

WORLD IN BRIEF

Twitter inks sports content deals in Asia

SINGAPORE – Twitter has announced nine new sports content partnerships in Asia-Pacific, which will see content from the likes of Astro Malaysia and Eleven Sports Singapore featured on its social media platform.

BT Sport trials HD HDR

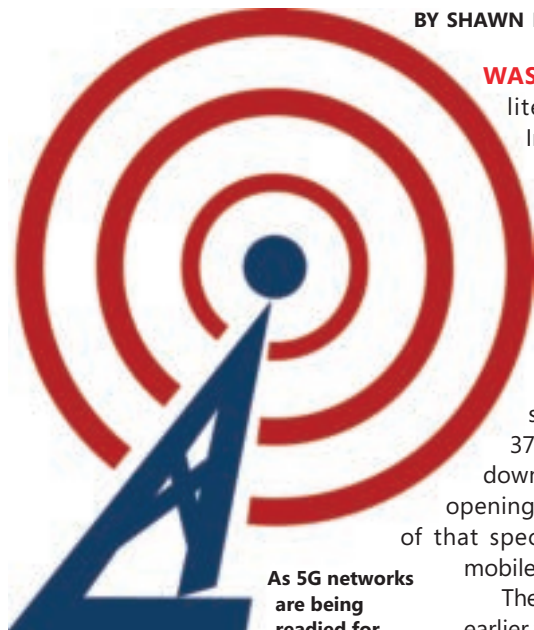
LONDON – For a recent UEFA Champions League football match at London's Wembley Stadium, BT Sports showcased what it calls the "world's first" HD HDR broadcast to mobile, via a 4G network. HD HDR is said to provide a better mobile experience and is less data intensive for both the mobile network and the user's data consumption than 4K/Ultra HD.

'Word of mouth' key to content discovery

LOS ANGELES – A new report from data analytics firm Parrot Analytics has revealed that 'word of mouth' recommendations are still the predominant way new content is discovered, on both offline and online platforms.

Stay resolute in fight to preserve C-band for FSS

BY SHAWN LIEW



WASHINGTON – Satellite service providers Intelsat and SES have announced an alignment on a proposal to the US Federal Communications Commission (FCC), which seeks to "protect the wide array of established satellite services in the 3700-4200MHz C-band downlink spectrum while opening a specified portion of that spectrum for terrestrial mobile use."

As 5G networks are being readied for roll-out around the world, there have been calls to allocate more spectrum for mobile services, including C-band spectrum. However, in regions such as Asia-Pacific, C-band satellite services remain vital in reaching out to large populations.

The proposal, announced earlier this year, builds on an initial proposal put forth by Intelsat and Intel last October, and sets a commercial and technical framework that would enable wireless

operators to quickly access approximately 100MHz of nationwide C-band downlink spectrum in the US, thus speeding the deployment of next-generation 5G services, said Intelsat and SES.

It is widely expected that by 2020 a number of 5G networks will be launched globally — and they will require more spectrum to operate in.

What this new proposal entails is the voluntary clearing of satellite users from the 3700-3800MHz in order to accommodate terrestrial mobile services, an APSCC spokesperson told APB. "Under this proposal, the remaining 3800-4200MHz of the C-band would be secured for satellite use, and fair compensation would be paid to the affected parties.

"This ensures that most of the standard C-band can still be used to support the thousands of US cable and broadcast channels be-

ing distributed via C-band satellites today."

The proposals from Intel, Intelsat and SES are a respond to specific conditions in the US, highlights John Mederios, chief policy officer, CASBAA. These conditions, he explained, include huge geographic scope covered by a single regulator, and across temperate zones that predominately do not experience tropical rains.

"While other regulators will no doubt study the US model when it is fully implemented, it is *not* a template for solutions that could be imported to the rest of the world," Mederios said. "More specifically, it is not a scheme that could be used successfully in the tropical zones of Asia-Pacific."

In this region, C-band satellites continue to play an "irreplaceable role" in ensuring video distribution

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Is IP for real-time media right for you?

