adhered to Macquarie University's commitment to sustainability. According to Brew, "I am very impressed with the Gefen range of products and will definitely recommend anyone exploring an AV upgrade or new install to check out Gefen. The support from the Gefen team during the entire project was fantastic."

L-R: Amber Technology's Matt Rennie and MU's Iain Brew

Maquarie Uni Lab

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The large LED screens are rolled into place

Adrian Riddell

AIDA

by Cat Strom

Photo Credits: Prudence Upton

Opera Australia's new production shatters the limits of traditional stagecraft.

The most epic opera of all time, Verdi's mighty Aida returned to the Sydney Opera House this winter with an Australian premiere production by celebrated Italian director and designer Davide Livermore.

This new interpretation of Verdi's vision of Egypt featured Opera Australia's new integrated digital technologies; 10 massive LED screens mounted on theatrical flats that slid across the stage and rotated to form different configurations

The set design by Giò Forma used minimal furniture and props with the rectangular panels, serving as the backdrops for D-Wok's imaginative and stimulating video designs, alternately opening up and closing off the various spaces.

OA's Artistic Director Lyndon Terracini exclaimed: "No other opera company in the world – no other theatre company in the world – is using technology to this extent."

Last year, in preparation for planned digital operas, Adrian Riddell joined OA as their Technology Manager and it was his task to turn Lyndon's idea to reality.

"A normal opera is set within a box, and Lyndon came up with the idea of a digital box which means we can now have unlimited number of scene changes in an act just with different content," said Adrian. "Initially we thought we had time up our sleeves as we weren't supposed to launch the first digital opera until 2019, but the timeline got stepped up quite rapidly!"

OA's automation system is brand new, costing close to $1 million, and next year they will add two revolves into the floor.

The automation system is made of parts from different companies around the world, although the main supplier has been Theatre Safe Australia based on the Gold Coast.

TSA supplied the EXE Technology 52cm DST Truss system from Italy, which is specifically designed for LED screen tracking and rotating. The design brief from Opera Australia was that it had to be loaded in and loaded out within the typical Opera rep timeframe of around two hours. The resulting system does this with all the trusses being able to drop onto trolleys and get pushed off stage, only having to unplug four cables on each truss.

"The system allows for endless rotation, however for the Opera project we limited the control system to only rotate to -540 and +540 degrees (1080 degrees of total rotation)," revealed Stuart Johnston of TSA. "This is due to the LED screen cable limitations."

The system is controlled and powered by a Raynok control system, which does a live multicast output to the disguise media servers with the X&Y Position, speed, and velocity of each of the screens. That way, the media content can track and adapt to the movement and rotation of the screens during the show, allowing the designers to really explore their creativity.

The control system can do this in multiple ways, including over Art-Net, however the Opera is currently running over PSN to the disguise system. The DST Truss in the configuration the opera has it built in allows it to track and rotate a 900kg LED screen or scenic element. The DST trolley has a top speed of 20m/s and the rotator has a top speed of almost six revolutions per minute, so it has a fair bit of speed in the system, especially since this is only the mid-sized DST truss.

"The Opera Australia control system was designed to allow the client flexibility in the future, so here at TSA we spent time in not only understanding the current needs of Opera Australia, but their needs in the future," said Stuart. "So everything from the control drives to the control software, and even the cabling, has been designed to have the capability of controlling different types of motors or hoists so they don't have to reinvest in their base control structure when it's time to adapt to a new show. TSA is proud of the outcome that we have provided for the Opera Australia project and one comment made by one of their staff members was 'This is the first automation system that we have had that has just f*%^$#g worked'! Comments like that is what makes us proud, no matter what project it is on. To us at TSA, it's the ease and flexibility it gives the creative team that really counts."

Big Picture were asked to come up with a video solution with various suggestions from creatives. Ideally they wanted to project to all the screens, but technically that was not possible, especially in the time frames for resetting the stage.

“There were other technical disadvantages such as shadows created on the panels when people walked in front of them, so we chose to go with an LED option,” said Adrian. “This is custom 3.9mm LED product developed by Big Picture that has a unique combination of LED and processing which gives us really good colour grading for the images. We only run them at 6%.”

The visual elements of the show are the result of 175 square meters of 3.9mm LED with Brompton Processing arranged into 10 columns 7m tall by 2.5m wide. These are all driven by a fully redundant disguise 4x4 Pro media server system. In addition to the LED outputs there is also a front and rear projection element being serviced with Barco UDX-4k32 laser projectors, the RP utilising one of the new 0.4: UST Lenses. The disguise system is managing four 4k content layers as well as dealing with incoming data streams from the SOH fly system from Wagner-Biro, the Opera Australia automation system from Raynok that manages the individual screens tracking and rotation, as well as the lighting RF tracking system from Zactrack. Finally, show control is being generated by the ETC lighting console.

“It has been a task in itself to create a base file within disguise that has all of these external data parameters already written in so that we can distribute the base file to all of the upcoming productions that will be using the digital setup,” added Nick Bojdak, Big Picture’s Account Manager. “We are expecting productions to implement Notch effects into their visuals at some point in the 2019 season.”

Testing the LED screens

“The first year is a bit of an interesting one-off in that Aida is in rep with Rigoletto and Lucia, which are both traditional set designs, so although we are only dealing with one creative team utilising the digital platform it means that the entire stage infrastructure needs to be installed before every show and removed afterwards so another set can be installed. The main challenge here was to be able to install 175 square meters of hi-res LED in two hours and then be able to remove it in one hour. We got creative with some customised set carts and some specialised locator pins which enable us to break the screens down into 2.5 by 2.0m sections. This method of building LED is not new but it has not been widely adopted with hi-res products as inherently they are far more fragile due to the large number of LEDs so close to the edge of the panels, as well as the precise manufacturing tolerances required for a seamless wall. So far we have been really happy with how the product has stood up to the rigorous in and out schedule.”

The OA production team did a test build at Red Box in Lilyfield a month prior to loading into the SOH. The automation system was built, screens were hung to work out where cables would come down through fly bars, and a little bit of reconfiguration saw everything fall into place.

The SOH’s Joan Sutherland Theatre had its own inherent problems; it’s a small venue, so when the screens go off stage there’s no stage space for cast members. Working out how to mask off stage pieces as well has been a challenge. Creatives turning up with content late in the day was problematic too.

“We tried to put policies in place to get information before they arrived so we could have some of it pre-programmed but things changed,” said Adrian. “With a traditional opera the set would have been built months beforehand but with the ability to change content relatively quickly, you can theoretically change stuff on the fly.”

Having said that, some of the content took a long, long time to render. The large black panther took a whole month to render and could not be changed!

As with the use of any new technology there will be teething problems at the start. Unfortunately in this case it was opening night when one module (out of over 1400) was intermittently misbehaving.

“After working perfectly for six rehearsals and a full kit check that day, it decided not to play the game,” lamented Adrian. “It’s the opening night bug, but we sacrificially burnt that module afterwards. Touch wood, we haven’t had a problem since.”

Lighting designer John Rayment had to ensure that the lighting responded to, and coexisted with, the LED content and the technology. The context being that OA is moving towards the implementation of a new standard lighting rig, proposed to be entirely of robotic LED luminaires, wash and profile. The design for Aida had to anticipate, as far as was practical, that new environment given that the production is expected to stay in active rep for many years. With the physical staging environment always changing, with the five pairs of LED screens rotating and tracking, there was sometimes a quite complex requirement for lighting transitions to work in and around the staging animations.

“Every effort was made to avoid light hitting the screens although that was not always possible,” said John. “The LED screens are forgiving, at times, when the content is dominant. A carefully choreographed sequence of lanterns handing on to other lanterns as artists moved about would assist in minimising the spill angles although that, of course, presupposes that those artists will be consistent in their blocking which is difficult with different casts through a season.”

Responding to the content - colour, brightness, strong accent lighting within the content and so on - was obviously a major factor and it was hoped that artists and the analogue stage will look to belong with the digital content around them.

“This underlies any designed stage lighting, of course,” added John. “Colour is both relative and subjective. The core response is to the dominant

feature, then to fold all the other elements into a credible lit environment. The other keys are always present, such as making the most of facial tones, particular costumes, and furniture.”

John reports that brightness was an issue at times saying a median intensity was set for the screens and they then sought to adjust specific content streams within the media server.

“We did not have control of the screen brightness at the lighting console, which I would seek to have in future as there are occasions, in my view, when the LED screens do need to be treated as lights operating as part of the larger design.”

It was the intention to deploy tracking technology for the lighting, such that nominated artists would be fitted with unique identifiers and that (notionally) any robotic lantern in the rig could be assigned to follow them. This technology has been out in the market for some time and continues to improve.

The company is very committed to this technology being part of the standard offering, along with the new lighting rig. This is not pursuing technology for its own sake but recognising that they would be foolish not to examine the tools available to the staging of complex productions as they develop.

“Technology itself is not an enemy of live performance: it is the application of technology, in whatever form, that is the measure,” remarked John. “That that measure will be an entirely subjective response, is a given.

“Generally, the use of any technology by any creative team is a choice. The idea that lanterns throughout the rig can, in principle, be individually tasked to track targets - performers, scenery and

the like - is one I find attractive as a designer. The choice to use such technology would come down to how appropriate it is within any production concept and design aesthetic."

This production of Aida lent itself to the idea of such technology - not just to notionally replace traditional front-of-house followspots but as a means of containing light within the stage house quite specifically to defined areas relative to the performers and their movements. There were scenes planned to have a front gauze which added to the appeal of having lanterns on stage being able to follow artists.

"This is not the place for a lengthy treatise on the merits or otherwise of the tracking technology," mused John. "The hurdle to overcome was that there came a point in the technical rehearsals when it became obvious that we were asking too much in the time available. Having placed a significant reliance on the technology as a design component and to then have to turn around and do without it was disappointing. Not to speak of the significant redesign required in the latter stages of stage rehearsals."

Those scenes where the technology behaved like it said on the box, as it were, were tantalising and not a little exciting. Being able to assign lanterns to follow artists based on their location; to assign such lanterns based on the most favourable angle of throw at any given moment was a great design asset.

"However, we were unable to reach a point of confident reliability and consistency with the technology and thus chose to go without on this occasion," said John. "I have used tracking technology on other projects with great success. I look forward to developing its application in the future."

OA offers a standard rig to all productions with a mixture of conventional (fixed) instruments and moving head lanterns. It has been introducing more moving head lanterns over the past five or so years to provide greater flexibility.

Sydney Opera House has recently replaced all the conventional lanterns on the idiosyncratic Orchestra Bar with the Martin Mac Encore Performance WRM. The choice to go with the WRM 3000K LED source (rather than the CRD 6000K LED) is presumably so that the lanterns will cohabit "better" with current opera and ballet standard rigs and their widespread use of conventional (incandescent) instruments.

OA has replaced its own previous mix of Martin MAC 2000 and VL 3000 in the standard rig with the MAC Encores, for uniformity. There is also a series of single Ayrton S25 Wildsuns rigged on the centre of each of the overhead lighting bars which John describes as a very useful and punchy workhorse.

"I additionally replaced further conventional instruments, for Aida, with eight Claypaky K-Eye K20 HCR," John added. "I enjoy their output, colour rendering and variable colour temperature. I have had to have an eye on the future standard rig, so attempted where I could to use the moving head instruments first. I found, too, the conventional lanterns struggled against the brightness and source characteristics of the LED screens. The MAC Encores also were lacking punch in some scenes (and with some colours) but nevertheless a versatile lantern."

Video cues were triggered from the ETC console with John adding that it all worked well, although he did have moments of confusion: initially it was thought that allocating any lighting cue number with a ".5" suffix would be enough to indicate a video cue only.

