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EXPO PROMOTION

AV in Amsterdam

ISE 2019 review by Anil Chopra



BART KRESSA Creator of Universal Spectacle above, with **ANIL CHOPRA**, Director AV-ISE

A Critical Analysis on the Impact of Noise in Outdoor Hospitality Services on the Environment



MATHEW GEORGE
Principal Consultant,
MMG Acousticals

ABHIMANYU GUPTA
Director, Actis Technologies



Birds-Eye view on
The Upcoming AV Trends of 2019



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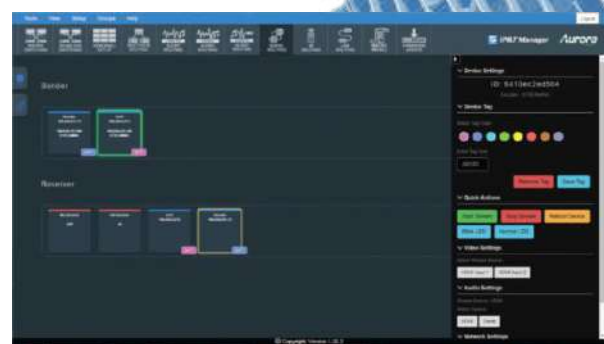
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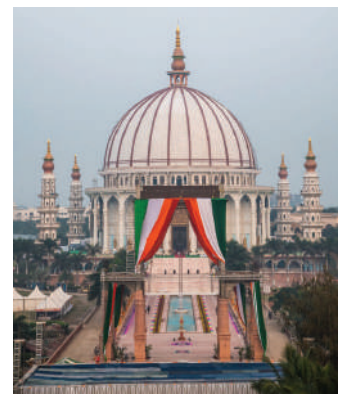
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Incorporating

BROADCAST VIDEO PRODUCER

AV - INTEGRATED SYSTEMS

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AV EDUCATION AND TRAINING

Education being the one mantra pervasive across AV sectors, AV-ISE Training & Education programme will offer a range of training programmes to improve and develop the AV technician's technical competencies and professional expertise, while also disseminating information on quality standards and best practice.

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AV IN AMSTERDAM

*Convergence of AV Display & Projection, ICT, Broadcast, Telecom, IoT, VR, AI, AR, Gaming, Pro Audio, Install Sound & Lighting.
Source and beginning of Digital Flow Projection Sculpture Art.
World's largest AV show with 90 thousand visitors and 1298 exhibitors*



Anil Chopra - Director, AV-ISE

Good show!! - an English understatement. Would really mean "damn good show", WOW! Converging essentially the best companies in audio, video and networking including all cascading tools, technologies, techniques, trends, the 80,000+ visitors included AV consultants seeking the right product for a nightclub, networked interactive corporate conferencing to the fantastical control rooms for Elon Musk and Jeff Bezos, be it their hideout, corporate headquarters, rocket launch stations, logistical nerve centre for Tesla or Amazon.

What is evident is that AV is a confluence necessitated by virtue of all communication on IP, with faster and faster, and stable speeds. IT, telecom and broadcast have converged onto IP. Broadband and connectivity established over the last two decades has positioned AV tech for its golden moment. Hence, no surprise ISE is expanding and attracting pro audio, video, OTT broadcast, and 15 halls insufficient to accommodate the plethora of companies

joining US and Europe from Japan, Korea, China, and even India, as well from many other countries. Total 36 countries divided 1298 exhibitors. USA, China, hogged the show, then Germany and UK, the rest of Europe. India was almost zero but for three exhibitors [see adjoining pie chart].

All credit to the chief **Mike Blackman**, who created a wonderful equalitarian expo respecting all countries and companies. Respecting technology and placing competition where it belongs. Fair and Square. As a result the show is productive and purposeful. Mike Blackman, the man who has engineered this success of course has achieved this [as all great show organizers do] standing on his feet as a missionary, motivated. Hall planning at ISE is super, I felt more efficient in the pro audio halls than in larger dedicated pro audio shows. Ditto for broadcast display and ditto for educational. Alright 'nuff praise!! His style is disarming and efficacious and

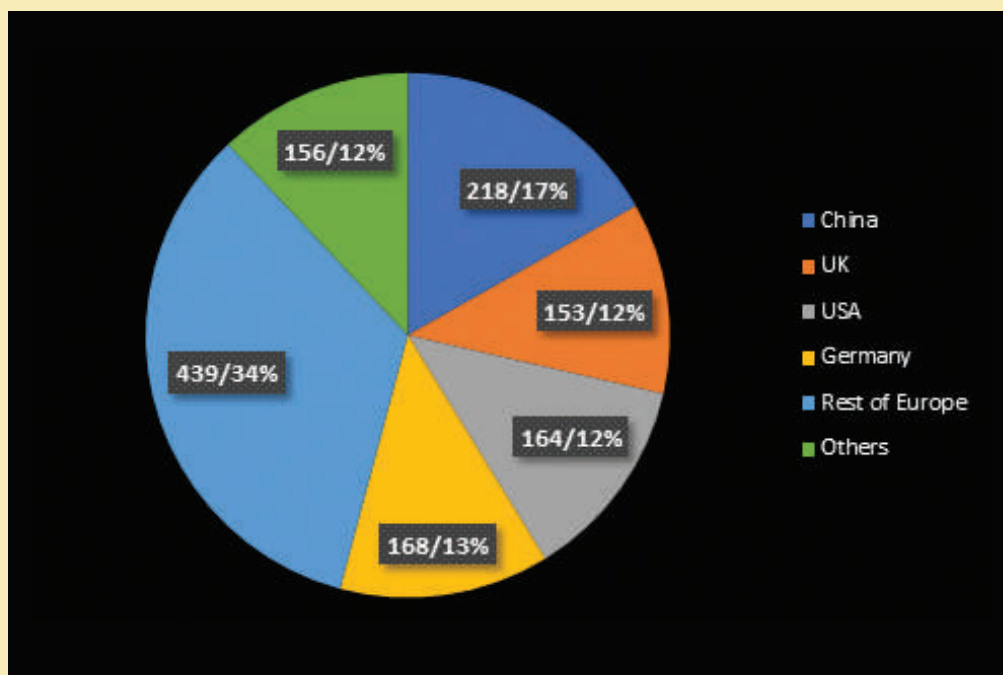
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when his team of 'Charlie's Angels' move in to invite any brand to participate, it's must be difficult to decline!!

Getting in easy is the key to a good show. Unlike US shows, where the eye is on the \$, I felt welcome at ISE. Kudos. Arrangements for last minute passes are made and I didn't try to enter the expensive conferences and summits and other elitist gatherings, so am not quite sure how that worked. Topics like Cinema, Signage, Educations, Hospitality, Enterprise [integration], Stadia, Attractions [Zoo, Museum Theme Park, Water Park, Heritage site and Cultural Site] Smart Building were notably areas where max exhibitors were getting business.

Bart Kressa's Sculpture outside the venue was spectacular. PALM Expo awarded Bart for Mapping in 2013. PALM Expo has featured his mapping work at the show. Universal Spectacle Night Parade, [See pic on page 06] hit me straight as I saw it, truly universal in imagery and I saw in a flow Africa, Asia, the Sky and earth, Nordic feelings, and water, I was indeed mesmerized as I realized Bart's Projection mapping was less about technology and all about Art, streaming flawlessly from the Panasonic projectors, from four corners, bathed the Sculpture. Even before digital art has really caught on this Art Flow idiom seems to be the next big thing. An Artist can flow with his artistic images in continuity creating an experience. Bart predicts permanent installations and I cannot but agree, finally Art in movement. This is the future. The ISE daily sharp reporter caught me in my trance and promptly reported my feelings in the Daily [See pic on page 06] [<https://www.iseurope.org/guides-media/daily/>] (Day 3 – 7th Feb, Thursday)]

STRONG COUNTRIES IN AV TECHNOLOGY



Future sourcing for communications technology – Japan, Korea, and now China are key suppliers. This pie chart divides exhibitors country wise. China tops the chart with 218 companies. Remarkably UK still has juice with 153 companies. Not surprising though as UK has a legacy in AV product. Chinese companies' strength is mostly in LED display. Germany strength is in audio and networking and integration tools. USA possesses some of the marquee brands across the entire chain, audio, video, IP, IT, networking, communications, software, accessories, and the works. India is creating original property in telepresence, networking solutions, streaming, home automation, accessories hardware. These are critical value added products imperative in AV integration. AV-ISE will bring you stories on Indian AV tech origination. Stay glued.

Panasonic also collaborated with ISE to 3D map a 25 floor Hotel, using 14 PT-RZ31 K 40,000LLumens projectors.

Walk the talk

Frontier of computation and algorithms and big data, processing and streaming and robotics engineering leads to state-of-the-art AV interface + AI = innovation in AV and new products in every application. All the summits and conferences, exhibitor training and demos and workshops for professional development poured the latest to enthusiastic attendees. AV-IT – Design-Emerging Trends- User Experience were the tracks for Professional Development.

Avixa predicts another future where buildings will need to update their digital assets [AV] every few months. Thus Smart Buildings need to build around AV assets, rather than contra. AV delivery is the guiding force. Smart Building Conference at ISE explored creating the latest generation of smart buildings that will guide security and make Smart buildings

experiential.

Education AV is valued at \$ 13.8 billion. AV Industry in 2023 will reach \$ 229 Billion, up from \$ 179 billion in 2017. Avixa's What Next Higher Education conference revealed education to be one of the most dynamic verticals implementing AV tech.

VR + Leading edge audio and display are also incorporated. Thus we are at XR Summit-a dedicated conference at ISE. Wow! I likes!!

I am excited about AV growth in India. Miles to go... so many opportunities to engage frontier technology. 1298 exhibitors at ISE represent frontier and leading edge technology converging, electronics, computing, DSP, IP, streaming,

lasers, audio, video, acoustics, new materials, automation, to create new products that define the digital era-Impacting education, corporate communications, retail, and hospitality, entertainment like we expect from the new millennium. ISE boasted of a, Digital Signage Summit, Hospitality Tech Summit, and Digital Cinema Summit. India boasts of a high degree of engagement in all these technologies given the massive human resources employed by all these companies in engineering and tech development. In systems integration and AV design too Indian companies deliver outstanding projects on account of the large body of trained and knowledgeable engineers employed in the AV sector.

CEDIA ran 35 classes plus The Home Cinema Design Masterclass. CEDIA's 3500 members paint a humungous picture of Home entertainment and Automation. There were many Indian companies in this segment at ISE. Good to see Indian innovation at



Mike Blackman, Managing Director ISE



"This is not just about digital projection. It is about digital art. If I take one nanosecond of every image, and I take a print out, every print is a work of art. It is millions of artistic images. When anyone sees it, they feel a part of it, because it brings Africa out, it brings Asia, it brings modern art, it brings everything out, and that is what's so satisfying. This is the future."

-Anil Chopra's (centre) vision of the projection mapping showcase by Bart Kressa unveiled at ISE Europe 2019

a global trade event. Imagine an award from CEDIA for a Home Cinema product in £340,000[!!!] and above category. Elite Home Cinema is roaring among India's super rich too. Evidently HomeCinematech will rock in years to come.

Categories strength

Digital Signage =36.63% of exhibitors, a total of 478 exhibitors offered digital signage solutions. Commercial was higher. At least 51% of 1298 exhibitors offered audio technology or 669 exhibitors with solutions in audio processing and audio systems and acoustics. Audio covered stage event and music systems. Education was 11.3% with 147 exhibitors though the activity was felt much more in your face, with presentations galore aimed at the aisles in most halls. Home - cinema and automation booths were - 26.7% at 349 exhibitors.

Display

Large scale display was the glorious attraction at ISE, mostly LED, OLED, Micro LED, Laser LED - 208 exhibitors vying for this market - Entertainment and retails and signage applications as well for monitoring and control rooms. Just 76 exhibits for Projection, but confidence levels were high, promising video display where no installed screen can reach. Above all the mapping advantage!! Video projection and display had a total of 295 or 23% of all exhibitors. This includes Interactive displays offered by 270 companies. Presentation Systems was another hot product -270 companies in the fray.

Tech Nuggets

- **Aurora** is a gold sponsor of ISE. Highly successful with their range of

AV over IP solutions and Ethernet switches. Debuts world's first only encrypted 4K60 4:4:4 10Gbps AVoIP transceiver.

- Sound through Haptic perception by vibrating the surrounding area by Powersoft;
- Boundary layer microphones by **AKG**;
- Smallest invisible speaker from **Amina**.
- **Intel** revealed almost all smart displays and ultraslim displays have Intel modules optimized for digital signage, kiosks, professional monitors, point-of-sale, 'magic mirrors', bedside terminals, interactive flat panels and more.
- **Dante** adds video! Dante on Bose PowerShare amplifiers, Standards based 4K AV over IP, based on SMPTE SAT 2110 from Xilinx. TICO-XS combines lightweight compression from intoPIX and low latency synchronized video-over IP from **Macnica**.
- **Bose** launched ArenaMatch, DesignMax, Commercial sound

Bart Kressa's Digital Flow Art



'Universal Spectacle Night parade Sculture projection mapped by four Panasonic projectors. Bart Kressa is now working closely with Panasonic in developing a new Projector employing his advice on design to create a projector that will deliver as yet unavailable features in super-specialty mapping techniques. Bart Kressa Academy of Projection Design in Lublin Poland is started for international students. <https://academy.bartkressa.com>

processors, PowerSpace power amplifiers, ControlSpace EX processors, Business Music System. Retail, Sports, targeted in full strength. Bose Array Tool a new AV system design software. [see report page 44]

- The wall from **Samsung** – 219 inch modular MicroLED removing restrictions of size, resolution or form. Also eliminates need of colour filters or backlight.
- **Panasonic** PT-RQ50K 50,000 lumens projector as compact as it could get.
- **Mitsubishi** 4Diamond Grid LCD displays for Control room reliability key factor.
- **Fuji** two axis rotatable lens projector switchable from horizontal to vertical projection with laser light source, and installation freedom.
- **Sharp** professional K displays for digital signage
- **Canon** enters large venue projection market with new 4K DLP laser projector
- **Viewsonic's** new myViewBoard digital whiteboard ecosystem supporting Google G Suite and Microsoft Office 365 integration capable of working with multiple platforms.
- **Vivitek** delivers industry novelty with new NovoConnect embedded projector allowing users to wirelessly connect to the big screen.
- **Sony** enables users to create video content in real time with company's first intelligent video analytics technology
- Largest interactive display by **Ricoh** at 86in includes shadow sensing for accurate imaging

Standards and alliances in AV industry

Following common standards and specifications, tools and software applications lead to growth and adoption of new techniques and trends, lowering costs, and spreading capability among professionals entering the AV Integrated Systems segment.

KNX Association owner of KNX standard



for IoT, with 443 registered hardware and software vendor members from 44 nations is a platinum sponsor of ISE. ETS is defacto a part of KNX standard. ETS is a single [software] tool to plan design and configure a smart home. [weblink]

HDBaseT Alliance - HDBaseT, promoted and advanced by the HDBaseT



Alliance with 200+ members, is a con-

sumer electronic(CE) and commercial connectivity standard for transmission of uncompressed high-definition video (HD), audio, power, home networking, Ethernet, USB, and some control signals, over a common category cable (Cat5e or above) using the same 8P8C modular connectors used by Ethernet

SDVoE – standardized transportation of AV signals over Ethernet in pro-



fessional AV environments. Interface between endpoints and software. 40 members shipping 158 products.

EISA- Expert Imaging and sound association.

55member magazines and websites. Members from Australia, India, Canada, the Far East, and USA.



- **Atlona's** All-IP Meeting Space solution brings the power of large, enterprise-sized, IP-based systems to individual meeting spaces without complex switching systems.
- The Massive Curve of Nature **LG**

OLED demoing a forest, glacier, waterfall, blizzard and others, made possible by 88 flexible Open Frame OLED displays. Upto 1,000R for wrapping around various surfaces.

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Next Issue

March - April 2019

View Sonic Interview on the Display Market

Product Focus on Interactive Conference Room Technologies

http://avintegratedsystems.in/Latest_News.aspx

AUDINATE ADDS VIDEO TO DANTE WITH THE ALL-NEW DANTE AV MODULE

DANTE AV BRINGS DANTE'S LEGENDARY EASE-OF-USE, UNIFIED CONTROL AND TIGHT SYNCHRONIZATION TO THE DISTRIBUTION OF AUDIO AND VIDEO OVER STANDARD IP NETWORKS

Audinate has announced Dante AV, first-of-its-kind integrated audio and video-over-IP solution for manufacturers. Dante AV enables complete interoperability with more than 1600 Dante-enabled audio products already on the market.