SINGAPORE – The transition to 100% IP infrastructure in media facilities is certainly inevitable, said Michel Proulx, media industry technologist and ex-CTO of Miranda Technologies.

This transition, he told APB, is being driven by several factors, including systems used in TV production and playout becoming increasingly software-based. "In some instances, the software systems are being virtualised so that

facilities can be more agile and flexible," Proulx said. "The replacement of SDI by IP makes it easier to transition to software and virtualised software solutions."

He also identified the emergence of "economically priced" 25/100GE, and soon 100/200GE networking products, which make it possible for broadcasters to build signal routing infrastructure that supports both HD and 4K/

Ultra HD (UHD) signals economically.

"The idea of any infrastructure that is format-agnostic and future-proof is of great interest for most broadcasters as the transition to 4K/UHD is likely to occur slowly over the next five to 10 years," said Proulx, while acknowledging that the transition to IP for uncompressed media transport is "still very young".

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Populous APAC nations must hold on to C-band to serve b'cast needs

We should perhaps be grateful that science fiction remains firmly within the confines of a good novel.

For, if machines were to gain a sinister live and attempt to overthrow the human race, we would probably be overrun. By itself, there are already more mobile devices than there are people in the world — and that is a fact.

And these devices are serving myriad functions, including the consumption of video content gaining ever higher resolutions, that is, HD to 4K/ Ultra HD. How, then, do you connect billions of people in the Internet of Things? 5G networks, for many, is the answer. Less certain at the moment is, which spectrum band 5G networks will be run on.

Earlier this year, satellite service providers Intelsat and SES submitted a controversial proposal to the FCC, which essentially pushes for spectrum within C-band to be allocated for terrestrial mobile services, including 5G. Both companies, however, have been at pains to explain that the proposal is not appropriate outside of the US — and they are right.

In a region as diverse as Asia-Pacific, C-band satellite services remain vital in reaching out to populations in countries where ubiquitous 4G networks have not even begun to replace lumbering 3G networks.

Of course, as more governments in the region invest in national broadband infrastructures, this situation is likely to improve. Asia-Pacific will also continue to be one of the fastest-growing regions in the world when it comes to mobile device take-up, as well as the consumption of video content on these devices.

However, when this reaches a critical mass, is there sufficient bandwidth to support the sheer amount of Internet traffic? Speaking with APB,

the Asia-Pacific Satellite Communications Council (APSCC) referred to a study in Singapore that estimated the mobile spectrum requirements for 5G to be closer to 3GHz, rather than the 20GHz projected by some models.

And what about the spectrum that has already been allocated for mobile services over the years? Has this been adequately utilised, before the IMT industry lobbies for even more spectrum?

A pragmatic approach blending moderation and rationalisation is perhaps what is required. As digital communities and economies continue to grow, next-generation mobile networks, 5G in particular, can serve as the connectivity matrix linking the world together.

It will also potentially address the connectivity and latency issues surrounding the mobile viewing experience, as over-the-top (OTT) services — from both traditional and new entrants — continue to draw viewers beyond the TV set.

As to which spectrum band 5G eventually operates in, more suitability studies need to be carried out to access exact requirements.

The final decision, however, should not have an adverse impact on the ability to deliver key broadcast and communication services to large populations who may otherwise be under-reached — regardless if this is via C-band spectrum or those used for terrestrial TV broadcast.