"This got a little unstuck and unwieldy when a video cue or a lighting cue moved in the stack relative to each other," he said. "And, when the tracking technology was removed, there were many point cues required by the subsequent plot modifications. We will work to a better naming protocol next time."

Traditionally there are no audio components to an opera but the Joan Sutherland Theatre has an unusual pit configuration with a very small opening which means you don't get the fullness out of the orchestra. As a result some of the music is amplified, especially the instruments towards the back of the pit, to bring it out. The theatre utilises the new Vivace electroacoustic reverb system.

"Basically each of the instruments are mic'ed and the feed goes into the Vivace box where in a 3D space you can say where these elements are," explained Adrian. "Vivace then works out the reverb time and the arrival time of each of those instruments and feeds it to 160 loudspeakers. It makes it sound like it's coming from the pit whilst enhancing the reverb in the room. With it on, you'd never know but turn it off you'd notice it immediately."

OA will present three digital productions in Sydney next year, and the first will be seen in Melbourne in 2020. The 2019 season of Madame Butterfly, Anna Bolena and a new piece based on Brett Whitely will also feature a full moving light rig.

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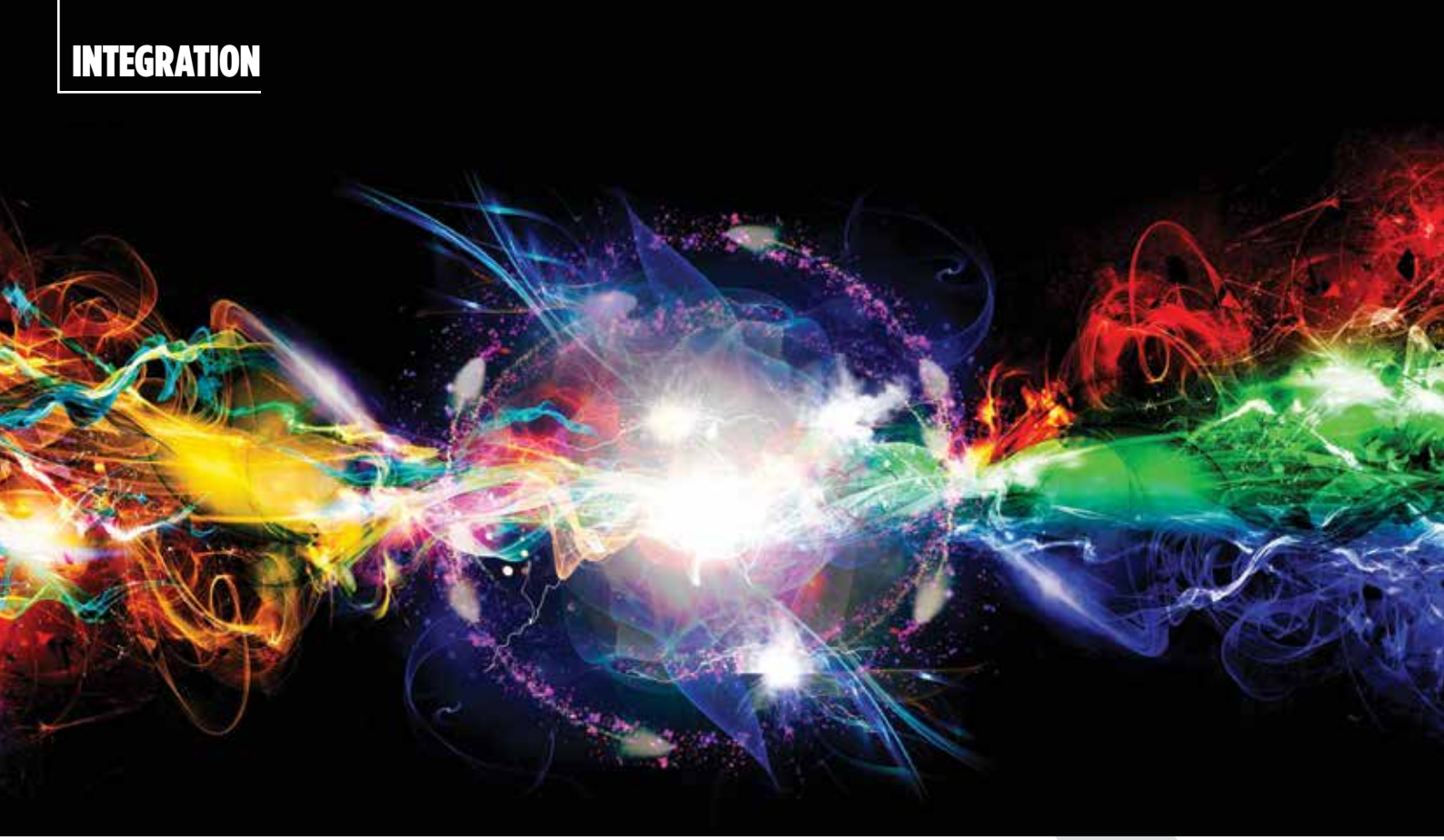

AVOLITES: THE LIGHTING AND VIDEO EVOLUTION

Stephen Baird-Smith, Avolites' Sales Manager, discusses the company's 'ear to the ground' philosophy and how that has secured its pole position in developing the future merging of lighting and video design and control.

Eight years ago, Avolites was the only lighting control console manufacturer to recognise, pioneer and champion the synergy between entertainment lighting and video design through product development. Well respected and loved for its intuitive interface consoles, networking capability and touring dimmers, in 2011 Avolites added the sophisticated Ai media server to its portfolio of products. The mission: to create a seamless interface and common language for video designers, lighting designers and programmers alike. This year sees a further evolution and at Prolight+Sound 2018, Avolites launched its new light and video integration feature set, Synergy.

The complexion of creative content of shows, be it lighting, sound, set design or video, is evolving. Video content increasingly drives a production's visual aspect, while the development of sophisticated new light fixtures, projectors, and cameras, means that control system developers have to work hard to keep pace. There is a complex relationship between lighting design and video design. Bands and audiences relate well to video; they're used to engaging with this kind of content. However, even the most sophisticated video content can induce passive watching if it is not supported by dynamic key or mood lighting. The most successful show designs are multi-layered combinations of set, lighting, and video. When the lighting and video content work together they can pull the video out from its two-dimensional space into three, making for a richer, more engaging, sometimes highly interactive experience for artists and audiences.

The challenge lies in the translation of a show's original video content from the rectangular confines of a computer monitor to the real-life application on stage. Increasingly, content has to be created to work across both LED videomapping and projection-mapping outputs, as well as various shapes and sizes of screens. With the advent of intelligent LED lighting fixtures, it also has the potential to be mapped across a production's lighting elements as well - as you can imagine, it can get complex! That's why visualisation is a big part of the Avolites product design workflow. It allows creators to move away from the four corners of the screen into a much bigger, three-dimensional space.

Synergy Video Multi View


Stephen Baird-Smith

In fact, Avolites' latest development, Synergy, evolved from studying the workflow of designers as a whole - not just the lighting designer and the video designer, but the content creator and set design process. Avolites' ultimate holy grail is to bring all these disciplines together in one unified workspace. We see a situation where there's a control surface, which is as adept with video and cameras as it is with lights, and where the workflow is the same whatever you're controlling.

Ultimately, that should empower people to do more. You may still need a media server or lighting specialist on the gig, but have control from one unified surface or the same consoles on the same network. Although that may sound simple, I can assure you it's not! Even for a company like Avolites, which has both media server and lighting console R&D teams in the same building, it has been challenging to bring those two technologies together. Yes, there's a lot of commonality, but at best the two speak different dialects of the same language. At the same time, in terms of control, there's much that video can learn from lighting and vice versa.

With the first version of Synergy we have endeavoured to make it straightforward to connect lighting and video systems using a dedicated Avolites protocol. We have further simplified the system so that now video can easily be routed through any lighting fixture, without the need for an external Art-Net merge. This two-way comms system is critical. Designers need to be able to see what their media server is doing on their control surface, otherwise workflow is significantly slowed down. For example a key features of the Synergy platform is the ability to connect and configure the Ai media server from the Titan interface.

Synergy's Lightmap feature means that users can stream Ai video colour data through any fixture group, including both RGB and CMY fixtures, to instantly integrate them into a larger video canvas - meaning that everything from high-res LED screens to LED fixture groups can be controlled from one intuitive User Interface (UI).

With these developments our goal is to create a platform which is creative enough to speak to the artists who are creating content, or lighting the shows or scenery, yet is technically adept enough to be able to deliver all of the detail and precision that is required on shows. As we continue to integrate the two systems it's important to recognise the lighting console and the media server still have their own superpowers. Lighting consoles are masters of control, whichever brand you're talking about. Lighting control has evolved over a long period, while media servers are still relatively young. Using each as an engine for what it's good at is where the future lies.

We haven't had too many people using Synergy yet because it's barely launched. However, when Gary Numan's lighting designer, Luke Edwards, used it to program our exhibition stand at Prolight+Sound in Frankfurt, he said he was blown away, delighting in the fact that the visual barriers had been removed. I think that's the key. He was programming lights and a media server concurrently, and he was using the server to run the lights. It was completely interchangeable, he didn't have to think in a different way when it came to having a media server controlling the lights.

Change can be a difficult pill to swallow, but we all know it's the most adaptable who succeed. We're not forcing anyone to merge video and lighting, our media servers still work great on their own, or with any other console, and our lighting consoles still work well on their own. Nevertheless, we're addressing what we see as an obvious creative and technical challenge to the industry, and we are set on pioneering the solution.

PNAU

by Cat Strom

Mandylights created an immersive live performance spectacle for Australian dance trio Pnau, transforming the Enmore Theatre into a pumping, pulsating club environment.

The band got in touch with Mandylights in order to put together a whole new show including visuals, lighting, and stage layout for their Australian tour as well as their performance at Splendour in the Grass and future festivals.

"The band were really trusting with the design which was good because the whole design and execution had to be turned around in less than a month," commented Richard Neville of Mandylights. "Initially we placed our design idea into 3D and programmed a five minute segment of the show which we sent to the band members who were scattered around the world."

Pnau has been together for 17 years so they know how things are done - thus making Mandylights job easier. Richard remarked that the band members were very involved in all aspects of the production with Sam Littlemore heavily driving the video content for the show and Peter Mayes doing all of the timecode production.

"Front man Nick Littlemore is also very involved in the creative process and it's rare to get such a collaborative environment where all of the band members are so involved in the different components," said Richard. "By the time we got into production rehearsals, everyone was on the same page trying to get the same great outcome."

Mandylights brief was to produce a world-class touring show that could be scaled down quickly for smaller venues plus have a floor package option for festivals. With all new video content, it was important that the lighting played perfectly with the colours and progressions to create a holistic visual design.

Richard chose to incorporate Ayrton MagicBlades into the show for their versatility, saying that the MagicBlade-FX has enough tricks to produce an entirely new look for each song; no mean feat when the set is 80 minutes long.

"That's what really attracted me to them," he said. "Their zoom is really fast, as is their movement, making them ideal for EDM sets where you have fast tempos and changes, and you need to be pumping out huge looks."

The MagicBlades form a rear wall of nine rows of three fixtures which is the main look for the show. They are situated on rolling dance towers that can be set up quickly. In smaller venues, the video screen was located behind the MagicBlades, so it was important to have low profile towers.

"We didn't want to have truss uprights with lots of metal and cabling visible," said Richard. "Each of

these stands were only 20cm wide which means when we had the video screen upstage the punters still got the full video effect."