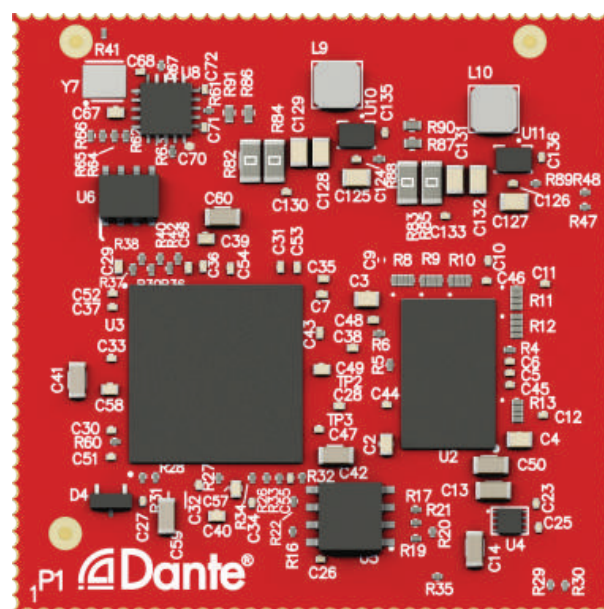
With Dante AV, audio and video signals are independently routable in a single, easy-to-use interface using the Dante Controller software. Manufacturers can also take advantage of Dante API to customize their management user interface and solves time alignment issues and eliminates the need for audio de-embedders in applications such as sports bars, live events and multi-zoned AV systems for perfect lip sync everywhere.

The Dante AV Module supports one video channel and 8 bi-directional channels of uncompressed Dante audio. It is ideal for manufacturers creating 1G video-over-IP products and includes Dante control, transport, and synchronization. The architecture is completely codec-agnostic, so manufacturers can use the codec of their choice and still get the benefits of Dante.

The Dante AV Module is available with the **Dante AV Product Design Suite**, provides a complete AV-over-IP endpoint

product design for manufacturers that wish to quickly get a product to market. The Product Design Suite incorporates the Dante AV Module and includes a comprehensive set of hardware documents and software to create complete, fully interoperable AV products quickly and reliably. The Dante AV Product Design Suite includes a JPEG2000 codec supporting 4K/60 4:4:4 video for visually lossless results with low latency over a 1Gbps network. Dante AV Product Design Suite also implements HDCP (High-bandwidth Digital Content Protection) to prevent copying of digital audio & video content as it travels across connections and can be easily customized to suit an OEM's specific requirements and provide competitive differentiation.

"Customers want us to bring the "V to AV," says **Lee Ellison**, CEO of Audinate. "With Dante AV, we are excited to make that a reality. The Dante AV Module



and the Dante AV Product Design Suite will enable manufacturers to quickly get integrated audio and video products to market, with all of the benefits Dante has to offer. With Dante AV, we're taking everything we've learned from years in networked audio to the video world, and delivering on our vision of a truly integrated, easy to use and interoperable AV experience."

LEADERS IN CINEMA SCREEN TECHNOLOGIES TO MAKE MARK IN PRO AV MARKET

LUMINA - A PROJECTION SCREEN BRAND BY GALALITE, IS SURE TO OFFER IMMERSIVE VIEWING EXPERIENCES.

Galalite is all set to embark on a journey to offer unrivaled home-theater experiences with their brand, Lumina Screens. A home theater is a personal entertainment zone that is best experienced when it is personalized according to your needs. Lumina by Galalite provide a wide range of expertly crafted, future-driven fabrics that are sure to project imaginations.

Lumina by Galalite bring with it a wide range of products to suit the precise needs of its customers. To cater to the diverse needs, they aim to regularly introduce new and improved products that ensure customer satisfaction. With a vision

to offer complete screen solutions which require no after-sales service, they aim to be a well-known player in the AV market, with virtues of excellent guidance, on-time delivery, quality products, and promising experience.

Speaking on the occasion, **Rohit Patil** from Lumina Screens says "A projection screen is more than just a white cloth. It is a sophisticated, technical fabric that offers



Rohit Patil from Lumina

an immersive cinematic experience. No matter how big or small your home theater is you can't deny that all eyes are always going to be on the screen, and I assure you that if a Lumina Screen is installed, you will never want to take your eyes off the screen. Be it at corporate offices, at home, or auditoriums

- the right choice of projection screen makes all the difference."

PANDUIT ACQUIRES LEADING GLOBAL AV SOLUTIONS MANUFACTURER ATLONA

Panduit Corp., one among the global leaders of innovative electrical and network infrastructure solutions, announced today it has acquired global AV manufacturer Atlona. Atlona designs and develops innovative, award-winning products for a diverse range of commercial and residential AV and IT markets worldwide, including education, business, government, entertainment, and healthcare. Atlona's product categories include networked AV, signal distribution, wireless collaboration, and AV system automation. These solutions enable system designers, integrators, consultants, and installers to simplify installation, minimize maintenance, and maximize the versatility of premier automated control solutions.

"Atlona has been at the forefront in developing cutting-edge AV technology that embraces the full potential of the convergence of AV and network infrastructure," explains **Dennis Renaud**, president, and CEO of Panduit. "Their industry-leading solutions complement Panduit's extensive physical infrastructure portfolio, which will allow us to offer customers a quality end-to-end solution as they move to increasingly complex network infrastructure



Atlona becomes a Panduit Company in a joint meeting at the Atlona Headquarters in San Jose, California. Pictured are (Left to Right): Marc Naese, Panduit SVP Network Infrastructure Business; Dennis Renaud, Panduit CEO; Ilya Khayn, Atlona CEO and Co-founder; Michael Khain, Atlona VP Product Development/Engineering and Co-founder

systems" he added. These innovative AV solutions are backed by an Atlona 10-year award-winning warranty.

Ilya Khayn, Atlona CEO adds, "There are strong synergies between our companies including a culture of providing innovative, high-quality, customer-driven products, along with outstanding customer support capabilities. This partnership will

ultimately provide our market channels with a single-source solution and expand our footprint globally."

As part of the acquisition, the Atlona team will join Panduit's Enterprise business group. Atlona will continue to serve its customers from its global headquarters in San Jose, Calif. for all sales, customer support, and training related inquiries.

UNIKA HAS ANNOUNCED DISTRIBUTOR AT INDIA REGION

UNIKA, Taiwan, has announced the appointment of Sonotone Audio LLP as its new distribution partner launching the NBB series products based on Dante in India. Established in 1978, Sonotone is a renowned distributor of audio & cinema equipment representing top audio and video brands, with a network of dealers across 21 states in India. Sonotone today is capable of anticipating the needs of its vast clientele and has been providing them the very best in audio integration solutions in terms of technologically advanced products & services for a wide range of applications.

"Having been our second biggest supplier, I am very impressed with the remarkable quality of UniKA products and am delighted to be now representing their brand in India. I am especially excited about their NBB digital audio transmission system based on Dante. It has become a trend in the field of audio in the 21st century. UNIKA's NBB product system has been validated in many ways and is in line with Sonotone's future development strategy. Particularly the NBB-1616 with 16 input and 16 output, 24-bit conversion rate and the sampling rate up to 192KHz", said **Karan Nagpal**, director of Sonotone.



Simon Hsu and Nina Chang of UNIKA, Karan Nagpal of Sonotone and Hera Hua of UNIKA

CANON DEBUTS LARGE VENUE PROJECTOR; BOASTS 40,000 CENTRE LUMENS OF BRIGHTNESS

Canon has announced the launch of the **LX-4K3500Z**, its first large venue 4K projector. Compatible for the rental and staging installations, this high brightness 4K DLP laser projector is compatible with a range of exchangeable lenses. Capable of projecting high-definition native 4K images with 40,000 centre lumens of brightness, the LX-4K3500Z has a powerful optical system.

Achieving vibrancy and true to life colors, the LX-4K3500Z is equipped with 10-bit color processing to deliver over 1 billion colors across the DCI-P3 color space, without any additional filters. Featuring a laser optical system, which encompasses two color light sources and a phosphor wheel, the LX-4K3500Z is capable of a wide color gamut to deliver a sense of presence and immersion within native 4K video sources. A 3-chip DLP, with HDR and 30,000:1 high dynamic contrast ratio, produces vivid colors and deeper blacks without color breakup to ensure faithful media reproduction. The LX-4K3500Z is compatible with a range of seven lenses which offer high-quality projection on 100-1000" screens from distances of 2m-176m.

As Canon's highest brightness projector launched to date, the LX-4K3500Z has two

color laser light sources which delivers 40,000 centre lumens. This projector offers four different laser light output modes, including constant brightness and manual adjustment, which can be calibrated in 1% increments from 30%-100% delivering longer life and greater control of light output for blending. Delivering sharp quality projection, the LX-4K3500Z uses 3 x 1.38" DLP panels for high native 4K resolution, giving 4096 x 2160 for 8,847,360 pixels output, ideal for public viewing at sports events or for rental and staging events. Ensuring that 4K resolution content is faithfully projected, the LX-4K3500Z is furnished with a variety of 4K image modes that can be selected. This includes DICOM sim for accurate display of grey scale used in medical education and large medical conferences.

Supporting complex environments, the LX-4K3500Z is compatible for any 360-degree orientation supporting portrait mode projection. Ideal for projections in auditoriums, the LX-4K3500Z boasts four corner keystone correction, corner adjustment, and geometry correction software to eliminate distortion when projecting



4K projector LX-4K3500Z

onto uneven surfaces, such as wall corners and spherical spaces. Suitable for installations using multiple devices, built in edge-blending produces beautiful, merged images by correcting any pixel position to deliver accurate projection for large scale projects. Systems integrators can easily adjust the image position without tilting or repositioning the projector, as all non-fixed lenses offer motorized shift, zoom and focus, while the lens memory function easily recalls specific lens requirements.

Facilitating easy installation and greater network connectivity and control, the LX-4K3500Z has a wide range of connectivity options including HDMI, DP, 3GHD / SDI, plus HDBaseT, RS232C and LAN ports.

MEYER SOUND EXTENDS FLEXIBILITY OF INTELLIGENTDC SYSTEMS WITH NEW MPS-482HP POWER SUPPLY

The new **MPS-482HP** two-channel power supply extends the flexibility and cost-effectiveness of IntelligentDC, an exclusive Meyer Sound technology, which enables remote DC powering of self-powered loudspeaker systems. The MPS-482HP may be used in place of the existing MPS-488HP unit when fewer than eight loudspeakers are needed in the system, or it can supplement the MPS-488HP for larger systems when the total count falls

between multiples of eight. In addition, the compact dimensions and passive cooling allows flexible placement of the power supply in locations close to the loudspeakers.

As with the larger MPS-488HP, the MPS-482HP sends a balanced audio signal as well as 48V DC power to any of the 12 full-range loudspeakers and two subwoofers that incorporate IntelligentDC technology for remote external powering. Loud-

speaker connections can be made with 5-conductor class 2 cabling that does not require conduit in most

jurisdictions.

Typical applications for the MPS-482HP as the primary power supply include smaller boardrooms, hospitality suites, home theatre installations, and intimate hospitality and retail establishments. It is particularly suited for creating 2-channel systems with compact loudspeakers, such as the MM-4XP, UP-4XP, and UP-4slim. Additionally, it can power up to six Ashby-5C or four Ashby-8C ceiling loudspeakers and is also ideal for powering surrounds in immersive configurations. In larger installations with a rack room, the MPS-482HP may be specified as needed alongside MPS-488HP units.



Meyer Sound technology MPS-482HP

EPSON LAUNCHES TWO NEW 3LCD LASER PROJECTORS

Epson, has announced the launch of two new 3LCD laser projectors – the **EB-L12000Q**, which is the industry's first 12,000 lumen native, lightest, 4K 3LCD laser projector; and the **EB-L20000U**, Epson's first model in the 20,000 lumen

rental and staging events, large auditoriums and digital signage installations.

The EB-L12000Q and EB-L20000U feature a light and compact design, making them easy to integrate into existing infrastructure, and is a breakthrough in terms

of size at this level of brightness. With Epson's original laser light source structure and advanced electrostatic filter, the projectors are capable of delivering 20,000 hours of maintenance-free use.

The projectors come with a triple layer dust-proof structure housing a sealed optical engine for excellent durability and

resistance, reducing airflow by 86 per cent compared to the previous models, greatly reducing the risk of dust and smoke intrusion. A newly developed liquid cooling system maintains optimal temperatures of key optical elements within the sealed optical engine. Additionally, the projectors come with a mechanical shutter that

protects the lens from laser light damage.

The projectors are designed to ensure maximum installation flexibility and are able to rotate 360 degrees in any direction without loss in image brightness. A built-in camera enables remote diagnostics and setup. Epson's new Professional Projector Tool software simplifies the set-up of multi-projector installations and offers intuitive geometry correction such as automated edge-blending, curve correction and color matching. Additionally, interchangeable interface boards mean greater flexibility and futureproofing, allowing for new interfaces and interface updates in future.

Both models are also compatible with the same 4K-compatible lenses used by Epson's EB-L1000 series projectors for interchangeable usage. The projector models are also compatible with the new zero lens offset ultra-short throw lens ELPLX02 with wider lens shift, useful for environments with extremely limited lens-to-screen distances. The new projectors also feature support for Hybrid Log Gamma and HDR10.



3LCD laser projectors EB-L12000Q and EB-L20000U

WUXGA installation projection sector.

The new EB-L12000Q projector comes with the Epson-developed native 4K panel, delivering 4K resolutions at 3840 x 2160 pixels for more than ultra-high definition quality projections. Driven by Epson's proprietary laser light source are suitable for use in demanding environments including

CHRISTIE EXPANDS RGB LASER PROJECTION LINEUP WITH MIRAGE SST

NEW RGB LASER SOLUTION FEATURES ULTRA-COMPACT, FIBER-COUPLED PROJECTION HEAD

Christie has launched the **Christie Mirage SST**, a high-performance RGB laser projection solution featuring Christie TruLife electronics.

Featuring an ultra-compact, fiber-coupled projection head, the Mirage SST is ideal for complex, demanding applications including theme park attractions, dome theaters, and planetariums. Weighing just 110 pounds (50 kilograms) and with its small form factor, the Mirage SST projection head enables installation where space constraints have previously been a barrier. The remote light source allows the chilling equipment to be placed away from the projector head, saving space and ensuring a whisper-quiet experience for audiences.

With TruLife electronics, the Mirage SST delivers 4K resolution at 120fps, or, with an optional license, 480fps at 2K resolution. High frame rates remove blurring and strobing effects in fast-moving images, critical to creating an immersive

experience for audiences.

The Mirage SST further creates an ultra-realistic experience by achieving greater than 90 percent of the Rec. 2020 color space and 5000:1 on/off contrast with ultra-high contrast lenses. With rich, highly saturated colors, a more natural color reproduction is also possible.

"The Mirage SST joins the recently released D4K40-RGB in Christie's lineup of RGB laser projectors," says **Mike Garrido**, senior product manager, Christie. "The Mirage SST brings flexibility to system design and incredible image fidelity, and, as a result, we believe the creation of the next generation of spectacular, immersive visual experiences is now possible."



Ultra-compact Christie Mirage SST

The Christie Mirage SST can be installed in single or multi-projector configurations and is compatible with Christie Mystique Install, which simplifies the design, installation, and maintenance of multi-projector arrays, and Christie Guardian, which offers automated, invisible, real-time blended image correction even when content is playing.

SHURE LAUNCHES MV88+; EXPANDS AWARD-WINNING MOTIV LINE

PORTABLE MICROPHONE AND ACCESSORY KIT CAPTURES HIGH-QUALITY AUDIO FOR VIDEO RECORDING ACROSS A DIVERSE RANGE OF MOBILE AND DIGITAL DEVICES

Shure unveiled the **MV88+ Video Kit**, featuring a digital stereo condenser microphone that provides content creators with an all-in-one solution for capturing professional-quality recordings on-the-go. The kit also includes a Manfrotto PIXI tripod, phone clamp, and a mount. It also includes iOS and USB-C cables for next-level compatibility and connectivity.

Built on the classic design of the MV88 iOS Digital Stereo Condenser Microphone, it delivers Shure signature audio quality for desired content creation. Designed for podcasters, videographers, content creators, field recordists, and musicians looking to record immersive, rich, high-quality audio wherever, the MV88+ accentuates the power of flexibility, enabling to transform any smartphone device into a professional-level mobile audio and video rig.

"The MV88+ Video Kit provides multiple configurations straight out of the box, you shouldn't have to buy half a dozen products to film a high-quality piece of video content one day, and then an audio interview or field recording the next. With the MV88+, you don't have to. We listened to you and worked to develop a superior microphone with superior accessories. This package gives you everything you'll need to film in your studio, on-the-go, at home or wherever life takes you," said **Matt Engstrom**, Senior Category Director, Global Product Management at Shure.