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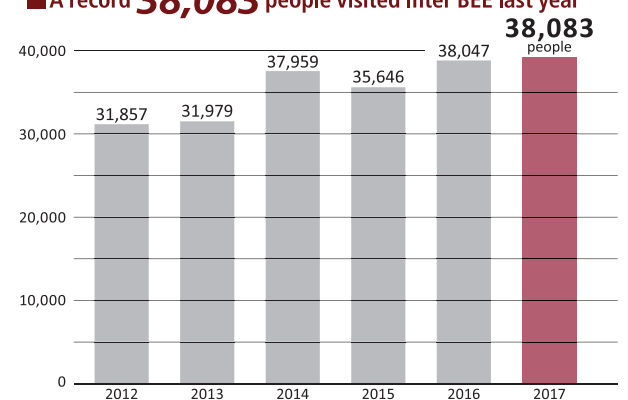
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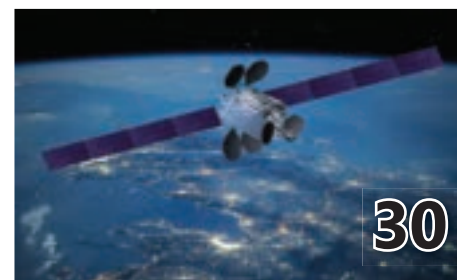


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Beyond Definition

Is consolidation in the broadcast and media technology supply industry now just a fact of life?

BY PETER BRUCE

In February this year, the announcement of the acquisition of Snell Advanced Media (SAM) by Belden perhaps did not come as a huge surprise. The merger with the Grass Valley brand is poised and expected to be formally unveiled at 2018 NAB Show. It was clear to many that SAM was up for sale and Belden's name often came up in the rumour mill; Belden had already made several purchases in recent years, acquiring Miranda in 2012, Softel in 2013 and significantly Grass Valley in 2014. It was apparent that Belden had the cash to go further.

The collection of companies that Belden has acquired may seem a small gathering of non-cable and high IP (intellectual property) value companies for Belden, famous for its wires. But there is much more to these simplified brands.

SAM itself was already a consolidation of Snell and Wilcox, Pro-bel and Quantel. Merging them with Belden's Grass Valley brand will combine them with the already consolidated brands within Grass Valley.

Grass Valley itself has been through a number of mergers and acquisitions, beginning with Tektronix in 1974. It was then acquired by Thomson in 2002. Of which Thomson had already acquired Philips Broadcast, which had already taken in Bosh/Pye TV making BTS, who had already acquired companies such as Alamar. In 2005, Thomson Grass Valley acquired Canopus. In 2009, Thomson sold Grass Valley to a private equity firm, and it was subsequently acquired by Belden in 2014.

In all, Grass Valley now encompasses around 20 originally separate brands as a result of the continuous consolidation that has happened over its many years of broadcast supply.

The newer sub-industry of the OTT world has also gone through its consolidations, which seems to have peaked (to



“The landscape of the broadcast and media industry is changing ...the reality is that this consolidation with mergers and acquisitions will never stop.”

date) with the acquisition of Elemental Technologies by Amazon in 2015. Broadcast suppliers gasped at the rumoured price of around US\$500 million.

In the broadcast RF field, there has been a huge consolidation of the big rivals. In early 2017, Vislink Communication Systems (already merged with GigaWave) was acquired by xG Technology, the parent company of Integrated Microwave Technologies (IMT) — also has already merged Nucomm and RF Central.

At trade shows and conventions today, you look at peoples' name badges to see what the latest company they have merged with is. Consolidation is happening faster and faster, and it seems it will continue at an even faster and unabated rate.

Are you getting confused and losing track? Well, there is more to come.

The landscape of the broadcast and media industry is changing. However, is it contracting? Well, no. The *IABM DC Global Market Valuation and Strategy Report* indicates the valuation is growing — although slowly. However, for those who have followed the report, the services section has been growing every year to the point where services currently account for 56.6% of the broadcast and media industry.

Additionally, when you look at the technology, the real move away from hardware to software and services is happening at a great pace. The new entrants into the supply side of the broadcast and media sector are from both the top and the small ends of the scale.

From the top end, we see these newcomers at the major exhibition and conventions coming from huge conglomerates from the IT and telecom sectors — the multi-billion club, rather

than being from the multi-million club from inside the industry, which was commonplace in the past.

The new owners at the front of the exhibition halls are the likes of AWS, EMC, Verizon, Telstra and so on, who form a new billion-dollar turnover per year club.