Nine MagicBlades were situated on the front edge of the stage in front of the risers with nine more on the rear truss, aligned with the towers beneath to carry the look from the stage up into the roof.

Pnau's current look is very UV based, so Mandylights looked to incorporate UV into the show without cluttering the stage look with a front truss. Consequently, the band is lit by four towers of side lighting, with each tower holding three ShowPro EX36 LED Floods running amber, white, and UV LEDs. A row of ShowPro Collider strobes rounds out the stage deck lighting package that sit upstage around the band in an arc.

"By using LED UV rather than traditional UV fixtures, we got these really pinging colours across the band without having to resort to traditional stage wash or front light," explained Richard. "The Collider LED strobes are only momentarily used as strobes. I used them more as massive LED floods; Pnau are very big on reinforcing the beat in each song and so a lot of the time they were used to deliver precisely timed pulses that hit the beat. They were the baseline for the lighting rig and they were the fixture that reinforced all that the band wanted to emphasise."

In the roof the Martin MAC Viper Profiles reinforce what's happening on the stage floor. They do big fans, duplicate the colour look that is happening with the MagicBlades, and are focussed very tightly. Other than the MagicBlades, the tour used no wash or beam lights as it was "all about creating a smart, cohesive look that didn't resort to the usual mish-mash of beams and spot-wash-spot-wash configurations that's seen everywhere."

Lasers were a big part of the show with Mandylights incorporating eight ER Productions Beam Blasts and five Sharpy lasers. Richard's theory on lasers with EDM acts is that as a lighting designer you only need a core number of effects to excite the crowd.

"All the Beam Blasts do is go on in green with hundreds of beams cutting to the beat and rotating through a prism effect," he said. "We only used the Sharpy lasers as moving laser fixtures, we didn't turn the lamp on, and they were used to scan across the crowd. They were great; tons of colour and beams for two songs."

For control Richard ran an MA Lighting MA2 console with video controlled by the band themselves with timecode, something that Richard described as quite a relief.

"It's unusual to have a band that is so well organised that they are actually triggering the video, which is great as it frees us up to just work on the lighting," he said. "The whole show is on code minus a few flashes and flourishes we put in from venue to venue. After three days of production rehearsals we ended up with just over 1000 cues in the set."

Richard stated that he is happier with this show than any other show he has ever done, a result that came about from such collaboration between the band and the designers.

"We had the right amount of time in rehearsals, the right people involved and the right attitude from everyone," he added. "We also had the same love and respect for the music. It was like the perfect storm."

TICK TOCK, OFF THE CLOCK

by Andy Stewart

Sometimes an album comes along where the musicians involved are close friends of the engineer. Money doesn't seem to be a problem and things stay loosey goosey. The work gets done… then the wheels fall off.

Here's a warning to engineers across the nation: if you're planning to work on an album in the coming weeks without a written agreement from your clients about the projected costs involved, take my advice: run! Run fast and run far away…

Rather than work for free for the next two weeks, why not take a holiday instead? You could go camping with the kids, surf some waves in Fiji or just stay home and watch movies all day.

If that all seems ridiculous, impractical, downright lazy even, then presumably that's only because you're earning no money in that time, right? But if you're gonna work for free anyway because your client has no money, and deep down you know they might not pay you, wouldn't you rather just have a break instead? Or are you prepared to take the risk?

Part B of my general warning is this: don't let finished album tracks walk out the studio door before you've been paid, ever. The costs involved in manufacturing an album and releasing it into the wild via a publicist (not to mention the costs of making video clips etc) are significant, typically involving thousands, and sometimes tens of thousands of dollars.

With that in mind, if you're expecting to be paid promptly by a client who's A: already got the song files, B: is strapped financially, and C: is talking openly about pressing CDs and vinyl, then please don't go crossing a busy street any time soon. You're clearly blind to the world around you.

Albums Destined To End Badly

Sometimes albums sneak in under our protection systems, it's true. Our organisational and/or legal defences are not always the best to begin with, it must be said. Our working contracts and cost projection forms we typically hand out to clients are often a bit vague to say the least…

"What? Cost projection what?! There's a what now that I have to hand out?"

Exactly! Most of us wouldn't know a cost projection form from a Yellow Eared Honeyeater (that's a bird, by the way).

Most of us have flimsy contract paperwork at best in our studio's Word documents folder (cue Steven Colbert spraying his coffee over the first three rows of his audience)… Sorry, I lie again. Virtually no-one I know has a 'Contracts' folder, or even a basic framework of an agreement that they can modify to suit a particular client. Indeed, many engineers I know have never provided their clients with 'a few things to agree on before we start' paperwork… ever!

The main excuse for this, it's argued, is that because work is often fired at us from all angles, and by several sources: record labels, previous clients, website applicants, friends and acquaintances, an agreement covering everyone would be impossible to draft. Does this sound like familiar logic to you? If it does you're not alone, but nor is there any truth to it. A simple one-page generic document that outlines your basic costs – even if it's just your daily rate – is far better to hand over to a client than a wink and a handshake.

Paperwork Allergy

Most of us (myself included) loathe the idea of starting off an artistic endeavour with a discussion about legal contracts. It seems to run counter to everything that defines our job. Do we really want to kick things off on such a cold, calculated footing? Probably not. But should we nevertheless force ourselves (if necessary) to have that conversation with our prospective clients about costs, daily rates, credits and percentages? Absolutely. Awkward and difficult though it may be, it's far easier than what may transpire later if things go awry.

The problems associated with doing work in good faith, without any written (or sometimes even verbal) agreement in place, is that later on when the work concludes, the final bill often comes as a shock to the client. There are complicated emotional reasons why that is, but suffice it to say, it's a bit like running a bar heater all winter to keep you warm at night, knowing that the thing chews watts and the power bill at the end is likely to be enormous. Being aware of this fact doesn't make the inevitable arrival of the bill any less shocking. You're still left reeling when that envelope is opened and you're faced with the reality of what you've been turning a blind eye to all winter. The same logic applies to an album project, whether it involves recording, mixing or mastering. The only difference being that the shock is often manifestly worse.

Working With Friends

The worst of these scenarios inevitably involves friends, and the closer the friendship the more extreme the possible fallout.

And although the logic might seem inverted, it's more vital than ever to give some sort of written outline of costs to friends than almost anyone else (again, a daily rate sheet would be a bare minimum, printed out on your letterhead and signed by you). With friends, far too much is taken for granted; there are far too many grey areas in the relationship and untold numbers of assumptions hidden just behind any verbal pat-on-the-back handshake agreement you might foolishly make between you.

There might be the seemingly obvious assumption from them (or from you) that they'll be getting a hefty discount, being friends. Fair enough, that's fine… if it's a clearly stated fact in writing from the get-go. That way there are no assumptions drawn that the other is unaware of. Miscommunications like this around money can be disastrous, even to long-held friendships – and it happens all the time.

A written agreement, even if it simply lays out your daily rate and your percentage mates-rates discount is a good start. It will protect you both from most unforseen dramas, though not all.

Quoting for the whole job as a 'package deal' is another fraught path down which many friendship deals often journey, at their peril. These are dangerous at the best of times, but when friends are involved the risks are far worse. A set priced fee for a job of unknown length is always an insane proposition in my opinion, but with friends there's an added unwritten (unless you write it down!) expectation that you might do extra work for free if extra work is involved. An album will always involve extra work, especially if your client thinks it won't cost them anything. Never has there been an album that couldn't be tweaked, edited, remixed or added to in some way. Package deals are for cruise liners, not albums.

The other assumption that can be made by your friend and client, where no written agreement is signed in advance, is that a 'fair and reasonable' cost for the whole project might have already been established in their head without you ever realising it. To use our power bill metaphor again, it would be like them assuming that the bill for the quarter will be $120.00, irrespective of what lights are turned on or how many hours they run the bar heater. Clearly this is an unreasonable assumption to make, yet this also happens on a regular basis.

And finally, things take time, and sometimes this is hard to perceive when you're the client… especially when you're not present at the sessions. If you're working alone, whatever you do, document each day's proceedings with an outline of the work you did on which songs.

If you're working in a studio, protect yourself – your time (and sanity) – against the dramas of potentially working for free. No-one values your work as highly as you do, unless you put it in writing. If there's no written agreement, chances are one day your client is going to say: "there's no way it took that long or should cost that much. I'm not paying."

If this hasn't happened to you already, the day is likely to be just around the corner.

Andy Stewart owns and operates The Mill in the hills of Bass Coast in Victoria. He's happy to respond to any pleas for recording or mixing help... contact him at: andy@themillstudio.com.au


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DEPLOY THE QSC Q-SYS PLATFORM IN MEETING ROOMS

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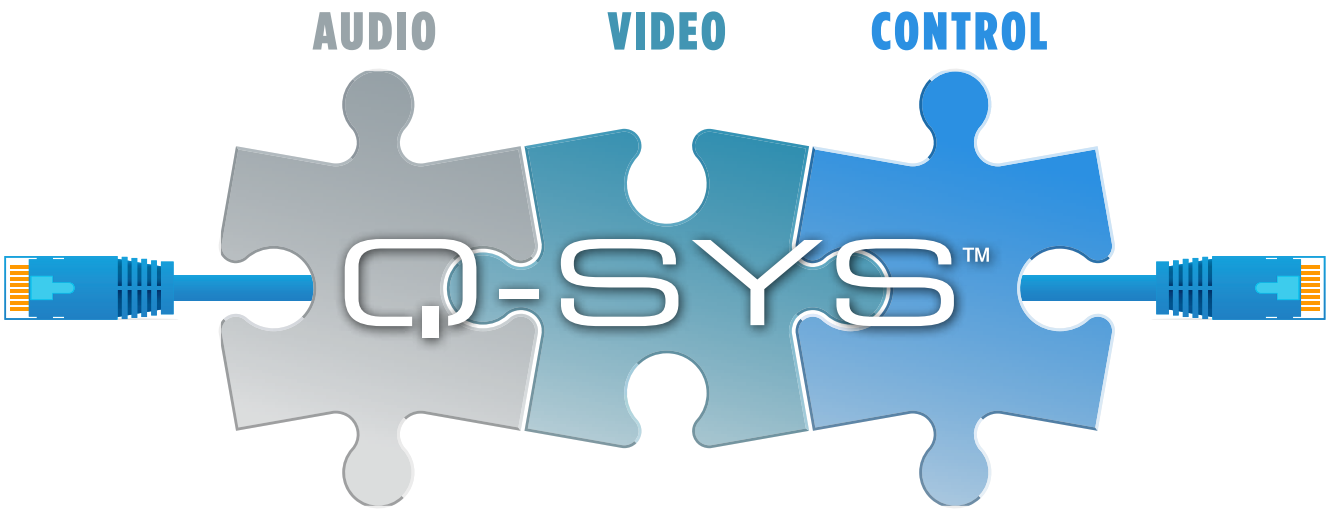


The Q-SYS Software Platform is an audio, video and control platform that leverages the power of Intel processing, the robustness and mission-critical reliability of Linux realtime operating system, and the interoperability of IEEE networking standards to deliver an open and IT-friendly ecosystem. The capabilities of Q-SYS software-based processing and control transcends the limitations found in single purpose hardware-based products.

Q-SYS Conference Room Integration Solution

SOFT CODEC INTEGRATION – The Q-SYS Platform allows for an easy, plug-and-play experience for the end users to interface their own device or in-rack PC with the room's audio and video camera streams for soft codec applications like Skype for Business or Zoom without any special device drivers.