Compatible with iOS and other selected devices, the MV88+ Video Kit equips you with a variety of new accessories, armed with the tools and versatility needed for recording on-the-go. A headphone jack for accurate audio assessment; the phone clamp and tripod stand multiplies the sort of environments the recording can happen in. Whether its studio jamming, filming YouTube videos, or live streaming an interview on a crowded trade show floor, MV88+ easily threads devices into a mounted platform for uninterrupted and stable recording. And it doesn't end there. The MV88+ can also be used for stand-alone audio capture, replacing the need for field recordists to carry a portable

audio recorder.

"The MV88+ takes into account the little things too. We understand the value of efficiency and improved the design to seamlessly record with or without a protective smartphone case. The included phone mount is also compatible with your existing setup, allowing you to connect to any tripod with a 1/4" connector. This empowers you to use the setup that best suits your needs. You'll also be able to tap into the capabilities of the free Shure MOTIV Video and Audio Recording applications to access our state-of-the-art audio quality in tandem with the microphone," noted Engstrom.



Shure MV88+ Video Kit

SHURE NAMES MARK HUMRICHOUSER VICE PRESIDENT OF GLOBAL SALES

Shure Incorporated is announcing the promotion of **Mark Humrichouser** to Vice President of Global Sales. In this capacity, Mark leads the Company's Global Sales team, which oversees Shure's worldwide sales operations for pro audio, retail, integrated systems, and emerging markets.

Mark began his career at Shure in 2006. During his tenure, he has held key sales positions, including Vice President of the Americas and Asia/Pacific Sales organizations, General Manager of the Americas Business Unit, General Manager of the U.S. Business Unit, and Director of U.S. Sales.

"I am proud to appoint Mark to this executive leadership position in global sales," said **Ray Crawford**, Senior Vice President of Global Marketing and Sales at Shure. "Mark's vision and strategic leadership are extremely valuable to our Company and will be instrumental in helping Shure achieve our sales objectives in 2019 and



Mark Humrichouser, Vice President of Global Sales

beyond. I congratulate him on this well-deserved promotion."



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AV TRENDS 2019 – A BIRDS-EYE VIEW ON THE FUTURE!

The year 2018 was interesting and eventful in the AV and collaboration sector. We witnessed several mergers and acquisitions, new technologies, product rebranding, and an avalanche of new products from both big and small entering the market. After such an eventful year, it makes one wonder what the new year has in store. While it is too early to make any near-accurate guesses as the major trade shows and expos are months away, Actis Technologies India decides to take a crack at it using targeted guessing. Here, Actis India makes handful of predictions about the upcoming AV Trends in 2019.

Actis Technologies India, designs and builds a new generation of Business Collaboration Infrastructure for faster, more productive and cost-effective communication. Founded in 1971, Actis has been a pioneer of the audiovisual integration industry in India. With extensive experience in integrating a wide variety of solutions, it has represented some of the leading international brands for AV and collaboration technology in India. **Abhimanyu Gupta** has been deeply involved with the Audio Visual and Integration industry for over twenty-five years. With diverse experience spanning several roles - technical support, business development, design, programming, and strategic planning - he has played a key role in building Actis Technologies into India's leading AV and Collaboration specialists. Actis follows the global AV best practices which have resulted in long term engagements with many leading Indian and multi-national organizations.



A focus on a unified solution

AV will increasingly be impacted by the trend towards consumerization and commoditization of IT. Keeping in mind high-cost and highly complex AV integration projects, the focus will be on providing an end-to-end solution. While there will still be high-profile projects with complex AV integration, the tangible growth will be in large-volume deployments of relatively low complexity. There will be increased convergence between AV and IT by blending the techniques and tools used by IT departments. For instance, when it comes to deploying and managing a plethora of desktop and mobile devices – with the skills and know-how of professionals specifically focused on AV. As

AV projects drift away from the small scale, highly complex custom room integrations to large scale, cookie cutter deployments of huddle rooms and mid-sized conference rooms. Keeping this in mind, the skill sets, tools and processes used in large scale IT deployments will be essential. At the same time, AV integrators will focus on delivering quality audio, cable management and the integration of IT systems with AV components will also be required. The winning combination of AV and IT skills and expertise will drive integrators to actively recruit or acquire skills from both the sectors.



Interactive training space technology

The Audio-Visual Trends for 2019 will witness consolidation in the digital interactive whiteboard and collaboration board segment. The last two years already saw similar products such as Samsung Flip, Cisco Webex (previously Spark), Google Jamboard and much more. These collaborative tools are highly relevant in some specific applications. Interactive whiteboards are a billion-dollar industry and are used in classrooms, boardrooms, engineering, coaching and the strategic planning of many types of projects.

Projection Mapping and Experiential Marketing

This audiovisual trend has taken the industry by storm. Projection mapping goes way beyond your everyday video projection. It involves using multiple projectors to extend images across irregular surfaces. With this technology, many images or videos can be projected on unconventional surfaces. This creates an immersive and panoramic 360° visual experience. Projection mapping is set to make its mark felt in advertising campaigns, live shows, conferences, presentations, trades show or other noteworthy events. Over the past number of years creating a unique visual experience for customers has been high on marketing managers agenda. We're familiar with seeing video walls in the retail space nowadays and the next stage is video floors or even video tunnels.

A fully immersive experience can be achieved readily, with video floors and tunnels and messages can be displayed to shoppers from a whole new perspective. Floor to ceiling displays give innovators and ambitious brands a unique opportunity to grab the buyer's attention and motivate purchases.



LED TVs may dominate projectors

For decades business owners have used projectors for conference rooms and auditoriums. Not only were they convenient, space-saving devices; they also generated giant displays that anyone in the room could see. AV Trends in 2019 may see a paradigm shift. High-definition LED flat-panels are growing in size, shrinking in depth, and offering features not thought possible with projectors. Appreciated for their bright backlighting, LEDs don't need specific light conditions to operate. With modern technology such as 4K UHD and HDR10, LED displays are popping up across workspaces for easy viewing anywhere.

AI Assistants, Automation & Voice Control

Artificial Intelligence and Machine Learning have made their way into most aspects of technology. These technologies have immense potential to handle tedious and inane tasks that can easily be automated. On the enterprise technology side, companies have already been perfecting and deploying these technologies. In fact, many tech giants have already introduced products for consumer applications. One such use case is voice-controlled virtual assistants such as Alexa by Amazon, Siri by Apple, Cortana by Microsoft, Bixby by Samsung, Josh.ai and Google Assistant among others. The voice control solutions have already penetrated in the home automation segment and are moving into conference rooms and other corporate spaces. In the year 2019, your own voice will play a larger role in the control and automation of other technologies in a range of spaces and industries.

Artificial intelligence and machine learning will become commonplace in conference rooms. Initial uses such as auto-framing, noise suppression, active speaker tracking and image processing to improve lighting will be augmented with new capabilities such as meeting analytics, smart transcription, translation, voice controls and more. In other words, what you see in meetings today in terms of automation is just the tip of the iceberg.



Increased Importance of Audio

Video and collaboration products may be coveted, but meetings are doomed to fail without a quality meeting room audio system. Customers just need a little education on budgeting for audio better. Quite often, customers forget that meeting won't take place at all without quality audio. Businesses often make the mistake of prioritizing video over audio when planning meeting rooms. Audio technology in many meeting rooms is often an afterthought. Quite often, audio dropouts, poor clarity, and intermittent snags bring meetings to a stalemate. We've covered this in a blog previously. The AV industry will focus on improving audio quality across the board.



PRODUCT FOCUS OF THE MONTH

*AV Integrated Systems Magazine's Product Focus for the month of Jan-Feb is **"Large Venue Projectors"**.*

Large Venue Projectors are pivotal for delivering high brightness at live events, places of worships museums, auditoriums, and other large venues. Here we feature a selection of large venue projectors ranging between 5,000 – 10,000 lumens delivering immersive, high-impact 4k images.



Barco G60

Barco G60 laser projectors are essentially useful for the professional AV market encompasses three single-chip, WUXGA (1920 x 1200) DLP models at 7,000, 8,000, and 10,000 lumens, all available in either black or white to best fit their environment. With a chassis measuring approximately 19 x 8 x 21 inches (WHD), they're well suited to mid-size venues that require high brightness such as corporate boardrooms and small auditoriums, classrooms and lecture halls, houses of worship, museums, retail applications, and others. The G60s are supported by a half-dozen lens options supporting short-to-long throw installations, and they come with helpful long-range lens shift—up to 100% vertical and 30% horizontal—as well as keystone correction and the ability to support full 360 degree orientation with no restrictions. Long distance cable runs to the projectors are supported with and integrated HDBaseT connection. The laser phosphor light source used in the G60 Series is rated for 20,000 hours, and contributes to a rated 100,000:1 contrast ratio (with Extreme Black processing engaged). Other features of note include support for 3D, as well as embedded warp and edge-blending via Barco's Ptoolset software.



Canon WUX7000Z

Canon WUX7000Z offers WUXGA (1920 x 1200) high resolution, high brightness of 7000 lumens. It provides a versatile connectivity which includes HDMI and DisplayPort terminals – all in an enhanced, durable compact body.

The newly designed model is also complemented by a centered lens mount that fits six interchangeable genuine Canon lenses, including a unique Ultra Short Fixed Lens RS-SL06UW with an impressive short throw ratio (0.54:1) and large vertical lens shift (-15 percent ~ +75 percent) for outstanding installation flexibility. It features good image quality and WUXGA (1920 x 1200). Canon's renowned LCOS technology with AISYS-enhancement, which incorporates three WUXGA high-resolution panels, combined with an advanced color management system allow the reproduction of bright, highly detailed and color-accurate images. The model includes multiple industry-standard interfaces including HDMI, DisplayPort and DVI-I, as well as HDBaseT for enhanced installation flexibility and Wi-Fi connectivity – which can be used to operate the projector's Network Multi Projection (NMPJ) function. The WUX7000Z includes a DICOM Simulation Mode1 which can be ideal for those in the medical education and training field who require displaying monochrome digital X-rays, CAT scans and MRIs with superb grayscale gradation. This mode, which offers both clear and blue-base color temperature presets, simulates the results of devices compliant with the Digital Imaging and Communications in Medicine (DICOM). WUX7000Z (7000 lumens) is powered by a laser phosphor light source which provides long-life lasting operation of up to 20,000 hours, and is equipped with a "Longer Duration Mode3" which is capable of achieving up to 40,000 hours of operation. Additional features include 360-degree installation on any axis, fast boot up time of approximately two seconds, wide color gamut and HDR compatibility for reproducing content with outstanding high contrast.



EPSON EB-G7905U

The **Epson EB-G7905U** is ideal for professional-looking presentations in a variety of large venues. The EB-G7905U creates images with rich, vivid colors owing to the Epson's 3LCD technology and equally high White and Color Light Output. With flexible installation and low maintenance, this 4K enhanced projector offers a fit-and-forget solution for scenarios in which only superior projections will do. Featuring Epson's own 3LCD technology and equally high White and Color Light Output, WUXGA resolution images are vivid and bright, even in daylight with its 7,000 lumens brightness. The projector features 4K enhancement, giving images sharpness, clarity and detail. It gets started quickly by virtue of its lens memory function, which stores projector settings such as image position, focus and zoom, for prompt access when projecting images in different aspect ratios, or using different lenses. Split-screen allows dual feeds to be projected, while a portrait projection mode is possible without changing the lamp. For integration with a wide range of systems, inputs include HDMI, HDBaseT, DVI-D and component video. Thanks to a new range of motorized lenses, including optional ultra-short throw (UST) lens, and both vertical and horizontal lens shift, the projector benefits from 360° installation flexibility allowing it to be placed almost anywhere without distortion or loss of brightness. Its lens memory function stores projector settings such as image position, focus and zoom.



Optoma ZU850

Optoma's 8,200-lumen ProScene laser projector - the **ZU850** is the first to feature MultiColor Laser (MCL technology). The WUXGA resolution projector achieves superior color rendition through an additional red laser. Together with the blue laser, this red laser enhances the color performance

to deliver striking and rich lifelike images with exceptional detail. Designed to deliver consistent brightness and advanced color fidelity, it is engineered to last. The ZU850 forms part of Optoma's DuraCore laser range which champions an industry-leading lifetime laser light source delivering a minimum of 20,000 hours in full brightness mode. Featuring an airtight optical engine that has been independently certified as IP6X, this latest ProScene 'fit and forget' model offers spectacular versatility and reliability. Designed for continuous 24/7 operation, it supports 360° flexible installation and, with 100 variable

power and luminance settings, it is perfect for simulation, live events and almost any challenging environment. The ZU850 joins the range of DuraCore laser projectors with multiple lens options making it is suitable for all types of venues. Aside from the reliability and performance, it will soon pay for itself in savings over traditional lamp-based projectors with virtually zero maintenance required.



Panasonic PT-RZ970BU

With immersive picture quality and practical features, the **PT-RZ970** Series' potential application extends from permanent installation in museums, theaters, and control rooms through roles in signage, exhibition/rental and staging. Powered by the acclaimed Solid Shine Laser drive, which maintains picture quality for longer, and the latest 1-Chip DLP technology, the PT-RZ970 series exceeds expectations with low-maintenance stability and vivid color performance maintained for longer than competitive products over years of 24/7 operation. The Panasonic PT RZ970BU features WUXGA (1,920 x 1,200) resolution, with 10,000:1 contrast ratio. With 10,000 lumens of brightness it has an approx. of 20,000 hrs. of long lasting high brightness & picture quality. The projector based on HDBaseT digital link has single-cable full HD video, audio, and control command long distance transmission up to 328ft via one LAN cable. Its ultra-durable laser optical engine has reliable and continuous 24/7 operation with light-source failover protection. Having up to 10,400 lm brightness the PT RZ970BU has a superior white balance and color reproduction.



Sony VPL-FHZ700L

With 7,000 lumens of color brightness, the **FHZ700L** is designed for large venue commercial spaces in education, corporate, theme park, and museum applications. It delivers WUXGA resolution (1920 x 1200), instant on/off, tilt-angle-free design, edge blending, wide range vertical/horizontal lens shift, advanced geometric correction, and up to 20,000 hours of maintenance-free operation. The FHZ700L also offers integration flexibility, with multiple interfaces,

and seven optional lenses. Using Sony's new laser light source technology, the VPL-FHZ700L packs all of the benefits of vivid color 3LCD technology with a long-life laser light source, for easier operations than conventional lamp-based projection. The 7,000 lumens with 3LCD color brightness delivers images with vivid, natural color and the projector provides near instantaneous power on/off and a constant brightness mode for long time constant projection – ideal for busy meeting rooms, classrooms, auditoriums, and large venues. It offers unique capabilities such as tilt angle free installation. Integrators that want to get creative and change the way they present video images can have unlimited possibilities



ties with a laser-based projector. For example, they can roll the projector 360° clockwise or counter-clockwise, including portrait or landscape orientation, and still get a stable, clear projected image. An optional slot-in HDBaseT board will be available for the VPL-FHZ700L, enabling easier connectivity and reducing total system costs by using fewer cables, signal extenders, thereby, receiver boxes and decreasing the risk of failure points.

SYSTEMS INTEGRATION OF THE MONTH

*The Systems Integration for the month features installation of HD **Christie projectors** by MSS Projects that transformed a 10,000 sq.ft. Jaguar Experience Centre into the most futuristic, multi-sensorial, brand experience. This segment of the magazine will accentuate one noteworthy AV installation each time but does not estimate it as 'the' best AV installation.*

Bringing WATER TO LIFE with Christie HD projectors



The experience centre takes visitors through transitioning zones ranging from interactive floors, a dramatic reveal of the founders bust and inspiring imagery of the scale of the group, products and processes.

*In tandem with our main product focus on large venue projectors (pg17), we bring an install story that spotlights how state-of-the-art **HD Christie projectors** deployed by **MSS Projects**, Delhi has transformed Jaquar's 10,000 sq.ft. Experience Centre in the capital's NCR region into an immersive & interactive multi-sensorial adventure. **AV-ISE** documents the project.*

Bathware manufacturer Jaquar's corporate headquarters in Manesar surrounded by landscaped gardens and water bodies, spread across a 12-acre campus, highlights Jaquar's relationship with water and the company's focus on sustainability and conservation.

The 12 acres also encompasses the manufacturer's first Experience Center

Spread across 10,000 sq.ft., which highlights the brand's legacy and ideology of "sculpting water" in the most futuristic fashion. Designed by Bangalore-based **Foley Design**, the experience centre draws inspiration from the different "Rasas" of Indian classical dance.

The experience centre takes visitors through transitioning zones. The experiences are diverse, ranging from interactive

floors, a dramatic reveal of the founders bust, inspiring imagery of the scale of the group, products and processes, the insular brand experiences of Essco (value segment), Jaquar (premium segment), and Artize (luxury segment), the architect's engagement space towards the end of the journey - each defines a fragment of a beautiful revelation of the Jaquar group.