The concern might be that, because of their huge potential in the form of financial resources, our beloved broadcast industry will become just a sub- or side-industry to their main activities.

Over the years, we have seen many bigger boys appear at the big shows with great stands and then disappear only a few years later. This time, it may be different though; the digitisation and move to services has meant that their core business and technology complements what they are already doing now in other technology sectors.

At the lower end, an amazing number of small enterprises are springing up, providing niche IP with software solutions that are able to adapt at an incredible rate. The concern with these guys is that often the business model is for them to

be acquired and absorbed into one of the big guys three to four years down the line — effectively becoming an R&D department for the big guys.

So, is it better to absorb an existing company into a bigger one, rather than develop your own solutions?

Well, the reality is that technology is moving so fast that a larger company cannot wait for an unknown outcome from its R&D team to get a solution. Perhaps this is the best way to go; if purchasing a smaller company fast-tracks the solution, then so be it.

For those who understand and track the broadcast and media industry, the feeling may be that several companies could be over-paying for the cost of restructuring the industry — particularly when it comes to the mergers and acquisitions of the medium-sized companies with others that have lived in the same space.

Why are all these mergers and acquisitions happening in the first place?

Firstly, like all companies in the 'high tech' sector, we are transitioning from hardware to software/services. Secondly, the consolidation of technologies from parallel industries is happening at a faster and faster rate. Thirdly, the end-user is having to transition to the new technologies to stay alive.

The recent *IABM End User Survey* shows that technology purchases are focused on the move to over-the-top (OTT) and multi-platform content delivery first on the list, with IP infrastructure third on the list. These technologies are suited to the IT or telecom industry, while the traditional companies are having to consolidate and adapt to address their customers' rapidly changing requirements.

The reality is that this consolidation with mergers and acquisitions will never stop. The rate of change will never be so slow again. **APB**

Peter Bruce is IABM Director, APAC

VIEW FROM THE TOP



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EMA Asia to help ease content delivery woes

SINGAPORE – Vuulr, a global marketplace and digital supply chain platform for the TV and film content industry, is working with the Entertainment Merchants Association (EMA), an international trade body for the entertainment content industry, to launch EMA Asia.

The partnership, which covers China, India, Japan, South Korea and South-east Asia, brings EMA's standards, specifications and best practices to the doorstep of Asian content owners, said Vuulr.

A Vuulr spokesperson told APB: "As described in details within the MovieLabs Digital Distribution Framework (MDDF), EMA has crafted a cross-industry format

specification for delivery of licensing avails specifying how and when content can be presented to consumers.

"This offers a standardised format for conveying avails information from a content licensor to an online platform, including identification of the title and relevant edits of the title, basic metadata to support a buying decision, identification of the licensor or studio, region and time information, and flexible business terms."

The specification, according to Vuulr, is an active collaboration supported and currently adopted by all major Hollywood studios and most large international platforms, and represents the "best and most viable option" for standardising the exchange of licensing avails with Hollywood and other major platforms.

Describing how the specification has already produced "dramatic reductions" in manual reconciliation, the Vuulr spokesperson continued: "In an analysis published

by Google Play, adoption of EMA Avails reduced a 50-hour manual reconciliation to a half hour of processing time for one batch of 1,000 Avails, a benefit that can be replicated across tens of thousands of Avails. This will greatly help reduce costs and efficiency when rolled out to industry players within Asia."

EMA standards and other standards within MDDF will also be built on blockchain technology as part of Vuulr's end-to-end solution, in the process revolutionising title discovery, acquisition, sponsorship, delivery and payment, claimed Vuulr.

"There are a lot of opportunities for blockchain to add value and transform the broadcast and media industry," said the Vuulr spokesperson. "Apart from decentralisation of funds and returns, the most immediate and important benefit for blockchain is the management of rights, as blockchain allows a trustless, immutable and single version of truth to content and its rightful owner."



Proulx: 'Imperative' that TV engineers quickly learn more about real-time media over IP

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The standards that define media over IP are still evolving, he pointed out, while vendor solutions are not yet at the stage of maturity. "In particular, IP-based components and systems are much more complex and require a great deal more 'engineering' and system configuration than their SDI counterparts," said Proulx.