ROOM GEOGRAPHY SOLVED – Q-SYS end points devices allow the user to connect on the table (via Q-SYS touch screens), under the table (via I/O USB Bridge), or in the rack (via Q-SYS Core processor). This networked solution also allows you to use as many Q-SYS conferencing cameras and as many USB end points as you like, all without a matrix or additional USB switches. Best of all, Q-SYS bridging peripherals are all PoE.

TRANSPORT & CONNECTIVITY DONE RIGHT – Connect your Q-SYS processor and peripherals to the network switch using inexpensive CAT-5/6 cable, and then use standard USB 2.0 connection points from the Q-SYS bridging devices to the host PC's. Eliminate cable length limitations and the costly mix of extenders and matrix switchers commonly associated with traditional systems.

SINGLE UNIFIED SYSTEM – You can create a seamless, intuitive user experience for your customers because the system won't be a piecemeal collection from different manufacturers. It also means that your IT staff will only need to learn a single platform to support the system.

The 2nd ACETA Industry Convention will be held in Wangaratta on Friday 3rd to Sunday 5th May 2019

Watch our website as we finalise the programme.

aceta.org.au

aceta
Australian Commercial & Entertainment Technologies Association

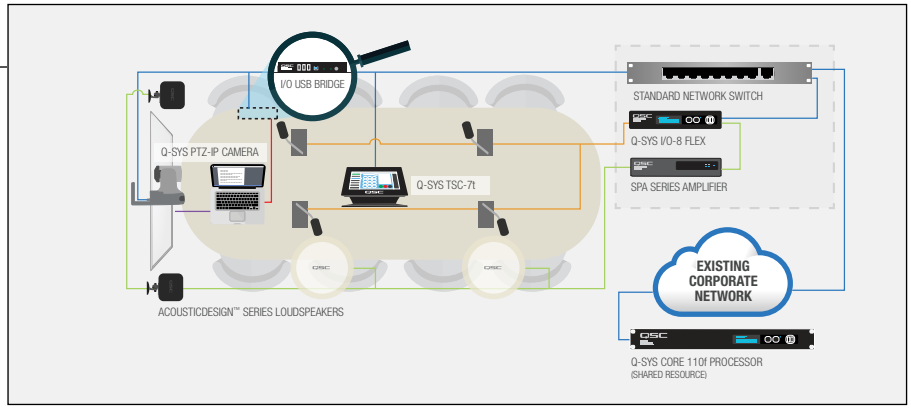
Here is a look at some common Q-SYS setups for small to medium meeting spaces:

STANDARD CAT-5/6
USB 2.0 OR HIGHER
HDMI FOR PRESENTATION VIDEO DISTRIBUTION
ANALOG AUDIO INPUTS
ANALOG AUDIO OUTPUTS

SMALL MEETING ROOM

6-8 people with shared Core processor

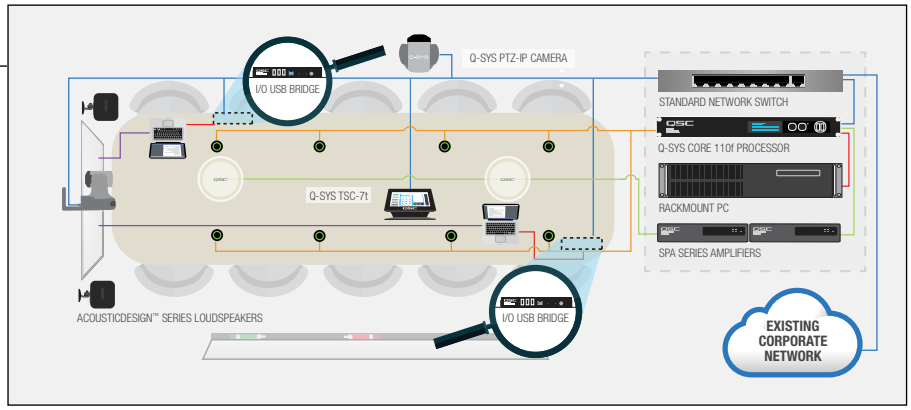
In this example, the Q-SYS Core 110f Unified processor is shared on the network to support more than one meeting space. Class-leading audio and cameras are bridged to the PC via USB for soft codec video conferencing applications, while bring-your-own-device support is also provided for PC-based video conferencing.



MEDIUM MEETING ROOM

6-10 People with Stand-Alone Core Processor

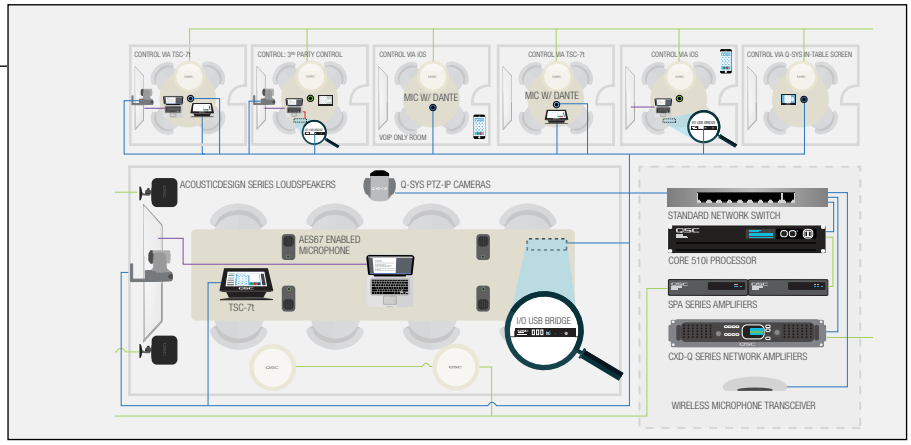
This approach puts the Q-SYS Core 110f Integrated processor in the room, with concurrent AV-to-USB bridging devices in multiple locations. Q-SYS PTZ-IP conference cameras communicate with the Core processor via standard network switch, removing the need for a dedicated video switcher.



MEDIUM BOARDROOM + HUDDLE ROOMS

7+ Meeting Rooms

The Q-SYS Core 510i processor enables BYOD support for PC-based conferencing in all huddle rooms via USB. Microsoft Exchange server integration allows for corporate phone directory on touch screen dialer, while each huddle room utilizes a touch screen dialer for VoIP audio conferencing.



MULTIPURPOSE ROOM

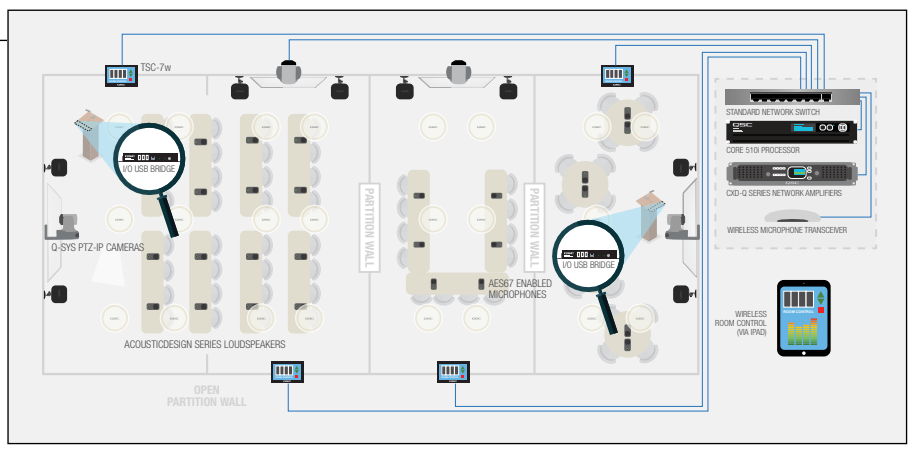
Reconfigurable for up to 4 large meeting rooms

In this example, multiple HD cameras are mounted throughout the space without the need for dedicated video switching equipment. QSC touchscreens are wall-mounted throughout for simple room setup changes. The Q-SYS designer software also lets you create User Control Interfaces for wireless control via iPad.

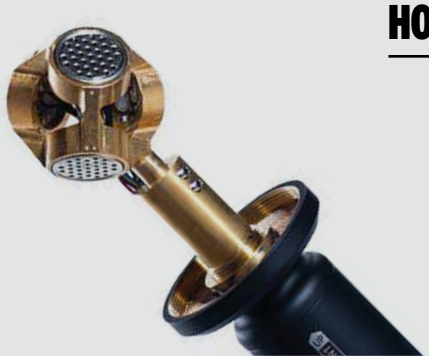
THIS IS Q-SYS: INTEGRATED AUDIO, VIDEO, & CONTROL

All of the operations within Q-SYS function at the software layer, providing a highly scalable platform that can grow to fit future needs with a simple firmware update rather than the traditional “rip-and-replace” approach often experienced with hardware-based AV products. For meeting room applications, these software-based operations include AV connectivity via USB to support soft codec video conferencing applications, VoIP functionality with LDAP and IPBX registration, multi-channel acoustic echo cancellation (AEC), SNMP real-time status monitoring and much more.

To learn more about the Q-SYS Platform, visit QSC on the web at **www.qsc.com/qsys**



AMBEO VR MICROPHONE



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SENNHEISER

Especially designed for 360° spatial audio recording, the easy-to-use AMBEO® VR Mic is an ambisonic microphone fitted with four matched KE 14 capsules in a tetrahedral arrangement. The AMBEO VR MIC uses Ambisonics. Ambisonics is a technology for sound field recording and playback at a single point in space. The recorded signals can be reproduced from all directions in space. This enables full audio immersion – with sound arriving from all directions (360°) in three dimensions (3D). As a result you get fully spherical Ambisonic sound to match your VR video/spherical 360 content.

The AMBEO VR Mic is meant to work together with specialized high-end software and hardware. Ideal companions for the AMBEO VR Mic are, for example, field recorders like the Zoom F8, digital audio workstations (DAW) like the Avid Pro Tools HD or the Cockos Reaper and binaural decoders e. g. from Noise Makers. Output is possible via Head Mounted Display (HMD), VR Game Engine or 360° Social Media platforms.

Dimensions	215 x 49/25 mm (L x D)
Frequency	response 20 Hz to 20 kHz
Max. sound pressure level	130 dB(A) for 1 kHz
Transducer principle	Pre-polarized condenser microphone
Weight	400 g
Microphone connector	DIN12M, use enclosed adapter cable to convert to 4x XLR3M Polarity: Pin1 (GND), Pin2 (+), Pin3 (-)
Pick-up pattern	4x cardioid, in A-format arrangement (1: front-left-up [FLU], 2: front-right-down [FRD], 3: back-left-down [BLD], 4: back-right-up [BRU])
Nominal impedance	Approx. 200 Ohms
Min. terminating impedance	1000 Ohms
Equivalent noise level	18 dB-A as per IEC 61672-1 / 27 dB CCIR as per CCIR 468-3
Power supply	4x phantom powering (P48) as per IEC 61938 (48 ± 4 V), 7 mA each
Sensitivity	31 mV/Pa (-30 dBV)
Matrix reference	Center of the capsule holder
Mixing to B-format	W = FLU + FRD + BLD + BRU / X = FLU + FRD – BLD – BRU / Y = FLU – FRD + BLD – BRU / Z = FLU – FRD – BLD + BRU

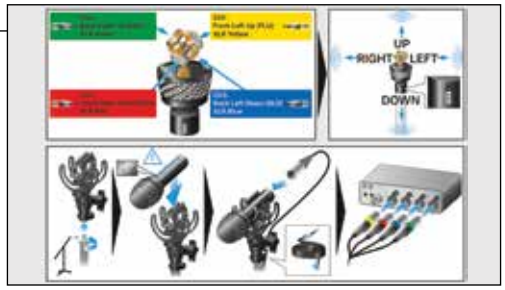
SENNHEISER

1

Setup

Microphone output is in the form of a 12 pin connector on the end of an extension cable that terminates in a splitter with 4 numbered & colour coded XLR outputs, one for each of the KE 14 capsules – the Ambisonics A Format. The field recorder needs to have a minimum of four channels to accommodate each of the mic capsules and be able to deliver phantom power to all 4 inputs. Connect the XLR's in the correct order – cable one to input one, two to two etc.