The venue has different zones and each

List of Equipment Used:

VISUAL:

Total Christie HD projectors used: 43

6000 lumens – 32

7000 lumens – 6

4000 lumens – 2

3000 lumens – 3

Watchout Servers – 9

Watchpax – 7

Medialon Showmaster MK 2 – 2

Medialon MASPRO Audio Server

32 Cobranet outs – 1

Samsung curve UHD 55 inch– 2

Samsung Thin Bazel 55 inches– 2

6000 mtrs of Cat 6 cables

4000 mtrs of electrical wiring

AUDIO:

DSS Blu160 DSP – 1

DSS Blu320 DSP – 2

Crown DCI 600 - 8 channel amplifiers – 8

JBL 24c Mid High Speakers – 64

JBL SV2 Sub Bass Speaker - 16

LIGHT:

PLC controller – 2

Dimmer 12 KW

3 W – RGBW LED Par – 120

LED Flexi Rope Light

Sunlite Moving Head Spots – 8

Sunlite led profiles - 10

Antari Z 3000 Smoke - 1

Fog Screen – 1

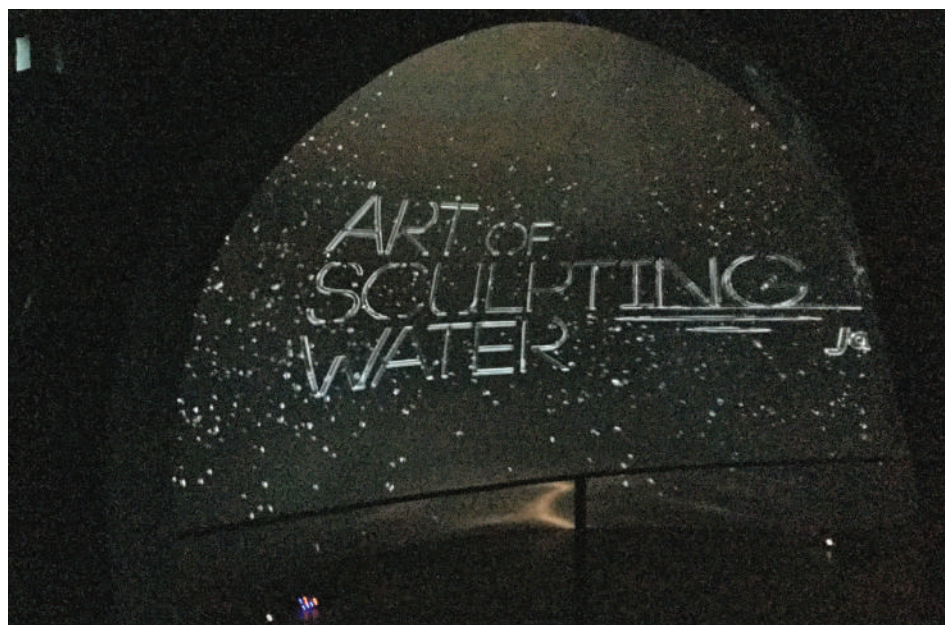
Curved Motorised Screen

30mtrs wide / 2 mtrs Height – Custom Built

zone represent different “Rasas” like Shringar, Hasya, Veeram, Shanta, Bhakti and Adbhut. Different flows of water are depicted in each zone. A space within these experience zones has also been created where upcoming architects can showcase their creative designs. Projection screens and a theatrical setting create a feel of awe and drama. The space is also planned to portray the future vision of the group.

MSS Projects delivers the multi-sensorial experience

Modern Stage Services Projects were



Modern Stage Service (Projects) were contracted to bring to life a concept, The Art of Sculpting Water, as an experience centre for the Jaquar Group

contracted to bring to life a concept, **The Art of Sculpting Water**, as an experience centre for the Jaquar Group and the company has indeed succeeded in presenting every element and every detail in the experience studio to represent the brand’s core essence. A unique graphic style was defined, a new typeface was created and high-end state-of-the-art technology was used to create unconventional imagery like Interactive Floor Projections, Dome structure for image projections and Seamless wall and ceiling projections.

The challenge for MSS Projects was to make this into a multi-sensorial experi-

ence centre within 10,000 square feet by beautifully integrating art, architecture, and energy to aesthetically exaggerate the understanding, evolution, expression and connection between the brand and their visitors.

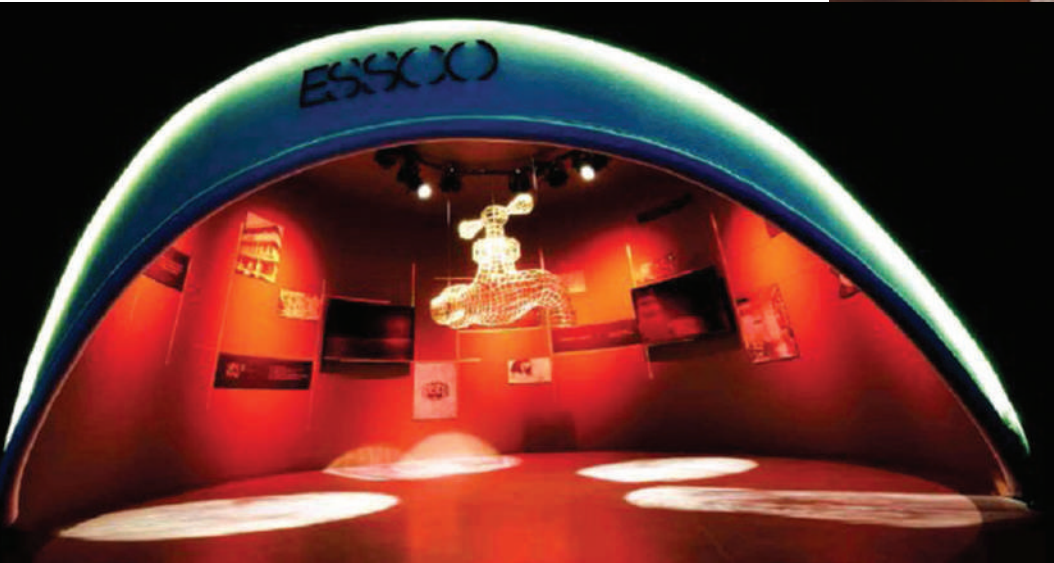
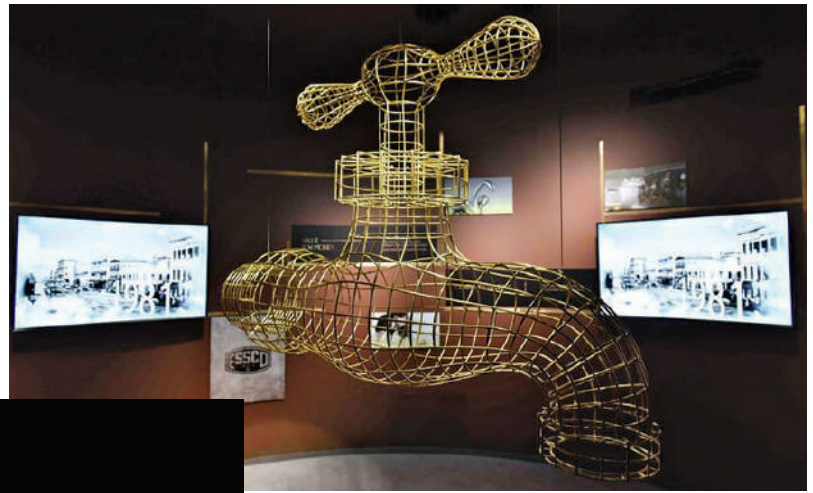
Jaquar as a brand sculpts formless water beautifully in the form of its products; the language of the World of Jaquar therefore was defined by the moods stimulated by water in its various forms – as defined by The Rasa Theory. Each zone within the space, designed with lights, technology, audio and visual and artistic physical displays, were categorized as Shringar, Hasya,



Within individual zones, one can experience myriad expressions of being; of being inside a larger than life dew drop; of waking towards a bright light at the end of a tunnel etc.

“An amalgamation of Auto Powering of the AV systems with Light and Synchronized Audio has resulted in a stunning atmospheric automated experience.”

VIJAY SABHLOK, TECHNICAL DIRECTOR



Each zone at the centre defines the brand experiences of Essco (value segment), Jaquar (premium segment), and Artize (luxury segment).

Shanta, Veer, Bhakti and Adbhuth, with their own surrealistic mood, story, experience, and atmosphere. The zones offer a look at the soul of the brand, its history, its growth, philosophy, product creation methodology and more.

Within individual zones, one can experience myriad expressions of being; of being inside a larger than life dew drop; of waking towards a bright light at the end of a tunnel, comparable to wading through waves of water; of reflecting the calm and serene atmosphere of a sea bed with the fragrance of moist air; and of floating dreamily under water. Each zone, a step towards understanding the depth of processes and the perfection and purity of the Jaquar brands through detailed views of their products, while emphasizing how the group has been a game changer in Indian bath fittings industry.

The technologies and equipment used by MSS Projects to technically deliver the above concept, are listed in the box (pg 23). All the Projectors were Christie and the Image Management and Display Control was provided by Dataton Products, namely Watchout Servers and Watchpax.

An amalgamation of Auto Powering of the AV systems with Light and Synchronized Audio – a crazy 32 different streams of audio all synced to provide audio at all zones, Automatic Video and Images, Infrared Sensors, Motion Sensors, Interactive Floor Projections, Wide Curved Wall Projections, Dome Wall Planetarium Projections, Fog Screen Projections with Lighting, Rotational Effects, Trivision Panels, Holographic Cubes, 360 Projections, Touch Tables, Video Wall And Dynamic Switching has resulted in a stunning atmospheric automated experience, using Medialon Show Controls and an I-pad as the remote interface.

The centre immerses visitors with a multi-sensory experience, weaving all the elements - spatial, interactive, audio-visual content and technology into a seamless timed story-telling journey. This required creating a very clear timed road map from the very beginning, which included synchronization of light, sound and video accompanied by great content which became a brief for all the stakeholders throughout the process till the last milestone of actually converging into a

‘programmed show’.

“Christie has been a leading player in India when it comes to experiential installs. We have a majority share in the Indian market because of numerous reasons most importantly being our ability to not only supply top of the line visual product but also our ability to conceptualise the requirement with the right fit of products. We carry the largest portfolio of visual products today, starting from the largest array of projection solutions, thin bezel video walls, narrow pixel pitch LED walls and stand alone displays as well. To add to it we have our own processing line as well along with playback devices, this enables the users to depend upon one manufacturer for all their visual requirements. Lastly, we are honoured to have been associated with this world class experience centre at Jaguar, with so many visual experiences installed it’s definitely a first in the corporate market for India,” said **Rishabh Nayar**, National Sales Manager.

The work accomplished by MSS Projects and the team behind this project comprising of **Pratik Wadhwa** (Project Consultant), **Saurabh Sharma** (Project Head), **Vijay Sabhlok** (Technical Director), **AMO Viandier** (Show Control Programmer), **Nitin Jain** (Light Engineer), **Pawan Vishwakarma** (System Programmer), **Dhiraj Kalra** (Creative Designer) and **Vineet** (Audio Programmer) breaks the barriers of conventional experiences, where the visitor is just a mere audience to an exhibit.

“There are challenges and then there is the Jaquar project aptly named the Art of Sculpting Water which took the vision of the flow of water, used technology to showcase its beauty and enhance the Brand Value. The main challenge lay in creating the immersive and interactive experience,” says Vijay Sabhlok.



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Being highly invested in the audiovisual domain PALM launched AV Integrated Systems Expo in 2019 with an aim to grow the industry and provide the stakeholders a single platform for all Audio Visual & Integrated Systems Solutions. Leading the charge AV-ISE launched a 3 day certification course in AV Install & Integration -CAVS, designed to provide knowledge of audio and video fundamentals and enhanced troubleshooting skills, while promoting best-practices and technological expertise of systems technologies.

This course is aimed at providing knowledgeable manpower, replacing the 'electrician' with a 'qualified integrator' and creating talent with specific learning for AV integration.

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BOSE PROFESSIONAL MSA12X RESONATES AN IMPECCABLE SOUND EXPERIENCE AT MIT LONI-KALBHOR'S COLOSSAL DOME

The Maharashtra Academy of Engineering Education and Research's Maharashtra Institute of Technology, popularly known as MAEER'S MIT College, is home to one of the largest domes in the world. Measuring 160 feet diameter and 263 feet height, the colossal dome-shaped structure at the Loni-Kalbhor (Vishwarajbaug) campus symbolises the unity of

audio technology – Bose Professional.

Mr. Kulkarni – IT Head at MIT Loni-Kalbhor, and the man in charge of the project in terms of its technological infrastructure including the acoustics and sound reinforcement, shares "MIT is a place where history and legacy meets science and cutting-edge technology, and this is a virtue that we are both proud of and abide by very strictly. This fact is amply demonstrated through the establishment of the massive dome structure at our Loni-Kalbhor campus. Thus, by default, it was imperative that we acquired only the best state-of-the-art pro audio system for the dome. There were several key considerations that factored in the selection for the appropriate sound system – from aes-

thetics to superior sound quality and unmatched distribution and coverage. After checking almost every available option in the market, we found the Bose system to meet all our requirements. We met with the team that finally commissioned the sound system here, and they proposed a precise design sketched through their Modeler Presentation system. We must commend the fact that they went the extra mile in providing a live demonstration of the entire proposed solution which certified the modeled results, and that is when we were completely convinced about the positives of the system, and of the system being an absolute value for money investment."

The dome, in all its architectural glory, embraces cutting-edge audio technology with the installation of a state-of-the-art audio architecture from global pro audio leaders, Bose Professional – designed and integrated by the Bose Professional's in-house technical engineering team in association with their Indian distribution partners Cubix, and the system integration partner for the project – Intart Tech-Solutions. The audio system inside the dome comprises the avant-garde **Panaray MSA12X** self-powered digital beam-steer-

The audio system inside the dome comprises the avant-garde Panaray MSA12X self-powered digital beam-steering loudspeakers integrated and aligned in a Left-Right Stereo configuration cluster of three units each, following a detailed acoustical analysis of the space.

the Indian identity through its religions, ideologies and literature; and houses the MIT World Peace Library which boasts a wide variety of books including few rare ones, along with a massive 3500 person capacity prayer hall which is adorned with 55 golden statues of saints, philosophers, scientists and intellectuals, all of which depict the message of world peace and humanity, as enunciated by the age-old Indian culture, tradition and philosophy. The structure, as affirmed by **Dr. Vishwanath Karad**, Founder of MAEER'S MIT College Pune, is one of the largest domes in the world, and is also home to a subliminal audio experience thanks to the world's leading brand in innovative professional



ing loudspeakers integrated and aligned in a Left-Right Stereo configuration cluster of three units each, following a detailed acoustical analysis of the space. The Panaray MSA12X, with Bose' proprietary Articulated Array transducer configuration, allows it to overcome several acoustical challenges posed by the dome's structural nuances; and deliver wide, 160° horizontal coverage throughout the room.

Intart TechSolution's Director, **Nitin Deo**, elaborates on the nuances of the Bose Professional Panaray MSA12X that made it the perfect system for the project, as he shares, "The Panaray MSA12X is a fantastic system offering a host of features that allow SI's and installers to achieve superlative sound even in the most challenging venues. Designing a great sound solution for dome-shaped structures is always challenging, considering the acoustics of the space due to its geometry. Such spaces are highly reverberant in nature, and the larger the dome, bigger is the challenge! At the MIT Loni Kalbhori campus, we were met with the same dilemma. Due to the geometry of the venue, the loudspeaker system had to be installed at a height no higher than 4 feet from the base; and achieving consistent coverage with uniform SPL and tonal balance in such situations is highly unlikely with conventional sound systems. However, with the Panaray MSA12X's Flat Floor Optimized Beam Steering pattern, which is optimized for venue with evident height restrictions and flat floors, we could ensure that the sound is projected unobtrusively throughout the dome with consistent coverage from the front row to the back row of the

room, across the audience area, and with impeccable tonal balance and uniform SPL. This is what makes the MSA12x a truly revolutionary system, and an absolute delight for any install sound professional!"

The Panaray MSA12X loudspeaker system is controlled and managed through a **Bose ControlSpace ESP1280C** processor, which highlights the system's Dante digital audio network interfacing capability and ensures smooth and easy control of the entire system.