There should be no doubt, he added, that the transition to IP is more challenging from an engineering perspective than the transition from analogue to SDI, or from SDI to HD SDI. "Thus, it is imperative that engineering personnel involved in media learn as much as possible about media over IP, as soon as possible," Proulx advised.

Having spoken at the *Professional Media over IP: Building a future-proof media facility* seminars APB conducted in Hong Kong and Singapore last November, Proulx will be conducting an IP Master Class that will be held in Singapore on June 25 this year.

Entitled *Real-time Media over IP Inside a TV Facility*, the IP Master Class is organised by APB, in collaboration with Ideal Systems — and it is specifically designed to prepare broadcasters for the transition to IP by giving them now

The transition to 100% IP infrastructure is inevitable, suggested Michel Proulx, media industry technologist and ex-CTO of Miranda Technologies. Proulx will be conducting the IP Master Class that APB will be organising in Singapore this June 25.



the knowledge necessary to better understand whether IP is right for them.

Proulx elaborated: "We have been using IP inside our media facilities for many years, but now, as IP is being positioned to replace SDI for the transport of real-time video and audio, IP takes on an even bigger role."

"IP for real-time media brings new standards, new equipment and new practices. Because it is so new, it brings a fresh set of issues and challenges that need to be understood, in order for broadcasters to be ready to consider or deploy IP-based systems."

Some of the topics that will be covered during the IP Master Class include:

- How video, audio and ancillary data are transported using the

new SMPTE 2110 standard;

- What network topologies are available, and which topology applies to which type and size of facility; and

- How IP media networks are controlled and the impact that this can have on operations in a media facility.

"The IP Master Class will also include real-life case studies of major projects that have implemented real-time media over IP, and participants can learn about the challenges encountered and the benefits that have been achieved by people who have actually done it," Proulx concluded.

For more information on the IP Master Class, visit <https://apb-news.com/event/real-time-media-over-ip-inside-a-tv-facility-by-michel-proulx/>.

WRC-19 to examine wide range of new spectrum options in higher frequency band

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— and other essential services — to half a billion homes and businesses, he added.

APSCC members — including both Intelsat and SES — are unanimous in agreeing that the proposal is not appropriate outside of the US, and is not necessary or practical in Asia-Pacific, revealed the APSCC spokesperson.

"Rather, APSCC believes that this US-centric proposal is best understood as a good faith attempt to compromise, given the specific regulatory and market conditions in the US."

At WRC-15, one of the key verdicts passed was to maintain C-band spectrum primarily for fixed-satellite service (FSS). As the International Telecommunication Union (ITU) prepares to re-convene for WRC-19 next October in Sharm El-Sheikh, Egypt, is there a case to be made for more spectrum to be allocated for the IMT industry?

Yes, said the APSCC, but not at the amount being asked for, and especially not in occupied satellite bands.

"We expect mobile consumption to grow — in fact, the satellite industry's investment in current and next-generation high throughput satellites (HTS) is premised in part on that growth," said the APSCC spokesperson. "However, some mobile industry estimates would have you believe that, very soon, the amount of mobile data consumed will be more than if every mobile user on Earth were watching 4K/Ultra HD (UHD) video for 16 hours a day. We do not think that is a realistic projection."

There also remains an under-utilisation of spectrum already allocated to the IMT industry, further dismissing any need to displace satellite services in C-band to satisfy IMT spectrum requirements, said APSCC.

The WRC-19 agenda includes an examination of a wide range of new spectrum options in higher frequency bands whose use was "unimaginable" a few short years ago, but is now becoming technically and commercially feasible, said CASBAA's Medeiros.

He continued: "Indeed, we view the future 5G ecosystem as one where satellites will play an integral role, providing telcos with the ability to roll out 5G across Asia's many nations and diverse geographies, moving huge volumes of data to base stations — whether urban or remote — from which the telcos

can deliver services to customers."