Setup Gain Link – assigning all four channels to master gain control. This ensures equal gain control over all four channels creating the correct sound sphere.



2

On Set Microphone Placement

The 3D sound field is captured spherically from the point in the sound field where the VR Mic is positioned. When used together with a 360° camera rig, the VR Mic should be mounted as coincident as possible with it. Align the "Front" marking on the VR Mic with the intended front of the 360 camera.

In VR recording, the mic will be recorded in the video footage and needs to be positioned at a point where it can be edited out in a way that will not disrupt the video content.

Set recorder level to where it's peaking at around -12dB, maximum -6 dB.

Sound recorder should be placed as close as possible to the camera.

3

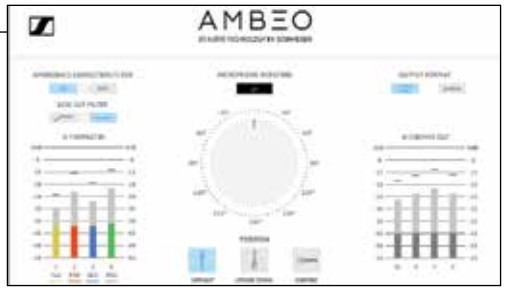
Converting the recording to B Format

Minimum requirement is a work station that is able to handle a 4 channel buss structure.

You need to load the Sennheiser AMBEO plug in that converts Ambisonics' A-format from the microphone to Ambisonics' B-format.

Plugin is available here: https://en-au.sennheiser.com/microphone-3d-audio-ambeo-vr-mic. The plug-in can be used intuitively. It allows you to use filters, define the position and orientation of the microphone and to adjust the output format.

On the output of the AMBEO A-B format converter you can choose between "Classic FuMa" and "ambiX". The differences are in the Ambisonics channel ordering and levels. Which one to choose is dependent on the workflow and possibly other signals and/or tools in Ambisonics, which all need to be in the same format. For upload to YouTube 360, always choose "ambiX" to be compliant with the spatial audio processing done in the browser.



http://www.sennheiser-sites.com/responsive-manuals/AMBEO_VR_MIC/EN/index.html#page/AMBEO%20VR%20MIC/VR_MIC_04_Software_EN.4.1.html

4

Mixing

Now that we have loaded our 360° video and AMBEO VR audio into our digital workstation, we may want to mix in additional mic recordings, say for example a couple of presenter lapel microphones.

Additional sounds recorded with Lavalier or other spot mics need to be spatialised in Post Production which can be done with tools like the FB360 Spatialiser Plugin available as a free download from here: https://facebook360.fb.com/spatial-workstation/

The Facebook 360 Spatial Workstation is a software suite for designing spatial audio for 360 video and cinematic VR. It includes plugins for popular audio workstations, a time synchronized 360 video player and utilities to help design and publish spatial audio in a variety of formats.

Load the Facebook 360 Spatialiser and then open and load the recorded 360 video (A.)

The equirectangular grid depicts the entire 360 video which is then used to position the audio recordings from the lapel microphones (B.)

Set the DAW automation mode to latch, unlike conventional stereo recordings where panning is left/right, this will position the audio into the 360 sound sphere. The audio recording can then be positioned in line with the presenter.

This needs to be done in real time for all mono sound sources.

A.

B.

5

Delivering

First step is to disable the binaural decoder that was used to monitor the recording in F360 Control, otherwise we won't have the full 360 soundsphere.

Next step is to render our FB360 master track as a poly wav file, reload the master video and encode the rendered audio file. Your 3D audio encoded 360 video masterpiece is now ready to show the world! If you are interested in getting familiar with the production workflow, a sample Reaper session can be downloaded here: https://en-au.sennheiser.com/microphone-3d-audio-ambeo-vr-mic

Did you ever wish there was a quick way to find solutions for WHS questions?

FOUND IT!

Australian Entertainment Safety Resource Guide

WHAT IS IT?

A website set-up with chapters, each addressing a specific area in the entertainment industry.

Each chapter lists all the relevant documents such as legislation, Code of Practice, Australian and International Standards, etc.

It then explains the terminology used and high-lights the important sections of the documents.

It will not tell you how to do your job, it will show you what you need to know about the safety requirements so that you can determine the best way to do the job in your workplace.

WHY A WEBSITE?

The website allows you to have the information with you wherever you are. In the office you look things up on your computer and on-site you can still access the information on your phone or tablet.

It also allows for regular updates so that you always have the most current version of the information at your finger tips.

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REDUCE PROJECTOR NOISE

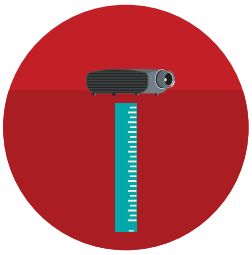
Museums, exhibitions and boardrooms: you all know – and hate - that constant buzz from projectors. But did you know that you can help reduce the noise yourself? Which of these 5 tips can you apply straight away? Projector noise can be just plain distracting. Here's what you can do to keep it low.

1. Choose your projector carefully

The best way to minimize projector noise is to choose your projector carefully. Compare dBA ratings. Remember, a 10-dBA difference means twice the perceived loudness. Also, more lumens = more noise.

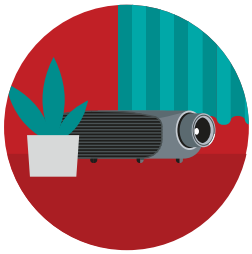
2. Embrace cleanliness

Dirt and dust reduce air flow to your projector and make its cooling system work harder, which means more noise. So keep your projector's fan free of dirt and dust.



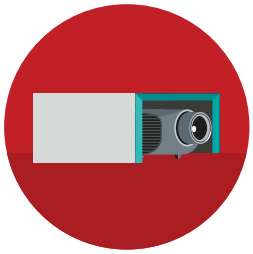
3. Keep your distance

Projectors sound quieter the farther away you get. Double the distance and the noise level drops by 6 dBA.



4. Soften up your venue

Hard surfaces reflect sound more than soft ones. So use carpeting or linoleum flooring instead of concrete or wood, and install acoustic ceiling tiles. Plants work too!



5. Box the projector!

Another solution is to encase the projector in a protective box. Downside: heat and condensation can affect performance. Avoid if possible.

This is just the tip of the noiseberg. If you have any questions, don't hesitate to contact us at Barco or check out the silent F series projectors.

SIMON BYRNE

MAINTENANCE - DO IT ON YOUR OWN TERMS

Equipment in top working order is of course critical to the smooth running of productions. It does not happen by accident. One should choose to actively maintain their equipment to a defined, and convenient schedule, or the gear will define a schedule for you…a really bad one by failing on a job.

Nowadays with modern, precise manufacturing, inherent failures in equipment are low, except of course the cheap knockoffs coming out of China (you are asking for problems). Failures can usually be put down to incorrect use, abuse, but mainly lack of maintenance.

I used to run a decent size AV company and keeping things running was absolutely critical. Here are some of the things we implemented so that we did not have surprises out in the field:

Develop a maintenance plan which sets out a routine which works for your operation. Some things need a lot of attention, other things just need a quick inspection, most things sit somewhere between. A plan ensures that everything gets the attention it needs in a timely fashion and at minimum expense.

Core to the plan is a maintenance schedule and log, even if you are a single person operation. In the log keep a record of the purchase date, serial number, asset number (more on this later), predicted maintenance cycle and maintenance already carried out. You may also choose to record more info such as purchase price, maintenance costs and depreciation. A spreadsheet is useful for this.

The records become invaluable as you can see what is unreliable, what is costing you money and so on. Your own asset label with a unique ID number is critical as it means you can quickly identify each individual item and know its history. Over time, the data builds up in your log, and you'll be able to start to predict when future issues may arise, and deal with them beforehand. Predictive maintenance!

In terms of maintenance cycle, equipment with moving parts need attention probably every three months, other items may only need an inspection once a year, and then there is the FUD maintenance. That is maintenance done as a result of Fear, Uncertainty and Doubt, or FUD!

FUD maintenance is work that you know you probably don't need to do, but because someone told you that you needed to pay them to carry out maintenance on your widget, otherwise they cannot guarantee that it will still keep working, and you don't have a way to establish the facts. Fear, uncertainty and doubt! A common sales technique.

But hang on! You maintain a log of issues with your gear. You now have the data to assess whether or not your maintenance programme is working, and what needs more tweaking.

Now that you have a plan complete with preventative cycles, schedule the maintenance in the downtime. Obvious huh? In my case that usually meant early in the week for the urgent stuff, and the slower months for the big maintenance projects. By scheduling maintenance early in the week, you are giving yourself time before the next weekend should you need to source parts.

Get it fixed quickly - unusable equipment is dead money and could force you to cross hire for the upcoming gigs because you are short. Capital investment in equipment combined with cross hire costs is the worst possible outcome. This is where good relationships with repairers are invaluable. Be a good customer so when you need help, the repairer is inclined to help you out quickly.

Hint: if you find you cannot justify the cost to get something repaired quickly, it might be a sign that it is no longer important to you, so maybe you should get rid of it.

Failure tags - Included in every job folder should be some fluro orange tags. When a piece of gear fails or is damaged, a tag is put on it with the failure hand written on the tag, along with the person's name

who found the fault. Another fluro orange tag is put on its case. That way when the item comes back to the factory, everyone will quickly know that it needs attention.

Appliance Test and Tagging, AS3760. Ugh…

Test and tagging is a critical part of your maintenance programme, mainly because it is law. It would cost me about $5,000 a year to do this and we rarely found items that failed. Why? Because our ongoing maintenance was so thorough that when we found a faulty cable or plug in the field, it would be orange fluro tagged and fixed within a week. Other than complying with the law, in my view, it was a useless and costly procedure.

Unfortunately, the standard is written badly, so no one really knows what is required to properly comply with the law. Until that is tested in court, no one will. And because it is largely a pointless exercise for the production industry, I can't see it getting into court anytime soon.

The standard states that the testing needs to be carried out by a "competent person". What is that? It would seem to mean that to be safe under the standard, most people need to do a course to demonstrate that they are "competent".

Seeing that it is law and you have to do it anyway, you might as well do it efficiently as possible, and take the opportunity to identify other maintenance issues at the same time. In our case, we would do our entire inventory once a year, usually in January. Our Portable Appliance Testers would take about 20 seconds to do a test. That is downtime, so we would use that 20 seconds to give the widget a quick visual inspection and wipe down. If it was fine, it goes back into inventory, if not, it would be orange fluro tagged. It would take two people just over a week to do everything and that was with us being supremely efficient.

Handwritten electrical appliance tags are incredibly time wasteful. Printed tags are a must and because in most cases they need to be replaced every year, we did not worry about unique ID numbers on our tags. We did however take the opportunity to add our name and number so as well as complying with AS3760, they also were a form of owner identification.

Rigging maintenance - Rigging maintenance is critical for safety reasons. This is one area where properly trained people need to be actively ensuring that equipment cannot fall into a state where someone could get killed or injured. And that means the FUD maintenance needs to be carried out because if an accident were to occur due to equipment failure, you might have to prove in court that you complied with the manufacturers maintenance recommendations.