Mangesh Karad praises the quality of the new Bose system, as he quotes, "The sense of presence is astounding thanks



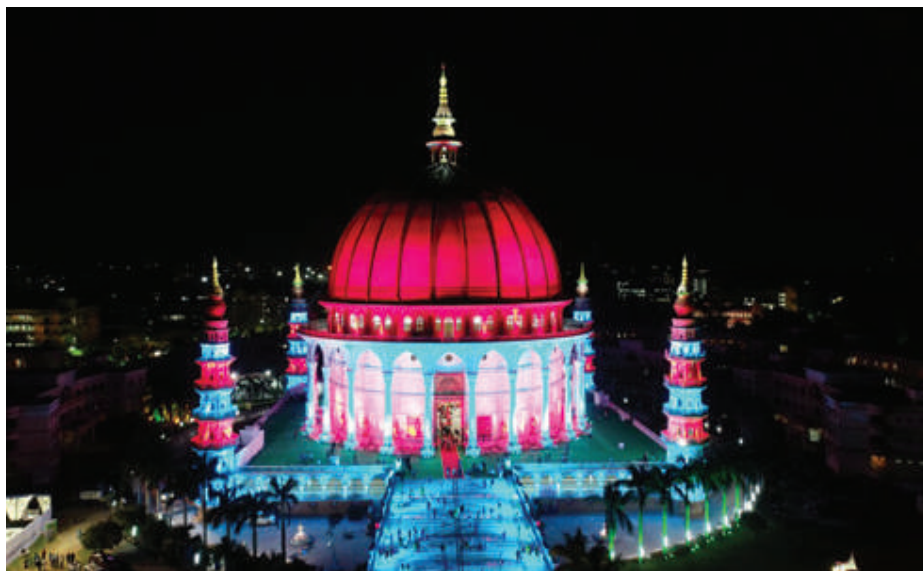
Vibhor Khanna, Country Manager, SAARC, Bose Professional

to the amazing quality of sound. And the overall feel is absolutely spectacular. Bose has given us everything we needed in a sound system, and we are extremely

pleased to have opted for Bose!"

The dome was inaugurated on 2nd October 2018 by the honorable Vice-President of India Shri Venkaiah Naidu, in commemoration of the 150th birth anniversary of Mahatma Gandhi; and also witnessed announcement of the path-breaking World Parliament of Science, Religion and Philosophy, where Maharashtra's Governor **Vidyasagar Rao** presided over the function along with chief minister **Devendra Fadnavis** and deputy chairman of NITI Ayog **Rajeev Kumar** as guests of honor. The occasion witnessed the attendance of over 120 distinguished speakers from across the world, consisting of scientists, philosophers, scholars, educationalist, Nobel laureates, religious and spiritual leaders, in addition to almost 3,000 delegates. And according to Mr Kulkarni – the entire program unfolded smoothly, much to the delight of everyone in attendance, with special commendation towards the subliminal sound experience thanks to Bose, where the primary **FOH system** comprising the Bose Panaray MSA12X loudspeakers delivered a flawless performance, along with the revolutionary Bose **L1 System** deployed as fills along the flanks of the dome during the function.

Vibhor Khanna – Country Manager – SAARC, Bose Professional expressed his thoughts about the brand's association with the project as he asserted, "The MIT is an iconic institution in our country's education legacy, and the MIT Loni-Kalbhor campus is now a symbol of excellence for the world, as it is now home to an architectural marvel. The dome depicts the advancements in design and technology that we as a country have achieved, and it is a matter of such great honor and pride that the management at MIT Loni-Kalbhor decided to partner with Bose Professional for an unmatched sound experience. We would like to thank and commend the entire management at MIT Loni-Kalbhor for investing their faith in our brand; and a special vote of thanks to the entire audio commissioning team for a job well done in commissioning a truly state-of-the-art audio architecture at the dome. We are proud to deliver the kind of world-class audio solution that an iconic and exemplary structure like the MIT Loni-Kalbhor dome truly deserves."



ALLWAVE ENGAGED TO REVAMP FLEET MANAGEMENT TRAINING INSTITUTE

Project Owner: Fleet Management Training Institute(FMTI)

Fleet Management Training Institute (FMTI) is one of the world's largest independent third-party ship management firms with a 24 year old history. FMTI is a Maritime Training Center certified by DGS and DNV-GL. FMTI is an internationally recognized third-party ship management firm, subsidiary of caravel group limited.

Project Highlight:

Today, interactivity and use of technology have become increasingly important. Acknowledging this, FMTI, approached Allwave-AV for their expertise in providing the right technology solutions to create interactive environment. They wanted to enhance the interactions between faculty and students during sessions.

Challenge: Create a dedicated and interactive training Sessions.

FMTI services needs to meet the applicable international requirements while maintaining precise trainings. Smooth collaborations between students and faculty are imperative. This created the need to have a high-quality and high-reliability collaboration network as a platform for their trainings.

Allwave-AV was engaged to design and build this platform for them. The audio-visual system required a major update

that needed to be completed by January 2018. The project involved creating and integrating Meeting rooms, Training rooms, Boardrooms, Open Office Areas and Cafeterias.

At Navi Mumbai Seawoods, a dedicated meeting, training and boardrooms was envisaged to put the latest collaboration technologies at disposal of their entire team.

Solution:

The FMTI team defined flexibility of use, high clarity communication and digital data sharing as their priorities to achieve operations efficiency. They decided to create Boardrooms, Meeting rooms, Training rooms, Open Office Spaces, Cafeterias.

Of these, boardrooms were setup using high-definition video conferencing system to connect with outside world. This makes cross-location meetings possible more frequently, at short notice and with a lower investment of executive time and costs.

The Boardrooms consist of table top mics, ceiling mounting projector, ceiling speakers, video conferencing camera. Boardroom consists of a server rack that

occupies minimal space and forms the backbone of this AV setup.

Of these, meeting rooms, training rooms are setup with projectors screens that display high-impact digital data. They are also equipped with mics and ceiling speakers to ensure speech is audible in all parts of the room.

- **Client Name:** Fleet Management Training Institute (FMTI) at seawoods Navi Mumbai.
- **Client Requirement:** Training Rooms, Meeting Rooms, Boardrooms, Open office area, Cafeteria.
- **Location:** L&T Grand Center Seawoods Navi Mumbai.
- **Installations:** Projectors, Mics, Displays, Amplifiers, Faceplates.
- **Equipment Highlights:**
 - Newline 55" LED Displays
 - Extron WPB109
 - Server rack
 - Logitech Webcams

As organizations continue to grow and demand performance that is up to international standards, collaborations becomes business critical function.

Final Impression:

By enabling interactive learning tools, the institute has been able to create a flexible and dynamic environment. These solutions have helped FMTI to produce creative and interactive training sessions.

DELTA VIDEO WALLS AT SOUTHERN REGIONAL LOAD DESPATCH CENTER (SRLDC), BANGALORE

Delta, a leading provider of video wall solutions, successfully set up a massive **696sqft Videowall** at Southern Regional Load Despatch Center (SRLDC) in Bangalore, India. SRLDC is responsible for supervision, monitoring, and control of the integrated operation of Southern Regional grid and to ensure stability and security of the grid operation. Delta installed its **Next-Gen LED Video wall** solution integrated with **Icon Pro Controller** for this esteemed project. Flexible and reliable, Delta's video wall is envisaged to operate 24 hours continuously, supporting the southern regional load despatch operations.

Effective and efficient operation of a



Next-Gen LED Video wall solution at Southern Regional Load Despatch Center (SRLDC)

load despatch center requires monitoring of a huge amount of information by the system operators. In a load despatch center, it is a challenge to display a vast amount of data in a way, which assists the operators in assessing the actual state of the system. Effective display and monitoring technologies are key for a control room operator to take quick response under critical conditions. With Delta Video walls, operators have ease of viewing and analyzing data and take quick response

under critical conditions.

Safety and reliability are the most important aspects of the power industry, where hundreds of control room operators are responsible for the integrated operation of the power system grid. The SRLDC display wall consists of 48Nos. of **70" LED Video** wall aided by Delta's windows based Controller & wall management software. The Videowall solution for 24x7 operations and slightest downtime will help SRLDC achieve its visualization de-

mands. Delta's high-resolution display wall will provide a detailed view of SRLDC's extensive network covering the complete Southern India region.

For smooth operation of Load Despatch Centers, latest display solution with long years of operation is essential. Delta has the experience and expertise in installing Video walls in power segment. Delta Video walls help System Operators to monitor and detect the anomalous conditions and respond quickly to a situation.

ZYTRONIC IS JUST THE TICKET FOR INDIA'S NEWEST METRO NETWORK

Travelers on India's newest Metro system, in the Northern city of Lucknow, are buying travel tokens through **Zytronic projected capacitive touch sensors**. Mikroelektronika, a Czech kiosk specialist, is supplying **84 touch-enabled kiosks** using Zytronic touch sensors to the network.

Zytronic, a leader in custom-designed, durable Projected Capacitive Technology (**PCT and MPCT**) touch sensors supplied Mikroelektronika with 17" diagonal touch assemblies including 1cm toughened glass for protection. The modules are controlled by the **ZXY100**. Travelers can purchase RFID tokens for travel using coins, notes, contactless or PIN-enabled credit cards through the kiosks. The touch modules supplied work reliably in the very high summer temperatures of up to 40°C encountered in Lucknow.

Commenting, **Ing. Jaromír Synek**, Product Manager, Mikroelektronika said, "Lucknow Metro is a prestige project – a major new network in a fast-growing economy. The customer sought a completely reliable, intuitive touch interface which could withstand all aspects of the city environment, including moisture and spillages, physical attack, humidity, and heat. Zytronic supported us fully in delivering this."

Mikroelektronika supplies ticketing kiosks based on Zytronic projected capacitive touch technology to transport networks throughout the world. Successful installations based on Zytronic sensors include

over 200 machines for the Swedish national railway network, 30 machines in La Paz (Bolivia) as well as installations in Prague (The Czech Republic); Lima, (Peru); Klaipeda (on the coast of Lithuania) and Sofia (Bulgaria).

Jaromír Synek continued, "We have partnered with Zytronic since 2007 due to the flexibility of its manufacturing service

we need with the right specification for our specific project. We offer customers a choice of 10", 15" or 17" screens depending on their requirement, and Zytronic is able to support us here also. We have experienced no failures in this time, and they work reliably whatever the environment. This can range from the coldest Swedish winter to hot Indian summers."

Ian Crosby, Sales and Marketing Director at Zytronic, added, "We were delighted to be able to support Mikroelektronika in winning this prestigious project. Their success in Lucknow underlines their position as a world leader in this sector. Our long-term relationship with Mikroelektronika is based on our ability to supply them is flexible with touch assemblies of the specification they need, when they need them. The range of climatic conditions encountered by their machines is truly staggering, and is a tribute to the go-anywhere capabilities of Zytronic touch sensors."

Mikroelektronika ticket kiosks provide transport networks with a comprehensive solution for cash and electronic payment.

Depending on the customer's requirements, the kiosks can accept coins and banknotes and give change in either if

required. They can also accept credit cards either using contactless or PIN-verified payments and dispense printed tickets, receipts or (as in the case of Lucknow) tokens. Mikroelektronika machines can be entirely cashless if required.



Lucknow Metro in India has installed ticket kiosks from Mikroelektronika using Zytronic touch technology, providing a reliable solution for customers to purchase travel tokens all year round.

and the exceptional indoor and outdoor performance of its touch technology. Ticket machines are typically rolled out in comparatively small numbers, often 10-50 at a time. Zytronic is always able to supply exactly the number of modules



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ENVIRONMENTAL NOISE IMPACT OF OUTDOOR HOSPITALITY SERVICES

In hospitality industry, outdoor restaurants and lounges have a very critical yet common expectation - to provide good audio reinforcement.

This article by Mathew George of MMG Acoustical discusses the euphoria of the opening night, the problems faced in predominantly residential area by the space owners, the contribution of such spaces to environmental noise pollution, and the basic laws to abide by to avoid a probable shut down or legal problems.

In the hospitality industry, outdoor restaurants and lounges hold a particular appeal. The star hospitality segment prides in the provision of outdoor venue for banquets, restaurants, roof top lounges, infinity pool and pool deck to cater to the ever changing and growing demands of their customers. It is very common to expect a premium entry fee to such places.

While such space may be available, it is a very critical yet common expectation to provide very good audio reinforcement and occasionally video reproduction to make the space commercially viable for the owners and interesting for the customers.

Therefore, owners and promoters spare no expenses to ensure these spaces are provided with the very powerful and sophisticated audio amplifications systems. They buy from the best brands to improve the WOW factor of the space. The procurement, installation, and everything is completed to facilitate the opening of the space.

After the euphoria of opening night, soon as the space begins functional daily, the neighbors start to complain about the noise generated by the restaurant or lounge being too loud. The operation staffs attempt to reduce the noise levels and as a result, foul up the tuning and audio setup of the space. The owners again call the system integrators to

noise levels, or worst reaction is to shut down the premises on account of neighbor nuisance - Sounds familiar right?

All the above can be reasonably linked to one concern - the contribution of such spaces to environmental noise pollution and neighbor annoyance.

According to National Building Code and noise zoning laws:

Area Code	Category of Area/Zone	Limits in dBA Leq	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

reduce or resolve this issue. The system integrator retunes the space to initial settings, however the same cycle repeats.

After number of low level complaints, the neighbor complain to the police, whose best response is to advise reduced

As many will know, the hospitality segment comes under the commercial area where as the residences come under residential area. Please note that as per law, it is required that any noise created outside a residential area should be less

than 45 dBA between 6 PM and 6 AM. This is applicable for all mechanical equipment and audio reinforcement systems in spaces adjacent to the residential property.

Presently there is no law to deal with annoyance of music but that may come about in the future.

This is direct conflict with hospitality related commercial entities, which maximize their operations during these times. Needless to say, restaurants, lounges, and pubs in a predominantly residential space face a difficult time with neighbors, who want peace and quiet. This becomes more acute, when open air hospitality spaces or outdoor spaces with reasonably high noise energy acts.

Coming back to the proposed audio amplification system, the selection of these systems have a direct impact on the above concern. Given the outdoor conditions, the audio amplification system

cannot derive any useful reflection to improve or maintain the quality of the content played. It needs to be powerful enough to do that and reach the required audience. However if the audio amplification systems are extremely high powered, the owners need to spend more money on the containment of the sound, which defeats the purpose of being an outdoor venue. Hence a catch 22 situation!!

Therefore it is advisable to sound system designer and integrators to evaluate and design the selection of the proposed sound system to ensure there is good reach to the audience area yet reduced noise leakage to the unintended areas. There are useful tools/ software such as EASE, ODEON and others, which help the designer or integrator to design the selection of the audio amplification system.

With ODEON or SOUND PLAN among others, one can understand extent of noise propagation under outdoor condi-

tions and would help to designer to tweak the design to minimize the external noise leakage as best feasible. Use of barriers can help to some degree but one must always remember that excess sound will overflow the space as excess water does within a tumbler.

One should not ignore the contribution of external ambient noise round the commercial property, which can be beneficial to mask the leaked audio content within the existing external ambient noise. A survey of the present ambient noise levels around the commercial property will definitely help optimize the proposed selection of the audio amplification system.

As with any design recommendation, the earlier the recommendations for the acoustics and audio and video design are incorporated in the architectural / interior design of the space, the lesser the rework.

MMG Acoustical Consultants was founded to provide experienced, independent, professional consulting services exclusively in acoustics and noise control for the Indian subcontinent market. The firm offers a combination of training, experience, leadership, software and instruments for sound and vibration measurement and analysis that is necessary in acoustical consultancy services. Today the primary goal of the firm is to meet the needs for unbiased, quality services in architectural acoustics, industrial noise control, and environmental noise control and recently Electro acoustic (Audio and Visual) design among the clients primarily in Asian market. Mathew, the principal consultant at MMG Acoustical, believes in promoting the awareness for the need of good acoustics and hearing environment in day-to-day activities

Mathew George, Principal Consultant





Atlona's **OmniStream v1.2.2** firmware provides integrators and end users with a powerful AV over IP feature set to drive and manage high-resolution content over the network. The latest OmniStream firmware strengthens AV over IP distribution to video walls and system management within meeting spaces. Key performance enhancements include seamless high-speed switching – or “fast switching” – and new daisy-chaining capabilities for OmniStream's existing encoder grouping functionality fast, seamless switching. The new fast switching feature, available in OmniStream Pro and R-Type systems, greatly accelerates switching time for sources. The new switching mode actively manages EDID and HDCP negotiations between sources and destinations, including displays and video walls. With switching time reduced to less than 10 milliseconds, Atlona's fast switching innovation outperforms competitive products for switching speed across packet-based AV systems. It further enhances video wall performance with new integrated processing functionality, which ensures precise synchronization of content between each decoder and corresponding display tile. Atlona's All-IP Meeting Space solution to accelerate transitions from legacy circuit-based systems to fully networked, IP-enabled environments. The network switch becomes the switcher, creating an enormous amount of freedom to deliver right-sized switching systems without the limitations of a fixed I/O matrix.