Shop air supply - Having a constant source of low pressure, dry air is really handy to quickly blow out dust and grunge from equipment, especially speakers and moving lights. A workshop air compressor works great as long it has an inline air filter and moisture trap. Label consumables within equipment - for example, HID lamps in projectors are expensive so writing the installation date somewhere on it makes sense. I once proved to a manufacturer that their lamps were not living up to their claims using this method.

Firmware updates - are not a job for Fridays! Schedule your updates for a time where it does not matter if there are problems, because there often are. Never ever, should be done at a gig unless you have a plan to keep things running should the update fail.

Vocal Microphone Hygiene - you don't want your singers picking up germs or viruses from the last performer do you? So we'd clean all our vocal microphone windscreens regularly and always disinfect them at the gig. A light spray of Glen 20 is all that is required and makeup remover will get rid of lipstick marks (makeup remover seems to clean most things. I'd hate to know what it is doing to people's skin!).

The thing about maintenance is you can always spend more on it. You need to find the balance between cost and ensuring things are maintained adequately. By using your logs and schedules, you are able to objectively verify what is working and what needs more attention.

The goal is not to be reactive. You want to be in a place where you can confidently deliver your service without the worry of equipment failure. A well thought through maintenance program will achieve this whilst keeping costs contained.

Brady Fluro Orange Tags
http://www.bradyid.com.au/en-au/846506/prod-brau_846506.html

TECH TIPS

Here is this month's collection of random tech tips to make your life just a bit easier from us, and you, our fine readers!

Redundant Playback

Andy Tait is a NZ audio pro. Julius caught up with him at Auckland ENTECH.

He just did a season of a TV dance show. He said it was harder than he thought. The problem: complete reliability of playback for the music. His solution: two super tough PCs timecode linked, second machine set to 'free wheel' once triggered to 'play' the track, so that if the first machine goes rogue it doesn't direct the clone to follow.

'Great, Andy, love the Kiwi ingenuity' I said. 'But as great as you are, you won't be quick enough to switch playback A to playback B on the console, will you?'

'Ah. I gate the second playback so that when audio from the first stops, the gate opens!'

Genius. Andy observes that the definition of professional audio is that nothing happens - everything works and no-one sees anything untoward. Julius countered that the amount of redundancy planning good audio people do isn't visible to the accountants, either.

Netflix Test Patterns

Cam Purbrick from Haycom recently discovered that Netflix has a selection of really good video test patterns. Who would have thought? Go to search in Netflix and type in "Test Pattern".

Practice Safe Beltpack Usage

Performers can get umm…sweaty. The moisture can get into the beltpacks and even miniature microphones which obviously can cause problems. The go to solution is to put them in a non-lubricated condom which ensures moisture cannot get in. The condom material is so thin that you can still see and operate the beltpack, and if on the microphone capsule, still allow audio though it is compromised. Test it first. Some people also use latex gloves for beltpacks.

This is great if you are forced to use your expensive microphones in the rain.

Accident waiting to happen - 3.5mm to dual XLR cables

A 3.5mm to dual XLR is an accident waiting to happen (to connect to phones or laptops). The phantom +48 volts is applied equally to pins two and three on the XLR, and that translates to the tip and ring on the 3.5mm end (and zero volts on the shield). Therefore you have 48 volts across both left and right outputs of your expensive phones or laptop. Poof!

Yes you can turn off the phantom on those particular channels, or you can always use DIs so you never need to think about it.

Self-inflicted 'Gotchas'

On that theme, don't create a situation where you need to think to stay out of trouble.

For example, I recently heard of a very experienced and competent audio operator who did a full day setup and soundcheck and everything was dandy. Three minutes before doors, he did an EQ change that he did not like so he hit undo on his Midas M32. Uh oh! The desk went back to its previous scene and his entire day's work gone and no, he had not saved his show in a scene. He was in deep trouble.

Clearly he should have saved his scenes throughout the day so he had something to go back to. To be fair, I don't understand why the M32 would "undo" to the previously stored scene; that is what you have scene selections for.

Plan on equipment failure

It is going to happen. Adopt strategies so that the failure is not a show stopper. For example, always have a wired microphone side stage should the lead singer's wireless fail. Have a DI set up for the same reason.

Remove a broken lightbulb with Gaff

Gaff tape is useful to remove the socket that remains when a bulb breaks as it acts as a heat insulator as well as offers some protection from sharp edges. It is also superb at picking up glass shards from the floor. Simply put the sticky side down on the shards and pick them up.

Have you got any tech tips worthy of publication? *Send them to techtips@simonbyrne.com*

GAINING A CAREER IN THE AV INDUSTRY

- Meet Dominic Jones from the P.A. People

I've been at Sydney's The P.A. People for four years, having joined in October 2014 as the junior showroom assistant, with some Event Communications work thrown in. I moved to Event Comms fulltime about 18 months ago.

I didn't have much industry experience prior to The P.A. People, but I completed my Bachelor of Audio Production at SAE. I heard about the initial opportunity to join The P.A. People through a friend at the company.

A highlight has been getting to travel to some amazing places, including Abu Dhabi for the 2015 National Day Celebrations, Phillip Island for the MotoGP in 2017, and then South Korea for the Winter Olympics. I also enjoy the challenge of pulling together a job technically and logistically, talking to clients who are often unsure of what they want, and putting a working comms system forward that can do everything they need and more.

Technology is always changing and The P.A. People continue to implement cutting edge communications solutions. Most recently in South Korea we used HeilixNet LQ to use digital Partyline over IP.

There is a wealth of knowledge here at The P.A. People, with individuals such as our MD Chris Dodds, a pioneer in many areas of audio engineering with 40-plus years' experience. The other members of my team also have significant experience in the industry. Although formal training

Dominic Jones

is essential, on-the-job training and experience is invaluable and can only be gained from working with a team of this calibre. We also attend supplier lead training events periodically.

South Korea was an amazing experience. Despite the intense schedule and some big challenges at times we pulled together a project to be proud of. Personally, it's been a real eye opener to be part of a project of this scale. Linking sports presentation, results officials, sports officials and broadcast production together across some pretty big distances (catching a chairlift to install a keystation became routine!) would be a big enough job at one venue, so to be doing it across 15 venues simultaneously was a unique experience.

An understanding of networking is key. Try and grab casual work with any AV company and build your experience and skills. Practical skills are invaluable and it's crucial to get real-world gigs under your belt to demonstrate that you can do the job.

Initially it's best to contact companies directly and drop your resume off, letting them know what sort of roles you are interested in. The industry is currently booming and there are plenty of opportunities so it's a good time to enter. There are always jobs for hard working individuals with a passion for AV.

EVOLUTION G4 – THE MAJOR CHANGES TO AN INDUSTRY STAPLE

Writer Bio: Anatole Day is a FOH and monitor engineer entering his 20th year in the game. He graduated Sydney's Australian Institute of Music back in 1998 and went into studio recording. He soon discovered the rich vein of work in the world of live sound engineering, and never looked back. Amongst other big name acts, Anatole is well-known for his decade of work mixing FOH for Guy Sebastian.

Announced at ISE back in February, Sennheiser's evolution G4 marks a major update to a product range that has covered wireless mic applications across the spectrum of audio for the best part of a decade. Here's a guide to what's new in G4:

evolution wireless G3 users will recognise the familiar 100, IEM, 300 and 500 sub-series – but there are some important additions: There are brand-new professional sets for ENG (electronic news gathering) and film work in the 500 series, three new Base Sets in the 300 series, as well as upgraded Vocal Sets and a new Combo Set in the 100 series.

100 Series Combo

100 Series

The 100 series comprises Vocal Sets that include the capsules of the evolution e 835, e 845, e 865, e 935, and e 945 microphones. Also available are an Instrument Set, a Headmic Set and two Lavalier Sets with either the ME 2-II (omni) or ME 4 (cardioid). All transmitters and the receiver are also available separately.

The 100 series has new multi-channel capabilities: up to 12 wireless systems can now be daisy-chained for simultaneous programming via an enhanced Easy Set-up function. The daisy-chain cable comes included, as do rack-mount ears for professional use. The orange LCD display of G3 has been replaced with a high-contrast black and white LCD display. Also new are a sync LED and an Escape button for more convenient and quicker operation.

The 100 series handheld features a new lightweight aluminum housing, and a programmable mute switch for singers or speakers seeking full control of their audio signal. Also new is a 100 series Combo Set that includes a rack-mount receiver, a handheld transmitter with e 835 capsule, and a bodypack transmitter with ME 2-II clip-on.

500 Series

The ew G4 500 series is ideal for bands, theatres and houses of worship that require an expanded feature set, greater range, more spectrum flexibility and the additional control options offered by the Wireless Systems Manager software. Available systems include Vocal Sets with e 935, e 945 and e 965 capsules, an Instrument Set, a Lavalier Set with professional MKE 2 clip-on, as well as individual receiver and transmitter units.

500 series users are now greeted with a brand-new, contrast-rich black and white OLED display with automatic dimming, a convenient jog wheel, blue Sync LED, red warning LED and an Escape button that makes navigation much easier. The switching bandwidth of the series has been expanded considerably to rival Sennheiser's professional 2000 series, with bandwidths of up to 72 MHz and up to 32 channels. The RF output power has been increased to 50 mW, switchable in three steps (10, 30, 50 mW) to expand transmission range or adjust to difficult RF environments, and all bodypacks feature increased protection from humidity and moisture.

500 Series Combo

The IEM series receives similar enhancements to user-friendliness as the 500 series: a contrast-rich black and white OLED display, a convenient jog wheel, automatic dimming, blue Sync LED, red warning LED and an Escape button for quick and easy navigation. The RF output power has been increased to 50 mW, and the bodypacks come with protection from humidity and moisture – ideal for stage work. Individual units are available, as are a single and a Twin IEM Set.

Plenty of new features in the IEM series: sleek, new design with convenient user interface, more power, and increased protection from humidity for the bodypacks.

100-p Series Plug-on Set

100-p Series

The evolution wireless 100-p sets have become go-to solutions for any filming, broadcasting, or reporting need. The 100-p G4 series includes the ew 135-p G4 Portable Handheld Mic Set, two Portable Lavalier Mic Sets, the 112-p G4 (omni) and the ew 122-p G4 (cardioid), as well as the ENG Combo Set, which packages the camera receiver with a plug-on transmitter and a bodypack transmitter with omni ME 2-II clip-on.

500-p Series

Complementing the G4 100-p sets are brand-new 500-p series PRO Sets for ENG work and general

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500 Series Plug-on Set

filming needs. Systems include the ew 512-p G4 Pro Portable Lavalier Mic Set (with camera receiver, bodypack transmitter, professional MKE 2 lavalier mic and various accessories), the ew 500 BOOM G4 Pro Portable Boom Set (with camera receiver, plug-on transmitter with phantom power and accessories) and finally the Pro Film Combo Set, which includes both transmitter types (bodypack and plug-on), the camera receiver and accessories.

Compared to the 100-p series, the 500-p systems operate with a higher switching bandwidth of up to 72 MHz (compared to 42 MHz) and thus a higher channel count. Additionally, the systems feature a selectable output power of up to 50 mW and are less sensitive to moisture. All 100-p and 500-p series components are also available separately.

300 Series Headmic

300 Series

Targeting users in corporate, hospitality and education settings, the 300 series comprises a Vocal Set with an e 865 microphone head, a Lavalier Set with the ME 2-II clip-on, and a new Headmic Set which includes the SL HEADMIC 1.

Also new in the series are the Base Sets, which provide a cost-efficient way to update or expand existing evolution wireless systems. All Base Sets include a receiver and transmitter but come without the microphone or the microphone head, ready for use with existing accessories. There are Base Sets that include a handheld or a bodypack, or a Combo Set with both options. Handhelds, the bodypack and the receiver can also be ordered separately.

The 300 series features an increased switching bandwidth of up to 72 MHz or up to 32 channels, allowing for large set-ups in multiple rooms. The series features the same new user interface and increased output power of 50 mW as the 500 series. The bodypacks' protection against humidity has been improved too. An integrated network port allows for remote control and monitoring via the Wireless Systems Manager or the convenient Sennheiser Control Cockpit software. Meanwhile, the receivers are ready for integration into the LSP 500 PRO wireless loudspeaker system.

Review

Sennheiser's evolution G3 has been around a long time, and it's been my go-to wireless kit up until now, particularly for IEMs. I've always found G3 solid, reliable, and standard in a lot of production houses, as well as a staple in the minds of most artists. That's why it's been at the top of my rider.

First Impressions

I was given twelve channels of 500 Series mics and receivers and three sets of 500 Series IEMs ahead of mixing Sennheiser's G4 launch events in Sydney, Melbourne, and Auckland in May 2018. It gave me time to familiarise myself with their capabilities and new features before using them for a variety of musical performances and speech presentations at the events themselves.

I assigned four handhelds and five beltpack transmitters, with three handhelds and beltpacks dedicated to the musical performers, leaving one handheld and two transmitters for presenters. I chose the 945 capsules for the handhelds, a couple of jack to mini-jack adapters for direct input of instruments, and two MKE 2 headsets for speech. Most of the presentations were in quite small rooms, placing the presenters quite close to the PA, meaning a headset was a much better choice than a lapel for best gain before feedback.

My first impression of the G4 receivers is that they look slightly different, as the next step along in a natural progression. The black and white LCD display is nice, and much more performance-friendly than G3. The black and white makes it a bit less visually intrusive than the G3's orange and red, especially when they're sitting in a rack side of stage. There's a setting in G4 that lets you choose if you want the display to reverse polarity or to flash the Sync light if there's any problems.

Set-up

The new 100s have a data cascade port that can daisy chain up to 12 units for easy set-up, but the 300s and 500s connect via Ethernet ports to a switch. We connected our system to a simple Netgear switch, and instead of running Sennheiser's Wireless Systems Manager software, I simply ran the on-board scanner, came up with the cleanest group, and assigned my channels from there. The scan is run from the first unit in the system, but you don't have to do your assignments in order. The scanner displays RF level as it runs, so you can make your own judgement call to avoid noisy channels. It was extremely quick and easy.

Sync

After the scan, pairing the transmitters is the easiest and quickest way to copy settings across. I think syncing is definitely quicker on the G4 than the G3. In the sync setting, there are a lot of different options you can set – power lock, frequency lock, and input sensitivity to name the most important. Every setting or change you make on the receiver pushes to the mic when you sync. These settings cover all the problems you can encounter, like beltpacks that aren't power locked. You can adjust behaviours to give performers a mute switch on their beltpacks for guitarists changing guitars, or corporate presenters that want a temporary mute as a 'cough switch', or you can disable all of these functions. If you change something on the mic (gain, for example) after about 30 seconds it pushes to the receiver. Anyone sitting in radio-land can see the change come up on the receiver.

IEMs

Both G3 and G4 evolution IEMs have a great function called 'engineer mode', so the monitor engineer can dial in and switch between performer's settings on their own pack. G3 enabled 12 different pack profiles to be saved and accessed by the engineer, and G4 enables 16. G4 has now added a great feature in pack-to-pack walk-up. A monitor engineer can walk on stage during sound check and sync their pack directly with the performer's. It picks up everything – the frequency, the mix, EQ, gain, and limiter settings. You can make adjustments, sync again, and move on to the next one. The pack stores all the profiles and you can then scroll through them as needed, so you hear exactly what the performer is hearing.

Sound Quality

I found the actual sonic quality of the G4 range to be first class, as you would expect from a Sennheiser product. There is virtually no handling noise from the mics themselves and they handle plosives very well. There are no compansion issues within the hardware, so it all comes together exactly how you would expect. The IEMs are second to none with regards to how they sound and the imaging that they create within the musician's head. You can get really great separation between different sound sources by placing them in different areas from left to right.

Conclusion

evolution G4 is a definite improvement over G3. It has a wider tuning range in the 300 and 500 series, better and faster sync, clearer displays, the RF is stronger, and it is easier to set up. The changes are not revolutionary, and Sennheiser is not reinventing the wheel, but G4 provides everything you would expect from a refresh of an industry standard product. I know G4 will be snapped up by production houses and touring acts quickly, as it is the next logical step in wireless.

IEM Monitoring Twin Set

Brand: Sennheiser

Model: evolution wireless G4

Product Info: sennheiser.com

Australia: en-au.sennheiser.com

New Zealand: en-nz.sennheiser.com

CHAMSYS MAGICQ MQ500 STADIUM

Writer Bio: Adam Volz is the Creative Director of TLD Creative; event concept, lighting design, programming, and operation specialists based between Brisbane and The Gold Coast. Operating largely on high-end corporate events, TLD work on unique events around Australia. Adam's background in the industry includes global experience with the Walt Disney Company, Broadway theatre, and festival work including Splendour in the Grass.

I grew up operating on Hog consoles, through all their early generations. When MA Lighting released the MA2, I moved onto operating on that. But what I always wanted was a console that operated more like a Hog, but with MA's power and features, as I find some things in MA are over complicated. So when I first got in front of a ChamSys MQ80, I found that everything made sense, though I wasn't fond of the layout. When I finally got on the MagicQ MQ500 Stadium, I thought the layout was fantastic.

The MagicQ MQ500 Stadium is quite powerful; the base unit ships with 64 universes, with licenses available to take it all the way to 200 at the top of the line. Its price-point and functionality make it a very affordable console.

Ergonomics

Physically, it's a nice console to use. It doesn't have motorised faders, but that's just another part to break down, in my opinion. There are 15 playbacks, and an added playback wing can double that. There are 31 executable buttons which can be set up to do multiple tasks, and you can, for example, make them attributes instead of playbacks.

Using the effects engine is a pleasure; between the toggle wheels down the side of the screen and the encoders at the bottom, you can get to everything quickly, especially when you're creating effects. Effects can be opened and manipulated really quickly; you don't have to tap through multiple pages, as you often have to do on other consoles that have limited encoders. Everything is just there.

Operation

The highlight of the console for me is the shortcuts. There's 30-odd pages of shortcuts, proving that ChamSys have put a lot of thought into the back-end of the console. The button layout can be manipulated to select IDs on a keypad, or select options from the palette, and there's multiple ways to set up the keypad in 'User Preferences'. One person can save their show, and another operator can come in next and load their custom button layout. You don't need a lot of buttons, and you can do everything from basic lamp on/off to pinging a media server.

The dual 15" touch screens run in 1080p, so the detail is fantastic. Sometimes there's too much info on the screen for me, but you can change the size of the icons to adjust for that. One of my colleagues made the icons so large that the display just had four buttons - it's that customisable! The screens are reactive and fast, and the whole console is quick to boot up, and to save a show. I feel the processing is faster compared to other consoles.

Patching, Tracking, Timing

The MQ system gives you multiple ways to patch and track. In basic mode, when you hit clear, nothing happens. There are multiple theatre modes and live mode, so you can do tracking. You can hold tracking between cues, or set the default that every time you create a cue, you have to start from scratch. On a lot of consoles you have to go into preferences and change these settings manually, but at the start of programming, you can load the MQ500 in theatre mode and run, and can change it later during the show. You can also reload and save your show in another tracking mode. I think these features will put pressure on other manufacturers to change the way they approach their software.

I really like the way MQ software can set a time between palettes. You just select a time for it to change between colours, and it shifts over that time period. You can also set timings on blind and clear, whereas on other consoles you have to set a global timing on your palettes or playback.

Art-Net

The very first show I took out our MQ500 to run was 100 moving lights connected via the venue's Art-Net. We plugged in, changed our Art-Net settings, and the whole rig was there with no problems. It's proven adaptable to all of the gigs we do, and anyone can jump on it and make it work. I like the fact you're not tied in to a proprietary Art-Net node that you can't get out of until you spend a lot of money. With MQ, you can integrate any brand of Art-Net node and do 200 universes without spending tens of thousands of dollars for more outputs.

Improvements

I'd like to see ChamSys add a trackball to the MQ500, and make it a bit lighter so we can put it on a plane – that'd be good for touring, and it's currently only 2kg over!

Conclusion

I want to buy another one! This is a larger format console with four network ports, quite a lot of power, and can ship with 200 universes. I think it will change how other manufacturers approach outputs.

Brand: ChamSys
Model: MagicQ MQ500 Stadium
Product Info: secure.chamsys.co.uk
Australia: www.ulagroup.com
New Zealand: www.ulagroup.com

ChamSys MagicQ MQ500 Stadium – The Specs

Dual Inbuilt 15" displays

Full HD 1920x1080 resolution

Adjustable display viewing angle

Multi touch with gesture support

200 universes direct from the console (licensed above 64)

Inbuilt MagicVis Visualiser with full rendering of beams and gobos

Inbuilt MagicHD Media Player for pixel mapping onto 200 universes

Playback section with 30 Playbacks (15 full fader, 15 flash)

12 multi purpose Macro/Executes/Playbacks

RGB function indication for every Playback

Programming section with Intensity Wheel and 100mm crossfaders for Theatre

Dedicated Grand Master fader and DBO button

Dedicated Goto, Time, Head, Flip, Pair Buttons

SOUNDCRAFT UI24R 24-CHANNEL DIGITAL MIXER

Writer Bio: Gary Parks has worked in mangement positions with Clear-com Intercom Systems, Electro-Voice, Meyer Sound, and EDX Wireless. Gary is a freelance writer and can be reached at garycparks1@gmail.com.

This tablet-based mixer is designed for relatively simple applications with modest I/O counts and no audio-over-IP. It's an interesting approach to mixing that doesn't require an app. The tablet connects directly to the digital interface via WiFi.

The Soundcraft Ui24R is a slick, rack-mounted, remote-controlled mixer with a full feature set. It includes 22 analogue inputs and 10 outputs; 32x32 I/O via USB for multi-track recording; built-in Lexicon effects; DigiTech guitar amplifier simulation; dbx feedback suppression and numerous other useful features, such as automixing for managing multiple speech mics.There are no expansion capabilities on this product, which is reasonable considering its price point. There is also no support for audio-over-IP (such as Dante), but that's also reasonable, in my opinion. This is designed for relatively simple applications where the user does not want to sacrifice on sound quality or feature set, but where large I/O counts and future expansions are not likely warranted.

Before we dive in to the processing capabilities and sound quality, I want to discuss the user interface. This product has no front-panel controls or display; it is entirely controlled by phone, tablet, or computer. It doesn't require an app, because you operate using your web browser. I was sceptical about this before I got started, but it simply works. The system supports up to 10 simultaneous users, allowing each musician to manage their own in-ear mix if desired.

Starting point

You begin by joining its built-in Wifi access point. After you're connected, you simply point your tablet's web browser (or that of your phone or computer) to 'ui-mixer.io'. If your device is in landscape mode, you'll get a reasonably straightforward mixer view. However, if you're in portrait mode, you'll see the "More Me" view. This is a great, simple interface for musicians to easily manage their own in-ear mixes, and I'll talk more about it later.

Most of the navigation is straightforward and behaves as you might expect. You scroll the display sideways to get to all of your channels, and a large "Ui" button on the top right pops open a sidebar to give mute group buttons, view filters, and tap tempo. Buttons along the top of the display allow you to switch the screen to the pre-amp adjustment view, channel detail view (with EQ and dynamics), and aux-to-faders, among others. The meter view button on the top left does much more than just show you meters. From that page, you gain access to additional buttons to make VCA and mute group assignments, and you can also jump from there to the "More Me" view.