The **DS20** has a natural network that integrates seamlessly as part of a d&b system, the DS20 Audio network bridge interfaces between Milan networks and AES3 digital audio signals, while also providing distribution of Ethernet control data. Metadata includes Milan channel labels and cabling information is sent via the AES3 channel stream to the four channel d&b amplifiers. Positioned in front of the amplifiers within the signal chain, this 1 RU device is equally suited to both mobile and installation environments. Providing an interface from the Milan audio network to the digital inputs of the d&b amplifiers via Ethernet, the DS20 provides four digital AES3 input channels for applications such as a break in from a front of house console. The DS20 incorporates a fully AVB enabled integrated 5-port switch, offering a primary and redundant network. This provides extended connectivity for a laptop to control the d&b amplifiers using the R1 Remote control software via the OCA (Open Control Architecture) protocol. The DS20 Audio network bridge enhances the value of the d&b system approach to networked audio.

AURORA VLX-TC1

Aurora's **IPBaseT VLX-TC1** 1Gbps AV over IP transceiver is flexible, fast, and functional, the IPBaseT VLX-TC1 serves the digital signage, education, corporate, government, medical, and broadcast markets.

It includes an SFP slot that dramatically increases flexibility and functionality. The small form-factor pluggable (SFP) option enables greater network simplicity and management. The RJ-45 SFP module allows for a secondary connection to IP

control ports on devices, network segmentation and daisy chaining (reducing home run cables), all from a single drop. The 1Gbps fiber module provides full bandwidth streaming is perfectly suited for applications where signal interference is not tolerated, and secure optical content is necessary. The fiber module also allows for long distance runs up to 20km. The VLX-TC1 also features HDMI 2.0/HDCP 2.2, unlimited scalability, streaming video preview, cloning, channel mapping and videowall modes of up to 8x8 with image rotation capabilities. This transceiver unit is capable of encoding or decoding video while providing Dante/AES67 option, 1G Ethernet, RS-232 and IR control ports, and bi-directional USB 2.0. Additionally, The VLX-TC1 can utilize PoE, eliminating the need for external power supplies thereby simplifying the wiring and space. The VLX-TC1 also supports the new ReAX IP Control engine option (IPE-REAX-1) base on JavaScript. ReAX allows full IP control automation throughout the network without the need of an external proprietary control engine.



Bose Professional CSP-1248 and CSP-428



Bose Professional **CSP-1248 and CSP-428** commercial sound processors are part of a comprehensive platform that includes loudspeakers, controls, and software that help installers deliver premium sound systems efficiently – without extensive DSP training. The commercial sound processor product line are designed to serve as standalone DSPs in applications such as retail stores and restaurants, or any public place. An onboard CSP configuration utility and intuitive browser-based UI provide a quick-setup workflow. All levels, routing, thresholds, and priorities are displayed in real-time, eliminating guesswork and common tasks are presented in a logical manner, so that systems can be configured faster, reducing installation time while increasing setup accuracy. Bose CSPs offer the right mix of inputs and outputs. These include balanced analog I/O and mono-summed RCA inputs, as well as control inputs, control outputs, and a mute contact. A Bose Amplink output on each model allows for a simplified digital audio connection to compatible power amplifiers and post the installation, Bose-proprietary algorithms offer predictable performance. Opti-source level management monitors the input level of up to four sources, maintaining a consistent volume level between them. SmartBass processing expands performance and response at any listening level and Opti-voice paging provides a smooth transition between music and page signals.



Extron Electronics' **SB 33A** an Adjustable Width Sound Bar, is designed to enhance the audio experience in collaboration spaces. With its exclusive adjustable width design, the new sound bar can be customized to precisely match the size of the display, offering high performance audio reinforcement that looks great in any space. Offering high performance sound and professional install features, the SB 33A accommodates most USB webcams, while options are available to mount a PTZ camera or have no camera at all. With an ENERGY STAR qualified amplifier and carefully optimized drivers, the SB 33A is well suited for small to medium size spaces that require exceptional speech intelligibility and high quality program audio. A variety of mounting and camera options are available, providing an adaptable audio solution for today's collaboration environments. The sound bar uniquely sizes to the display, installs quickly, and provides flexible options that let system designers customize it for a range of collaboration spaces.



Just Add Power's **726 TVI 2GΩ/3G+ TVI PoE Transmitter** Allows Integrators to Add Security Cameras and DVRs to 4K Systems Without a TVI-HDMI Converter. Just Add Power (J+P), a leader in Ultra HD over IP video distribution, announced the

release of its 726TVI 2GΩ/3G+ TVI Power over Ethernet (PoE) transmitter. The transmitter allows integrators to add HD-TVI sources to a 4K system cost-effectively. The 726TVI 2GΩ/3G+ TVI transmitter adds TVI support to Just Add Power's 3G HD over IP system. Eliminating the need for a TVI-HDMI converter in the IP video distribution chain, integrators have the flexibility to add an HD-TVI source to their 4K infrastructure.

Features include line-in for custom audio embedding, local HDMI pass-through, and USB 2.0 for pass-through camera control. Video image capabilities include push, pull, and pop for onscreen customization. As with all models in the J+P lineup, the 2GΩ/3G+ TVI solution integrates seamlessly with any generation of the company's products, allowing integrators to build a future-proof infrastructure that suits any application requirement.

Martin Audio Adorn On-Wall Speakers

Martin Audio series of **ADORN on-wall loudspeakers** brings commercial sound installations. Designed for distributed sound applications that require high performance from visually-discreet, ultra-compact enclosures, the ADORN series also provides a seamless sonic transition within a multi-zoned complex using larger Martin Audio systems such as CDD or BlacklineX. It features a 4" and 5.5" driver; the two-way ADORN 40 and ADORN 55 respectively are available in black or white as standard and can be readily painted to match any interior décor and architectural environment. The loudspeakers have a nominal impedance of 16 ohms, enabling four or more speakers to be driven in parallel by one amplifier channel, thereby maximising efficiency and minimising cost. Their 'T'-designated options are fitted with an internal high-quality 70V/100V multi-tap line transformer with a switch to select the output level. The SX110 subwoofer will further extend the bandwidth of ADORN on-wall speakers, and is ideal for foreground music applications which require increased impact and low frequency performance. Designed to be able to sit under banquette seating or discreetly placed within a venue, this ultra-compact enclosure features a 10" (250mm) driver and generous bass-reflex porting to reduce air noise. SX110 can also be suspended by means of integral M8 threaded inserts.



Yamaha WXC-50

Yamaha's **WXC-50** features a solid metal body with an aluminum cover and a slim, compact design that fits just about anywhere. It has high-performance components and advanced circuitry that deliver powerful, sonically-pure preamplification. The preamp circuitry uses the same high-performance ESS digital-to-analog converter (DAC) found in high-end Yamaha AV receivers and a proprietary power supply ground configuration prevents sound degradation.



Its 48-bit digital volume control provides precision and quality than conventional controls. The highly-rigid metal chassis supplies the stability necessary for clear, powerful music reproduction. WXC-50 supports high-resolution audio –including FLAC/WAV/AIFF up to 192 kHz/24-bit, Apple Lossless (ALAC) up to 96 kHz/24-bit and DSD up to 5.6 MHz – for accurate reproduction of sonic details, presence and atmosphere. Connect home theater AV receivers or Hi-Fi system to the compact preamp, then use the Wi-Fi network to access all of your music from a simple app. The device also permits adding other MusicCast speakers, sound bars or receivers for wireless multiroom audio playback. In addition to Wi-Fi, the preamp also supports Bluetooth and AirPlay, allowing for greater wireless connection flexibility. With the feet removed, the WXC-50 is only 1-5/8" high, allowing it to be placed on a rack shelf within a 1U high rack space. Two units can be placed side-by-side on a 19" wide shelf.

Aurora Multimedia HTE Series

Aurora Multimedia redefines HDBaseT with many new industry-first capabilities including the ability to work at 4K60 4:4:4 with a single unshielded CAT 5e or better cable and the world's first Dante option for 2 or 8 channel Dante. Three new HDBaseT 2.0 products comprised of the HTW-2 two gang transmitter Decora wall plate, **HTE- TX2**

transmitter box unit and the **HTE-RX2** receiver box unit will change the way HDBaseT is utilized.

All products are capable of transmitting 4K60 4:4:4 18Gbps HDMI 2.0/HDCP2.2 100m (330ft) over a single unshielded CAT cable with no quality compromise and with zero frame latency. In addition, all products have an integrated web server for remote IP control, USB 2.0 with directional control, and the world's first Dante option for 2 or 8 channel Dante. For enhanced audio, the HT Series supports ARC (Audio Return Channel). To further simplify the installation, the HT Series can power both TX and RX from a single port of a PoE Switch eliminating external power supplies.

The HT Series also supports the new ReAX IP Control engine option (IPE-REAX-1) base on JavaScript. ReAX allows full IP control automation throughout the network without the need of an external proprietary control engine.



Ceeco Micker-Pro



Micker Pro, an "All in one Mike + Amplifier + Speaker, can be used efficiently for different internal and external activities like group meetings, excursions, playground activities, crowd management at all kind of professional academic institutes, colleges & schools. It is optimized for classrooms & lecture rooms also. Its compact design and light weight enables good to grip so it can be used by anyone, anywhere & anytime for prolonged hours. Only one button click on the Micker Pro starts & stops its functioning. It is one & only patented technology with sound reflector and fine diffuser providing a design finishing. It has echo option, specialized dual mike design, near perfect direction of sound, Self-developed design 10W dual speaker make it useable indoor and outdoor.

THE SHIFT FROM BLACKBOARD TO DIGITAL BOARD

AV in Education: a market to watch

The impact of AV technology on our learning environments has been nothing short of noteworthy. In the last decade, technology coupled with internet penetration has greatly influenced the manner in which education is imparted.

The education sector is poised for a paradigm shift with technology being the main catalyst. Centres for learning across India are today using projection and interactive display to augment the student's learning experience. With more than 20 lakh schools, around 40 thousand colleges and other vocational training centres, the demand for smart classrooms is on the upward trajectory, which according to reports is expected to reach \$6 billion USD by 2020.

Reports suggest that about 50% of projectors sold globally are absorbed by classrooms, and 25% of the budget in a multimedia-based classroom goes into the purchase of projectors.

Even in India, projectors are one of the fastest selling product lines, with the education segment being the main driving force. Government initiatives like Sarva Shiksha Abhiyan in various states and ICT@Schools scheme which aims to have atleast one multi-media lab in each school, is leading to the purchases of



projectors for government schools. Ceratin reports peg the numbers at around 100K units of projectors being installed annually across India's classrooms.

While presenting the annual financial statement for the year 2018-19, recognising the impact of multi-media learning, Finance Minister Arun Jaitley announced the RISE (Revitalising of Infrastructure and Systems in Education) initiative, which would mobilise a total investment of Rs 1 lakh crore in the education sector by 2022. As part of the RISE initiative, amongst others,

the government also plans to increase the digital intensity in the education sector. According to Jaitley technology is the biggest driver in improving the quality of education and the increase in digital intensity in education was intended to gradually move from blackboard to digital board.

Education sector projects in the Tender details section on *page 46* presents a window to the scale of growth in this sector.

HOSPITALITY STIRRING INVESTMENT INTO AV

Hospitality industry is one of the major industry segments where fast-paced digital disruption is being witnessed. According to a Meltwater report titled 'Digital Disruption of the Hospitality Industry', as customers increasingly expect services and processes to be available on demand and fully connected, the hospitality industry today is rapidly adapting services to be more responsive, flexible, and efficient to deliver the prolific guest experience. As per the report Asia's hospitality sector boasts an industry growth of 4% to 5%

per annum.

Indian hospitality and tourism industry too has emerged as a key industry stirring investment into AV Solutions. According to reports by IBEF (India Brand Equity Foundation), India is the most digitally-advanced traveller nation in terms of digital tools being used for planning, booking and experiencing a journey.

Digital Concierges, smart screens and touch screen displays, video conferencing facilities are today a common feature in most hotels around the country. A hotel

that does not feature Digital screens and displays has become a rarity and user-friendly technology in guestrooms to create a memorable experience for guest is commonplace. Moreover, the different spaces within the hotel vis-à-vis restaurants, conference rooms, banquet areas, outdoor areas etc., each demand unique AV capabilities.

Watch out for the Tender Details section in the Mar-April 2019 issue of the magazine for AV requirements in some upcoming hospitality projects.

AURORA MULTIMEDIA APPOINTS MINDSTEC ASIA TO DEVELOP ASIAN BUSINESS FOR CHINA, HONG KONG, MACAU, TAIWAN, JAPAN, AND SOUTH EAST ASIA

Aurora, founded in 1998, manufactures products incorporated with state-of-the-art technologies that surpass typical specifications and features. It has experienced and penetrated in India and Korea successfully in the past 2 years, now Aurora is looking for expanding business in China, Hong Kong, Macau, Taiwan, Japan, and South East Asia. Aurora, a dominant force of advanced A/V processors in the A/V industry, now appointed **Mindstec Asia** to provide diverse advanced, reliable, and customized audiovisual solutions for China, Hong Kong, Macau, Taiwan, Japan, and South East Asia. "The agreement for sure can bring Aurora products into more markets all over the world with Mindstec Asia's localized service support," said **Paul Harris**, CEO of Aurora.

Mindstec Asia specializes in procurement and distribution of high-end audiovisual system-solution to bring the latest audio-visual solutions to the market. It now manages the Asia market in China, Hong Kong, Macau, Taiwan, Japan, and South East Asia for Aurora. Along with IP video distribution solutions, Mindstec Asia is offering Aurora dedicated local sales, training, and engineering support.

"Mindstec Asia as a leader in AV distribution, they clearly understand the needs of the customers in Asia. We are excited to work with Mindstec Asia, as they have an extensive network in the industry and the ability to market Aurora throughout China, Hong Kong, Macau, Taiwan, Japan, and South East Asia. They will broaden our global presence with localized support and education," said Paul Harris, CEO



Aurora manufactures products in their own facility in Morganville, United States

of Aurora. "This is indeed a big leap for Aurora business in just two years of presence in India", added **Nataraju Upputuri** - Director, Aurora Multimedia India. "Aurora Multimedia India will be extending all kinds of support to Mindstec Asia in establishing a business in those markets", he further added.

Mindstec Asia will provide dedicated sales and engineering support in each country, taking advantage of Aurora's reputation and deep market penetration in some of the world's fastest-growing economies. **Harry Lam**, Asian CEO of Mindstec Asia is very optimistic about the future of Aurora. "We want more people to enjoy the benefits of Aurora's products, their full range of products has a very wide range of application, which is why we introduce this robust IP video distribution solution for the market. We have many advantages when it comes to selling this product in term of our distribution network and marketing

capabilities. It is a further step towards strengthening our power and consolidate the leading position in the market with Aurora."

Lam added, "In the ever-changing technology world, remaining competitive is the key to success. For the sake of proving that Mindstec Asia is always standing at the forefront of bringing the latest cutting-edge technology to customers, we would keep abreast with times and bring future-proof solutions to customers. And now we are busy setting up Aurora training centers, which will train, certify, and empower our channel partners to better understand and support the Aurora products." Mindstec Asia is going to empower our channel partners with the right knowledge to enable them to support their clients with both sales and after-sales support. As a result, systems integrators and our client can enjoy more variety of the A/V product with fast delivery and reliable local support service.

BRIGHTSIGN ROUNDS OUT SERIES 4 PORTFOLIO WITH NEW HD AND LS MEDIA PLAYERS

BrightSign, LLC, one of the global market leader in digital signage media players, had launched ISE its HD and LS Series 4 players rounding out its Series 4 player family. The new BrightSign **HD4 and LS4** models feature upgraded player hardware and run the latest version of BrightSign's dedicated **operating system (v8.0)**. Both

players feature major updates to the HTML rendering engine, with the HD4 now offering 4K native decode supporting HDMI 2.1 and HDR10. Both the HD4 and LS4 boast even higher power efficiency than their Series 3 counterparts.

BrightSign also exhibited its advanced XD4 and XT4 players at ISE. The XD234

and XD1034 support Dolby Vision as well as 4K video. The XT244 and XT1144 support PoE+, dual 4K video decode and 4K graphics; and XT1144 supports HDMI-In to deliver Live TV to end-points either via an HDMI cable or streaming over a network. These players deliver BrightSign's fastest performance to-date.