And while a lot of the navigation was straightforward enough, there are a few things that required me to consult the manual to figure out. For example, in order to rename a channel, you must perform a "long press" on the channel name until a menu pops up. From that menu, you can rename the channel, enable or disable stereo linking, change group membership, and recall channel presets. Double-clicking on the channel strip takes you to the meter page, although I would have expected that action to navigate to the channel detail (EQ, dynamics, etc.) screen. You double-tap on the channel name to get to the detail view, however.

Another frustrating design element is the patching system, although I understand that in version 2 of the firmware they have revamped this into something much more usable. In the version I evaluated, patching is handled in a few different places, and each of those locations had different capabilities. It took me a while to figure out where everything was.

Channel processing is fairly robust on this mixer. As expected, there is a four-band fully-parametric EQ on each channel, as well as variable high-pass and low-pass filters. However, there is no shelving option (at least none that I could find) in the standard EQ. If you want shelving, you switch to "Easy EQ" mode. In that configuration, you get a very simplified EQ with just low shelf, one standard midrange band, and a high shelf. Experienced users will want to stick with the standard EQ, but the lack of shelving filters could be an issue in some cases.

The EQ section also includes a de-esser on every channel. This is incredibly useful, and I wish this was more common. I use de-essers a lot, and it's nice to not need to use a plug-in or insert path to achieve it. Finally, the EQ section has an RTA view you can

enable if desired.

Output busses have graphic EQ instead of parametric, and also include dbx feedback suppression (although I am generally not a fan of using feedback processors). Output busses also have compressors, and these can be sidechained (as of version 2 software) for use in ducking applications.

Recording & playback

The Ui24R has several recording and playback options built-in, all accessible via three front-panel USB jacks (each with a specific purpose). The first USB jack is intended for two-track (stereo) playback content, such as walk-in music or "stems" playback (pre-recorded music on one channel and a click track on the other, so that the band can play along in sync with additional instrumentation). The second USB connection can do a simple two-track recording of your main mix bus, but it also supports multi-track recording and playback via a USB stick. The manual claims that you can record all 22 inputs simultaneously this way, but I kept getting recording errors on my media. It's certainly possible that my USB sticks are too slow to keep up with this, and that better ones would handle the task without effort, but I'm not sure I'd trust this method anyway.

The way I recommend doing a multi-track recording with this mixer is via its third front-panel USB port. This one is designed to connect to a computer so that the mixer acts as an audio interface. I had a mostly great experience with this, as it simply works without any effort. I connected the mixer to my Mac, fired up DAW software, and chose the mixer as my audio interface. That's all there is to it. The mixer provides 32 inputs and outputs through this USB connection (the first 10 of the sends to the computer are the main mix and aux mixes 1-8; the remaining 22 are the mixer's actual inputs).

The Ui24R makes it incredibly easy to replay your multi-track recordings (whether made via computer or USB stick) back through the mixer as a way of simulating soundcheck. You simply press one button and the multi-track recording feeds the individual mixer channels as though they had live inputs. One caveat, though: be sure to disengage the track record enables in your DAW before doing this, otherwise you will create a feedback loop. Don't ask me how I know.

Perhaps the most well-implemented feature on this console is the "More Me" function. This feature, accessed by turning your mobile device into portrait mode, displays only three controls: a large fader that controls the grouped level of individual artist's own sources; another fader for all other inputs; and a third, in between the first two, that alters the balance between them with a single motion. It's intuitive, and it makes it incredibly simple for an artist to handle most of the changes they are likely to want from their own phone. To set it up, you simply have to tell each mobile device what to consider its "own" channels (as well as its "own" aux mix bus, on which to make the required mix adjustments). Of course, some audio engineer intervention will be required, particularly in getting an initial mix dialed in for each user. After that, though, I imagine a lot of routine in-ear mixing requests would disappear.

Final thoughts

No audio product review would be complete without talking about sound quality. The Ui24R sounds good and has reasonable noise specifications. The built-in Lexicon reverbs sound very good, although they don't include any plate reverb options. However, these are still very nice and usable effects. You get a total of four processors, two of which are dedicated to reverb; one is dedicated to delay; and the fourth is a "room" reverb, suitable for more ambient effects.

The mic preamps sound good, and they should—they're designed by Studer. I should note, however, that preamp gain changes create low-level audible clicks, so I don't recommend tweaking those live if avoidable. Overall, the audio quality throughout this mixer is very high.

Minor shortcomings and user interface concerns aside, this is an impressive product, especially for the price. I particularly like the fact that it comes with a built-in Wifi access point and doesn't require an app download to control it. I like the way it sounds, I like the Lexicon effects and, for the most part, the user interface and feature set are strong. I'd happily mix on it.

Brand: Soundcraft
Model: Ui24R
Product Info: www.soundcraft.com
Australia: www.cmi.com.au
New Zealand: www.jpro.co.nz

ADVERTISER INDEX

CX 140 | September 2018

"I GOT THE ROCKIN' PNEUMONIA AND THE BOOGIE WOOGIE FLU"

- Huey Smith and the Clowns, 1957

Apologies to everyone who was eagerly awaiting the latest episode of the popular ongoing soap opera 'Dunk faces Life' in the last issue (Who they? Ed) Our story continues...

It all started when I answered the phone a couple of weeks ago. As bad luck would have it, LL, the drummer from the Harris Tweed band was on the other end, calling from his ivory tower on the Mornington Peninsula.

"Dunk, mate, get your formal t-shirt washed and ironed - we've got another gig at the yacht club!"

"Didn't we do their presentation night a few months ago? I asked.

"No, that was last year you fool! It's time for this year's one now. They asked the members which band they wanted, and they all said us. They love us there."

Hmm, I thought, we're obviously not charging them enough!

"I don't know if I'll be able to do it," I said."I've had this really bad chesty cough for the last couple of weeks, and I'm still feeling pretty crook."

"It's not going to be a hard night," he replied. "It'll be the usual format - three hours of speeches where they all give each other awards and stand around telling each other how great they are, followed by an hour of band music."

I started to waver as he continued "And don't forget the best part - a delicious well catered meal, free drinks, and we'll be getting paid for it! You'll be fine."

"OK I'll give it a go," I agreed. He was right, of course. It wouldn't be hard work. It was the sort of gig where it's not so much about knowing what to play as knowing what not to play! And when to not play it. In fact we were very good at not playing anything at all if we thought we could get away with it!

Although not 100% on the night of the gig, I was feeling a bit better - until I started to play! It sounded terrible. My fingers just wouldn't go where I told them too. Every time I banged out a nice big chord it would sound as though it was a fret above or below where I intended it to be. The frets and strings just seemed to dance in front of me. I looked across at GT, the singer and fellow guitarist.

'You're out of tune', he mouthed. We were both supposed to be playing the same song in the same key, and I thought I was, but it didn't sound like it! According to my Boss tuner pedal my guitar was exactly in tune though. It was my fingers and head that were out of tune.

"Thanks folks - we'll be right back after a short break," announced RH Positive, the bass player, so I popped on some background music and sat down at the band table.

"Jeez what are you doing?" said LL "You're playing worse than you normally do!"

At the start of the second bracket, as I stood up from the band table I started feeling very light headed and nearly passed out. I had to hang on to the edge of the table to keep from sliding face down into the carpet. And my mouth was so dry. It felt as though I had eaten a tray of kitty litter.

By hanging on to the backs of chairs I managed to lurch towards the bar without knocking anyone over. I waved to the barman.

"A glath of water" I croaked, feeling like a character crawling across the desert in a cartoon.

"In a pint glass?" the barman asked.

"Yeth pleathe"

I drained the pint in one mouthful.

"Another pleathe"

I drained this one and then made my way carefully to the stage, where I tripped and fell as I tried to get

on, managing to safely cradle the old Flying V as I did so. Miraculously it was unharmed. GT the singer looked at me worriedly.

"Are you OK?" he asked, "you look terrible."

"Yes I know," I agreed "I feel terrible too."

"Perhaps you'd better go and sit this last bracket out," he suggested. "It'll only be a few songs then we can all pack up and go home."

I happily agreed then sat back at the band table and closed my eyes. When the last song eventually ground to a halt I started to help pack up then collapsed onto a chair, staring into space.

"Go home" said LL, seeing my condition. "We'll come back in the morning and grab all the PA. Go and get some sleep."

I unhitched the trailer, and carefully drove the few kilometres home. As I fell into bed my gf said "You don't look good; what's wrong?"

"Sleepy" I mumbled, and passed out.

Some time later she shook me awake. "You don't sound well at all - I'm calling an ambulance!"

Within five minutes or less I had been strapped onto a gurney, slid into the back of an ambulance and was on my way to the local hospital's emergency department.

The rest of the night was a bit of a blur as I kept sliding in and out of consciousness, but I eventually woke up with a drip in my arm in one of the emergency department's short-stay beds. The controlled chaos of Saturday night in a hospital was in full swing, with people rushing everywhere, alarms going off, and more.

"What's wrong with me?" I asked the nurse taking my blood pressure.

"We're just waiting for Pathology to come back with your blood test results, but we're pretty sure it's pneumonia. I'll go and get the doctor."

Pneumonia? What? People die from that! My heart literally missed a beat and caused the expensive machine that goes 'Ping' to go crazy. I'd had pneumonia when I was a kid, and the bad memories were still vivid...

My parents had sent me off to boarding school – a small windswept penal colony on the north coast of Wales – for a couple of terms while they lived the hippy life on the island of Ibiza. This was when it was just a sleepy little fishing village, before it became party island central for the bogan youth of Europe.

At the boarding school one night I started wheezing uncontrollably, and my lungs felt like they were on fire. They sent for the doctor, who gave me a shot of something to knock me out, and I woke up in hospital in an oxygen tent. It took a painful couple of weeks on a drip of Streptomycin, an early antibiotic, before I started to feel remotely better... but I digress.

The doctor came back with the nurse and she said, "Mr Fry, it's definitely pneumonia, and the best treatment is a week of tests, the right drugs, rest and close observation. Do you have private health insurance?"

"Yes, I do," I said, "full hospital and ambulance cover!" Luckily I had taken it out years ago in case I had a crash in the truck in the middle of nowhere and needed to be flown to a major hospital.

"Well," she replied, "let's get you taken to the private hospital up the road. It'll be a lot quieter and you'll get the attention and rest you need. You'd get it here, too, but not in the same time-frame."

It took me a week to recover in the private hospital, but luckily every cloud has a silver lining – I managed to pass the time watching full daytime coverage of the mountain stages of the Tour de France! Almost like being there.

Within no time at all it seemed I was back at the salt mines of ARX on light duties, taking names and kickin' arses.

So the message to take from this is: Don't wait to call an ambulance; listen to your gf or significant other (but don't let them meet); get private health cover; stay alive!

And that's why there was no story last issue.

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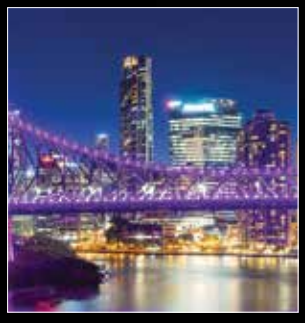

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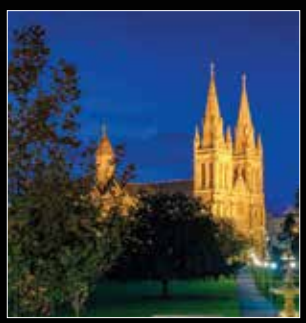

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