EXTRON INTRODUCES FULLY CUSTOMIZABLE AV CONTROLS

Extron has announced the launch of **NBP Series Network Button Panels**, a new product family that brings convenient, easy-to-deploy control to a broad variety of AV applications. Network Button Panels

connect to a control processor using standard Ethernet. These customizable, easy-to-use control panels work in conjunction with an IP Link Pro control processor, HC 403, or HC 404 to perform a wide variety

of AV system functions such as display On/Off, input switching, volume control, and much more. The buttons can be easily customized using Extron Button Label Generator software or by using the on-line Custom Button Builder application. Network button panels also offer the convenience of PoE - Power over Ethernet, which al-

lows them to receive power and communication over a single Ethernet cable.

"Our new Network Button Panels are another way we are bringing easy-to-use, and easy-to-deploy AV control solutions to our customers," says **Casey Hall**, Vice President of Worldwide Sales and Marketing for Extron. "NBP Series panels allow you to extend control over your network, basically eliminating distance limitations between the panels and the processor."

The **NBP 100** and **NBP 200** are two and three-gang network button panels with field-labelable, dual-colored backlit buttons and a control knob with LED indicators for controlling various functions on virtually any device.

The **NBP 105 D**, **NBP 106 D**, **NBP 108 D**, and **NBP 110 D** are decorator-style in single gang form factors. Decorator-style button panel models ship with black and white wallplates and mud rings for easy installation.



Extron NBP Series Network Button Panels

NAVORI AMPLIFIES MOBILE INTERACTION CAPABILITIES FOR QL MANAGER

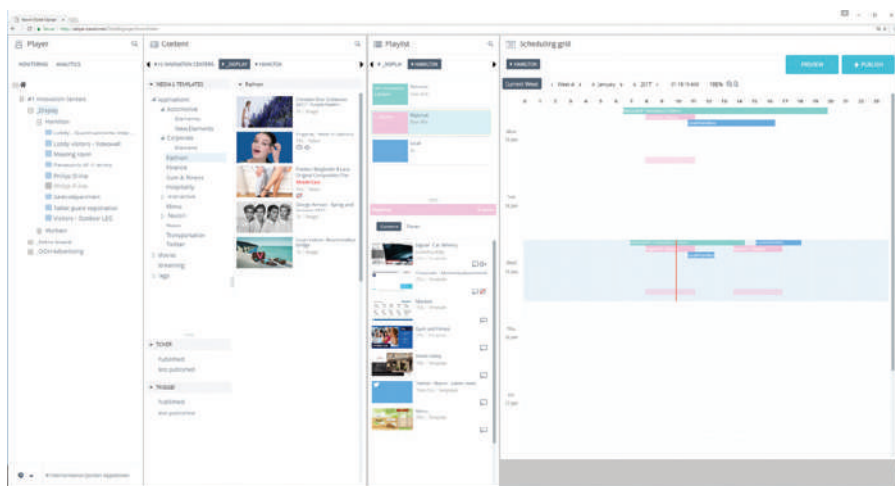
UPGRADE ELIMINATES THE NEED TO MANAGE UPDATES THROUGH THE CMS, ALLOWING EMPLOYEES TO QUICKLY PUBLISH DIGITAL SIGNAGE CONTENT AND UPDATES ON THE MOVE

Navori will streamline digital signage content management for businesses and organizations with a new QL Manager update that allows roaming employees

ronments. The new enhancement, part of Navori's QL 2.1 software update is scheduled for March release, frees employees from the desktop as they attempt to keep

from iOS and Android devices. The new software grants access to local users as they move through a facility with pre-defined control, and reduces the number of steps required to review, manage, and publish digital signage content. Additionally, the software ensures that approved users are not required to funnel all changes and update requests through a central IT or marketing manager.

Beyond traditional CMS features, Navori's mobile interaction feature will allow users to publish snapshots and express messaging, and also trigger and control the content across one or more displays. The diversity in content display options also allows users to present content in a variety of ways, such as comparing colors of the same car model in an auto dealership through a dynamic, side-by-side layout. The result is that users have control over the entire network in their hands as they move about, with the network security peace of mind that Navori provides to all its customers within its QL digital signage engine.



QL Manager update that allows roaming employees to publish updates on network

to publish updates on the network with ease. This will be especially beneficial for non-desk employees in retail, public venue and even corporate and education envi-

ronments.

The software also extends the potential pool of content contributors on the move by making it simpler to update content

TVONE LAUNCHES NEW FAMILY OF HDMI 2.0

tvONE has launched a new **HDMI 2.0** family of products including an ultra-thin auto switcher, a new line of active optical cables, a matrix switcher series, and a new splitter and distribution amplifier series. The tvONE **1T-SX-654 HDMI 2.0** auto-switcher with four HDMI video inputs and one HDMI output supports video resolution up to 4Kx2K@60Hz 4:4:4 HDR and 18 Gbps of high bandwidth. This ultra-thin 4x1 switcher with audio functionality includes multi-channel support, de-embedded digital stereo audio to provide an analog output or an audio return channel (ARC) for transmitting audio back to the HDMI input from the connected display.

tvONE also launched **Magenta Research active optical cables**, featuring DisplayPort 1.4 active optical cables (**MG-AOC-88x**) and HDMI 2.0 active optical cables (**MG-AOC-66x**). The cables provide solutions for extending ultra-high resolution over long distances. These plug and play active optical cables are provided in a drum for easy installing and provide video and audio extension with no compression or latency up to 100m (328 ft), without the need for external power.



tvONE's new HDMI 2.0 family of products including an ultra-thin auto switcher, a new line of active optical cables, a matrix switcher series, and a new splitter and distribution amplifier series

A new Magenta Research series of HDMI 2.0 compact distribution amplifiers is another products launched in the HDMI 2.0 family. The **MG-DA-61x series** provides a high-performance solution for distributing HDMI signals with video output up to 4K2K@60Hz (YUV444) resolutions and HDR (High Dynamic Range Imaging) support. Support is offered for up to 32 audio channels with sampling rates up to 192kHz and pass through of 7.1 channels of digital audio including high resolution digital audio formats such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus, DTS-HD

Master Audio, and Dolby Atmos in 1x2, 1x4 and 1x8 configurations.

The **MX-65xx matrix switcher series** sends HDMI 2.0 (with HDCP) to multiple devices, both independently and simultaneously. Choose from an intuitive front panel, infrared remote control, or tvONE's control software, MX-tools. The matrix switcher series complies with HDCP 2.2 and supports 3D, and 4K2K@60 4:4:4 8 bit and 10-bit processing, for superior deep color rendering. Audio support includes 7.1 audio, including DTS-HD and Dolby TrueHD in 4x4 and 8x8 configurations.

NEW FROM WILLIAMS SOUND: THE WAVECAST ASSISTIVE LISTENING SYSTEM

THE BLUEPOD SYSTEM FROM WILLIAMS AV IS SET TO MAKE ITS MARK IN AUDIO AND VIDEO CONFERENCING WITH THE INNOVATIVE INTEGRATION OF BLUETOOTH TECHNOLOGY

Williams Sound introduced the **WaveCAST**, the next generation of Wi-Fi-delivered assistive listening systems. WaveCAST brings a professional DSP audio platform where digital signal processing provides spectacular audio quality, and the optional Dante interface provides a totally networked audio solution.

WaveCAST is built on a hardware-based audio DSP audio system architecture, allowing system optimization. As a result, hearing assistance can be optimized for hearing loss, music can be optimized for high-fidelity playback, and voice can be set for maximum speech intelligibility. Custom pre-sets can also be established where tweaking is necessary for specific performance applications.

Professional audio inputs on the WaveCAST include 1/4" XLR connectors,

phantom power, and a line level output jack. In addition to multi-stage gain control inputs, the DSP features include AGC, limiters, high and low pass filter, and adjustable range compressor control. The 16-bit DAC provides a 48Khz sample rate for a smooth digital stream and minimizes the digital harshness that occurs in low-bit-rate DACs used in embedded computer-based assisted listening systems.

The new WaveCAST app provides an easy-to-use, intuitive user interface and is available in iOS or Android. WaveCAST supports both unicast and multicast network configurations and can support up to 1500 clients, depending on proper network support.



Wi-Fi-delivered assistive listening systems WaveCAST.

"WaveCAST is a totally new Wi-Fi platform designed for pro-audio applications where high-quality sound is required," explains **Rob Sheeley**, president, and CEO of Williams AV. "This system is unlike those other Wi-Fi systems that are simply embedded computers serving audio. We designed the WaveCAST on a true DSP platform, providing balanced and unbalanced inputs with phantom power, adjustable input gain, aux output, and easy integration into third-party control systems and Dante network audio solutions."

BLACKMAGIC DESIGN ANNOUNCES NEW BLACKMAGIC AUDIO MONITOR 12G

Blackmagic Design has announced **Blackmagic Audio Monitor 12G**, an upgraded model of its rack mount audio monitoring solution. The Audio Monitor 12G features 12G-SDI video input, HDMI output, analog and AES/EBU inputs, a powerful class D amplifier, dual subwoofers, extended range speakers, an LCD and precision meters that can display VU, PPM and Loudness ballistic scales.

The Blackmagic Audio Monitor 12G features the 12G-SDI technology, along with professional balanced analog XLR and AES/EBU audio inputs, and consumer level HiFi audio inputs. Compatible with all analog and digital equipment the multi-rate 12G-SDI connection automatically switches speed based on the input signal.

The Blackmagic Audio Monitor 12G is incredibly small yet possesses a surprisingly loud, crystal clear sound. The new class D amplifier, combined with a dual subwoofer design and extra wide range speakers is powerful and loud enough to hear in noisy environments.

The front panel is designed from a solid block of machined aluminum and



New model features 12G-SDI for working in all formats up to 2160p60, along with a powerful new class D amplifier, dual subwoofers and extended range speakers for crystal clear sound.

features a volume knob, control buttons, a standard headphone connection, precision meters, and an integrated LCD screen. The audio meters feature 27 individual multi-colored RGB LED segments per channel so the meter scale is infinitely customizable, making it easy to monitor a wide dynamic range. Meters can be customized to display VU, PPM and Loudness ballistic scales with a choice of EBU or BBC meters. Plus,

they're brightly lit making them perfect for viewing in both bright or dark environments.

"It's completely flexible and is perfect for monitoring broadcast feeds and transmissions in control rooms, monitoring audio in tight broadcast trucks, or even when working in a post-production suite!" said **Grant Petty**, CEO, Blackmagic Design.

NETGEAR SIMPLIFIES AV-OVER-IP DEPLOYMENTS FOR SMALL TO MEDIUM SIZE BUSINESSES

NEW SDVOE-READY SWITCH STREAMLINES AUDIOVISUAL DISPLAY SOLUTIONS TO SCALE WITH YOUR BUSINESS NEEDS

The NETGEAR has introduced "M4300-96X" Stackable 10G and 40G Modular Managed Switch for smart home and small to medium-sized businesses (SMBs). The **NETGEAR M4300-96X** is the world's

redundant power supplies, the M4300-96X supports maximum granularity between copper, PoE+ and fiber and unrivalled headroom for organizations buying infrastructure for the long term.

Till date the IP convergence in Audio Video industry was limited, the Software Defined Video over Ethernet (SDVoE) Alliance provides a standard programming interface so that even if components

are sourced from different suppliers, products and solutions such as the M4300-96X Switch merge easily without complex coding. To truly converge, IT and AV networks, pre-configured 10 Gbps infra-

structure is ready with NETGEAR SDVoE-ready M4300 switches. Instant installation with pre-enabled IGMP/multicast gets your ProAV deployment running in no time, with optimal 4K no-compromise quality.

To take the complexity out of AV-over-IP deployments, NETGEAR created M4300 switches that are preconfigured for easy, true AV and multicast Zero Touch network configuration. IGMP Snooping, IGMP Fast Leave and IGMP Querier are already enabled for the default VLAN 1 that devices will automatically use – avoiding logging onto the switch. Simply select the M4300-96X port expansion cards that fit your requirements, insert the cards, connect your SDVoE encoders and decoders, and power on the switch.



NETGEAR M4300-96X

only 2U rack height modular switch that comes either empty or pre-populated and scales up to 96 ports of 10G Ethernet or up to 24 ports of 40G Ethernet, or a combination. With 12 open slots and two

BOSE UNVEILS POWERFUL LINE OF AUDIO PRODUCTS AT ISE 2019

Bose Professionals unveiled its line of new audio products at ISE 2019. The list of new launch line included ArenaMatch Loudspeakers, 12 models of new easy-to-install DesignMax loudspeakers in a range of sizes (ceiling and surface models, black and white, with subwoofer options); five new cost-effective PowerSpace amplifiers (two with onboard DSP); two Commercial Sound Processors with a simplified configuration tool; three new digital ControlCenter controllers; and an upgraded online Business Music System Designer software tool to facilitate quicker and better system designs.

Bose Professional's **DesignMax loudspeakers** are a wide range of loudspeakers which offer the flexibility and style to deliver outstanding audio and aesthetics for any commercial space. With ten loudspeakers and two subwoofers to choose from — including ceiling-mounted, surface-mounted, and outdoor-rated options — it's easy to create tailored DesignMax systems for any application, large or small. DesignMax loudspeakers range from 2-inch low-profile models to 8-inch high-SPL compression-driver

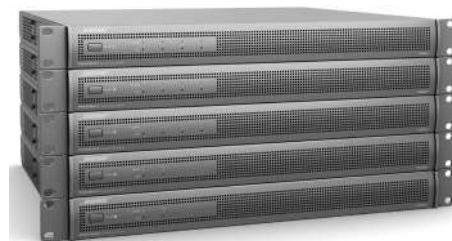


loudspeakers. All models deliver instantly-impressive sound, with no EQ or DSP required. Enabling Bose EQ voicings on

select Bose digital sound processors and smart amplifiers which provides even better sound. SmartBass processing can also be enabled to deliver enhanced sound at any listening level. Elegant form factor surface enclosures, sleek, minimum-bezel grilles, removable logos, and attractive styling allow DesignMax loudspeakers to blend with any décor. For installers, unique QuickHold mounting mechanisms on each DesignMax loudspeaker make the installation job easier, reduce strain, hassle and save substantial time in the field.

PowerSpace amplifiers, introduced by Bose, is a new line of five power amplifiers offering the right power levels and DSP options for premium commercial applications. The line includes three models with Bose AmLink connectivity and two models featuring an integrated DSP. Ideal for zone-expansion applications, the P21000A, P2600A, and P4300A models (2 x 1000, 2 x 604, and 2 x 300 watts respectively) enhance any commercial

installation with clean, reliable power and digital connectivity. A Bose AmLink input allows for multiple channels of uncompressed, low-latency digital audio from Bose digital sound processors via a single Cat 5 cable. Versatile outputs give you the flexibility to deliver full channel power to either low- or high-impedance loads — without bridging — and even send double power to a single zone. Additionally, the P4300+ and P4150+ models (4 x



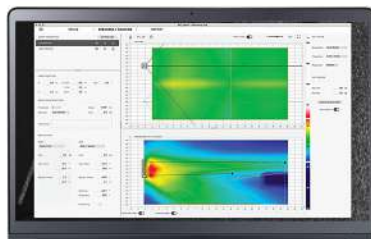
300 and 4 x 150 watts) combine power and built-in DSP into a space-saving 1RU design for quick-turn installations.

Commercial sound processors CSP-1248 and CSP-428 by Bose are part of a comprehensive platform that includes loudspeakers, controls, and software that help installers deliver premium sound systems efficiently — without extensive DSP training. These debut models in the new Bose commercial sound processor product line are designed to serve as standalone DSPs in applications such as retail stores and restaurants, or any public place where



modest processing and high-quality sound are desired. An onboard CSP configuration utility and intuitive browser-based UI provide a quick-setup workflow. Once installed, Bose-proprietary algorithms offer predictable performance, making Bose CSPs the convenient solution for end users. SmartBass processing expands performance and response at any listening level and Opti-voice paging provides a smooth transition between music and page signals.

Bose released the **Bose Array Tool**, a new software application to help make sound system design smarter for AV professionals. The software features an intuitive workflow that requires minimal training. The Bose Array Tool brings variables — such as room size, budget constraints, loudspeaker model and placement — under control. Using a direct-



field calculation engine, system designers can quickly try out different loudspeaker

models, placements, and formations to best match the audio needs of a venue. The software provides intuitive drawing tools to manipulate room surfaces and loudspeakers dynamically and allows for visualizing the speakers' coverage effect in near real time. Ordering lists, rigging, and array information can be easily exported to make the virtual design a reality.

ArenaMatch Utility loudspeakers by Bose is built for zone-fill coverage or high-SPL foreground music. Four new Bose ArenaMatch Utility loudspeakers feature similar tonal balance to ArenaMatch array modules but in compact designs. They have the same EMB2S compression driver as ArenaMatch arrays and the same IP55 weather rating. Perfect for zone-fill coverage in sports stadiums, arenas, outdoor entertainment centers, and more. It can also be used to provide intelligible, high-



level sound in any outdoor area — from niche venues such as breweries and fairgrounds to larger settings like resorts and outdoor shopping centers. Constant-directivity high-frequency horn, which can be rotated for horizontal or vertical installation. ArenaMatch Utility modules can perform in the most demanding applications with the largest model (AMU208) featuring 70 Hz – 16 kHz frequency response and 126 dB maximum peak SPL, with all models supporting the lowest vocal range.

With an open-architecture design Bose Professional expanded its **ControlSpace EX range** with two new processors optimized for conferencing rooms (**EX-440C** and **EX-12AEC**) and a high-powered general-purpose digital signal processor (**EX-1280**).



Its designer software simplifies the setup process for all three processors with intuitive drag-and-drop programming and conference-specific software tools that

help reduce installation time and on-site errors. The ControlSpace EX-440C conferencing signal processor facilitates high-quality microphone integration and audio processing for small-to-medium stand-alone meeting rooms. Various inputs and outputs allow for flexible configuration: four mic/line analog inputs, four analog outputs, onboard VoIP and PSTN, USB, Bose AmpLink output, eight-channel acoustic echo cancelling (AEC), and 16 x 16 Dante connectivity. The ControlSpace EX-12AEC conferencing signal processor possesses twelve acoustic echo cancellers (AEC), 16 x 16 Dante

connectivity, and flexible signal processing, the conferencing signal processor provides a robust expansion of control options and capabilities tailored for conference rooms using the ControlSpace EX-1280C processor – perfect for larger conference rooms, boardrooms and any space where Dante microphones are employed for conferencing. The ControlSpace EX-1280 digital signal processor has a single-rack-unit design, and a digital signal processor equipped for general-purpose audio processing applications. Twelve mic/line analog inputs, eight analog outputs, Bose AmpLink out, and 64 x 64 Dante connectivity allow for flexible configuration and high-quality sound system control. The EX-1280 digital signal processor is designed for performance venues, places of worship, hospitality and resorts, and other spaces requiring intensive processing and scalability.

THREE BYOD CABLE PROJECTOR LINES INTRODUCED BY INFOCUS

InFocus Corporation, introduces three new projector lines designed to make any meeting space or classroom BYOD-capable. Nine new projector models in the **IN130**, **IN130ST**, and **IN2130 Series** feature vibrant colors, ultra-long lamp life, secure and easy integration with popular devices, a powered HDMI port for mobile charging and device power, along with support for vibrant 3D content from video games, PC programs, and a new whisper-quiet fan design.

The projectors are a customizable presentation solution, with the new TechStation internal HDMI 1.4 bay that lets users simply add a Google Chromecast, Intel Computer Stick, InFocus SimpleShare, Asus or any other HDMI-compatible device into the bay, keeping cables and dongles neat-

ly tucked away. Educators and presenters can then use the features of the connected HDMI device to start presenting, stream audio or video, cast content, etc. using compatible devices such as laptops, tablets, or smartphones.

Meetings, lessons, and presentations are enhanced by the image quality of the IN130, IN130ST, and IN2130 projectors. Each new projector series is a lasting solution with an ultra-long lamp life of up to 15,000 hours, 28,500:1 contrast ratio for blacker blacks, and BrilliantColor™ DLP imaging technology for over one billion life-like colors that will show up on whiteboards, blackboards, or beige walls in any light.

The IN130 and IN130ST Series were designed to suit classrooms, with a bright

picture, flexible and fast integration with devices for casting, and long lamp life.

The IN130 Series replaces the **IN120x Series** with three models, **IN134**, **IN136**, **IN138HD**. The **IN130ST Series** brings new short-throw projectors to replace the **IN120STx** line with **IN134ST**, **IN136ST**, and **IN138HDST** models for a 100-inch image from less than four feet away.

For meeting rooms and huddle spaces where connection flexibility and BYOD is essential, InFocus introduces the new **IN2130 Series** to replace the **IN2120x Series**. The three projector models, **IN2134**, **IN2136**, and **IN2138HD** become an all-in-one business solution with 4,500 lumens of brightness that seamlessly displays user content from any HDMI-compatible device inserted into the TechStation feature.

GOVERNMENT OPENS BIDS FOR INSTALLATION PROJECTS

2.27 CRORE INSTALLATION PROJECT AT IIT KHARAGPUR

Name of Project: Indian Institute of Technology, Kharagpur, tender for Audio Visual Products for various auditoriums of IIT Kharagpur.

State: Kharagpur, West Bengal, India.

Details: Tender For Procurement And Installation Of 5.1 Dolby Digital Sound System

Requirements: 112,000 lumens Multimedia Projector; Zoom lens; 7,200 lumens Multimedia Projector; 18 55 inch LED Panel Unit for 3x3 Videowall; 2 Universal Videowall Stand for 3x3 Videowall, Mixing Console; 3 Analogue Control Unit for Discussion System ; 53 12 inch Analogue Delegate Unit for Discussion System; 4 15" Two-Way Bass Reflex Passive Speaker System, Single 18" Bass Reflex Subwoofer, 15" Two-Way Full-Range Main System/Floor Monitor with Wi-Fi; 8 12 inch Two-Way Loudspeaker System; 2 Mixing Console, Equalizer, 8-channel line signal splitter, Stereo 2/3 Way, Mono 4-Way Crossover, 19" standard 36U equipment rack ; 4 1000W Amplifier; 2 1600W Amplifier;

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY'S BID FOR AUDIO-VISUAL INSTALLATION LIVE

Name of Project: Swami Ramanand Teerth Marathwada University

State: S.R.T .M.University, Nanded, Maharashtra

Details: Tender for Supply Installation Testing and Commissioning Of Audio Visual Lighting System and Acoustic Treatment for School Of Media Sciences SRTM University Nanded

Requirements: Supply, Installation, Testing

PWD TO EXPEND 2.27 CRORE FOR AV SYSTEMS AND STAGE LIGHTING

Name of Project: Providing Audio Visual System And Stage Lighting System for Public Works Department

State: MAIDS, New Delhi.

Details: Corrigendum - C.O Extention Of Maulana Azad Dental Institute Of Dental Sciences, Phase Ii At Bahadur Shah Zafar Marg, New Delhi (S.H. Providing Audio Visual System And Stage Lighting System Including 5 Years Comprehensive Maintenance)

Requirements: 11000 ANSI DLP Digital Projector; 147" x 236" Motorized Projection Screen; HD Wireless Presentation System; 1/2.8 Exmor CMOS P/T/Z Color Video Camera; 55-inch LED Professional Monitor; LED Video Wall; 32" LED Professional Monitor; High Definition Visual Communications System; Wall Mount Plate; VGA to HDMI Scaler Converter; 24 Ports Switch with accessories; Video over IP Network transceiver; Control system processor; WiFi Access Point / Router; IR Probes; Table Mount Hub; HDMI Audio de-embedder; 1000W, 240Volt PAR Sealed Beam Light; 4 Ft X 72 Watt PAR Sealed Beam Light; 24/48 channel Light controller; 54 LEDs Lights; Electronic dimmer wall mounted type; DMX Splitter for LED lighting; Interconnection Wiring; Light Point Wiring; 2-way High Power Loudspeaker; Mid-High Frequency Down Fill Loudspeaker; High Power Dual 18" Subwoofer; Network Based Four-channel Digital Power Amplifier; Network Based Eight-channel Digital Power Amplifier; Portable 2-way Stage Monitor loudspeaker; Wall Mount Speaker for Green Room; Dual Channel Power Amplifier; Network Based Digital signal processor; Advanced Feedback Suppression; Ethernet controller; 24-Channel mixing console; UHF Wireless Handheld Microphone System; UHF Wireless Lapel Microphone System; UHF Antenna divider/splitter suitable for Wireless Handheld & Lapel Microphones; Gooseneck Microphone; Dynamic Vocal Wired Microphone; Condenser Instrumental Microphone; Microphone Box complete with Neutrik 3 x XLR Connector; Microphone Box complete with Neutrik 2 x XLR Connector; Microphone Stand (Small); Microphone Stand (Big); FOH Speaker; Two-Way Full Range Ceiling Speaker; Dual Channel Class D/TD Power Amplifier; Digital Signal Processor; Fully Digital Flush Mount Delegate Microphone Unit with Speaker; Fully Digital Flush Mount Chairman Microphone Unit with Speaker; Fully Digital Central Conference Controller Unit; Connecting Patch Cord; Connecting Patch Cord; Desktop Paging Microphone with base; Four Channel Power Amplifier; 7.1 AV Receiver; Networked audio Chaasis based Audio processor; Speaker Cable (2.5 Sq.mm), (4 Sq.mm), (1.5 Sq.mm); Microphone Cable; LAN Cable; Twisted pair Control & Signal Cable; 50ohm low Control & Signal Cable; Power Cable; HDMI Cables; VGA Cables; VGA Cables; 16U Equipment rack; 22U Equipment rack; 36U Equipment rack;

INTEGRATION AND ACROSS INDIA

AIIMS RISHIKESH TO SPEND 1.13 CR. FOR AUTOMATIC MUSIC SYSTEM

Name of Project: All India Institute Of Medical Sciences Tender For Supply, Installation, Testing & Commissioning Of Automatic Music System At Aiims Rishikesh

State: Rishikesh, Uttaranchal

Details: Tender For Supply, Installation, Testing & Commissioning Of Automatic Music System At Aiims Rishikesh -Supply, Installation, Testing & Commissioning Of Full Range Environment Rated (Ip35 Or Better) In Ground Or Above Ground Landscape Pa / Music Loudspeaker With One Downward Firing 4.5" (114Mm) Advance Composite Environmental Full -Range Driver, Supply, Installation, Testing And Commissioning Fiber Connector, Copper Connector ,90/76 Mm Hdpe Dwc Pipe, 19" Professional Rack With Fan & Roller Casters For Control Room, Soft Soil Digging For Laying Cables Including Refilling Etc.

Requirements: 80 Bose Free Space 360P, Custom built GI speaker jali with SS Nut & Bolt, ; 1 Bose EX 1280C, Bose CC -64 +PS-1, MX or equivalent interconnection of equipment, gooseneck microphone with polar pattern for announcement, 19 inch professional CD/MP3 USB player for music, custom built rack with fan & roller casters for control room, Fiber Connector, Copper Connector; 2 Bose PM 8500N, Dante Card, Cisco network port as per design, Copper to Fiber TX, Fiber to Copper RX, Bosch wired handheld microphone, Mipro/Bosch wireless UHF microphone hand held, Yamaha/soundcraft 12 channel mixers; 3 16 U rack; 4 Good make microphone stand full size; 1000 mtrs Multi core Armoured fiber cable; 500 mtrs untwisted pair Cat-6 cable; 3,500 mtrs 2 core 2.5 Sqmm Speaker Armoured cable; 4000 mtrs Good make 90/76 MM HDPE DWC Pipe; 2500 mtrs Soft soil digging for laying cables including refilling.

INDIAN RAILWAYS' MULTI-STATE AUDIO VISUAL PROJECT WORTH 1.75 CR

Name of Project: Multi-state Indian Railway Project

State: Multi-State

Details: Tender For Provision of Video wall at HWH station concourse area and adjacent place

Requirements: 1 3072 mm X 3840 mm True Color Video Outdoor Display unit; 8 2928 mm X 3904 mm True Color Video Indoor Display unit; 1200 mtrs. Supply of Optic fiber multimode (6 fiber) as per technical specification, Supply of Cat 6 cable as per technical specification; 2 Supply installation of 16 port POE switch as per technical specification; 3 Customized cabinet with seating arrangement to operate and house the control Console Inspection by Consignee, 1 KVA compact UPS as per technical spec, control console for command as per Technical specs.

MSME HYDERABAD REVEALES AV SYSTEMS UPGRADATION PROJECT

Name of Project: MSME-TOOL ROOM, HYDERABAD CENTRAL INSTITUTE OF TOOL DESIGN (Ministry of MSME- A Govt. of India Society)

State: CITD, Balanagar, Hyderabad

Details: Tender notice for upgrading of audio-video systems in the conference room

Requirements: 1 Projection Screen of size 59" x 105"viewing area with an aspect ratio of 16:9, 2 feet + 2 feet plate Universal Drop Down Ceiling Mount Accessory For Projector, Audio Amplifier, Mixing Console with Class-A mic preamps , Ultra slim profile design for podiums, pulpit and lectern applications Gooseneck Type Microphone, Wireless Handheld Lapel Type Microphone, non-diversity VHF Wireless Lapel Type Microphone, 6U Storage Rack with Shelves, AV Plate with at least one VGA, one audio and one HDMI female type connectors each ; Wireless Handheld Type Microphone; 20 In-Ceiling Loudspeakers; As required Branded All Signal Cables (Except for CATX Cables), Extron / Crestron / MX - All HDMI cables to be capable of High Resolution Signals, Extron / Crestron Audio / Mic / VGA / Speaker; 20 In-Ceiling Loudspeakers; 2 Wireless Handheld Type Microphone.

AV-ISE SUMMIT

Conference • Seminar • Workshops

FUTURE OF AV IN INDIA

Kelvin Ashby King and Mathew George lead entourage of AV leaders to AV Summit Conference

AV Integrated Systems Expo 3-day AV Summit, will engage audiences, eager to learn more about the AV industry and provide industry professionals an opportunity to disseminate knowledge on latest AV trends and technologies. This three-day summit running on the sidelines of the Expo will host informative and technical Conference and Seminar sessions by thought leaders and experts of the AV Industry, discussing topics of interest and relevance to the AV Industry. AV Integrated Systems Summit platform which aims to be a window to the future of AV in India, will provide equal opportunities to all to participate.

With the rapid scaling up of networked AV technologies, the AV and the IT sectors are ineludibly moving closer to each other. The AV and IT professionals will get an opportunity to understand better technological advancement in order to create a secure, efficient, and productive IP-based AV networks. **Mr. Kelvin Ashby King of T2 Consulting** would be hosting a session on **Convergence of AV and IT** discussing the change in the industry, the direction and skill set for understanding the impact upon network configuration and performance. He would also be shedding light on how IOT will impact AV.

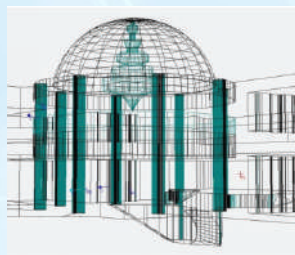


Modern and evolving technology works towards ensuring AV integration and automation can provide end-to-end solution at your fingertips. AV Summit would be holding a session on **Connect, Command, and Control** elaborating more on the management and control of everything from a single platform and automation in workspaces, factories, airports etc.; the in-depth functions of AV Control systems to deliver efficiency and central control,



benefits of software-based AV Control and how integrators need to adapt.

The new-generation buildings – residential, institutional and corporate are required to deliver users increased comfort, improved flexibility, satisfaction and productivity, courtesy a high-tech integrated design. All these buildings generally apply life-cycle analysis to optimize early investments into systems selection,



besides other investments in the building, thereby impacting the selection of audiovisual components. **Mr. Mathew M. George of MMG Acoustical Consultants** will conduct a session on Impact of the Building Design on audio systems selection and will provide insight and case studies into how building design can impact selection of audio systems.

Dynamic development of the construction, manufacturing and technology industry requires new strategies based on integrated solutions for consolidated tasks and objectives. It is paramount for integrators to understand the imperatives of large-scale integration airports, stadiums, etc. The AV Integration Summit will organize a session on **Integrating Large Scale Projects** discussing the frontier end of integration with regards to design and networking.

For several years, large-format displays

and projectors have been indispensable elements in every corporate

meeting room, school classroom and university lecture theatre. With the evolution of technology, interactive displays are now a part of everyday life for millions of people especially in the corporate and educational environment. To get more insight into the latest tech, networks, and application of Interactive displays in education and corporate sector, a session on **Interactive Displays - Technology and Applications** shall be hosted at the summit



The 3-day summit will discuss a lot of other subject matters pertinent to the flourishing industry like AV Over IP solutions, Trends in



Conference room sessions, AV in Education, LED Display Technologies and more. It will also comprise various panel discussions consisting professionals giving lucrative insights of the industry. The AV Summit is going to be the gathering of the brightest mind who are churning the growth of the AV Industry in the country. A conglomeration which certainly shouldn't be missed by any stake-holders of the AV Industry.



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Salient Features :

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- Easy to configure, use and manage
- Affordable
- Seamlessly connects to Wi-Fi
- Supports standard company calendars

Ideal for the corporate, education and government markets, Joan solutions seamlessly integrate with the existing calendar* and Wi-Fi network to improve the way people use meeting spaces.



* Joan supports G Suite (Google Apps, Google Calendar), Office 365, Microsoft Exchange 2010+ (Outlook), iCalendar (.ics) or CollegeNET 25Live.



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