However, there should be no doubt that C-band satellite services remain vital in reaching out to large populations in Asia-Pacific, where mobile networks simply do not exist, or are currently underdeveloped, Medeiros emphasised.

"We urge governments in Asia to focus on sustaining services to those populations too while working together to find different frequencies — outside those used by satellites — to help expand video delivery to urban consumers over 5G networks."

Having confirmed the importance of C-band spectrum for satellite at WRC-15, governments and regulators need to remain resolute and fight to retain that spectrum for satellite, and avoid any new IMT identifications, especially in Asia-Pacific, said APSCC.

About half of the world's satellite cellular backhaul sites are located in Asia-Pacific, and most of them are using C-band spectrum, the APSCC spokesperson pointed out. He also highlighted how C-band is used throughout the region not just for broadcasting, but also to bridge the digital divide by extending the reach of mobile networks to even the most rural and remote locations.

"It would be foolish to cannibalise this vital backhaul spectrum just so those already with broadband can get more broadband."

Asia-Pacific represents a "radically different" spectrum market than is found in the US or Europe, in which frequencies above C-band are dominant.

What does not broach argument is how satellite and terrestrial mobile cannot use the same frequency at the same time, without satellite being "silenced", cautioned Robert Bell, executive director of the World Teleport Association (WTA).



World Teleport Association's Robert Bell: "I would expect satellite operators, telcos and national governments to continue a strong defence of their exclusive right to spectrum at WRC-19."

He notes that because of dense population centres and the presence of heavy rainfall in Asia-Pacific, C-band will continue to be crucial for lifeline telephony, broadband access, TV and radio distribution, as well as disaster response.

Sounding a warning bell to regulators, he cautioned: "Any effort to simply open satellite bands to terrestrial use will produce major service interruptions in a region where C-band is indispensable."

"I would expect satellite operators, telcos and national governments to continue a strong defence of their exclusive right to spectrum at WRC-19."

What's on Screen



Directed by Jeff T Thomas, *The Oath* explores a world of gangs made up of those sworn to protect, and shed light on corruption and secret societies.

■ The Oath marks HOOQ's inaugural into Hollywood Originals

SINGAPORE – HOOQ, a subscription video-on-demand (SVoD) service provider in South-east Asia, has announced its first foray into Hollywood Originals with *The Oath*. The 10-episode series is available on HOOQ 24 hours after the telecast in the US.

Set in Los Angeles, the crime drama dives deep into a world of gangs made up of those sworn to protect and defend. *The Oath* sheds light on corruption and

“police gang” culture by examining secret societies that are nearly impossible to join. Only a selected few make the cut, but once inside, members will do what they must to protect each other from enemies not only on the outside but also from within.

The Oath is directed by Jeff T Thomas, and stars Ryan Kwanten, Cory Hardrict, Katrina Law, Arlen Escarpeta, JJ Soria, and *Game of Thrones* alum, Sean Bean.

■ KIX follows Lupe Fiasco's martial arts journey in *Beat N Path*

HONG KONG – This month, KIX brings hip-hop artiste Lupe Fiasco on a journey from his hometown in Chicago all the way to Shaolin Temple in the documentary series *Beat N Path*.

Beat N Path follows Fiasco as he chases his dual passions for music and martial arts, practising with *kung fu* masters throughout the Middle Kingdom while exploring China's hip-hop scene.

Produced by Studio SV, a production studio founded by Fiasco and marketing and media entrepreneur Bonnie Chan Woo, *Beat N Path* is the studio's first series production since its launch in both Hong Kong and Los Angeles in 2017.



Catch Lupe Fiasco in *Beat N Path* as he blends his lyrical skills with Shaolin *kung fu* actions.

Fiasco added: “*Beat N Path* is a unique Asia-centric journey and story that we feel can strongly con-

nect with a wide audience throughout Asia, who are best connected through KIX.”



Singaporean celebrity Michelle Chia takes on the challenge of penny farthing in Australia.

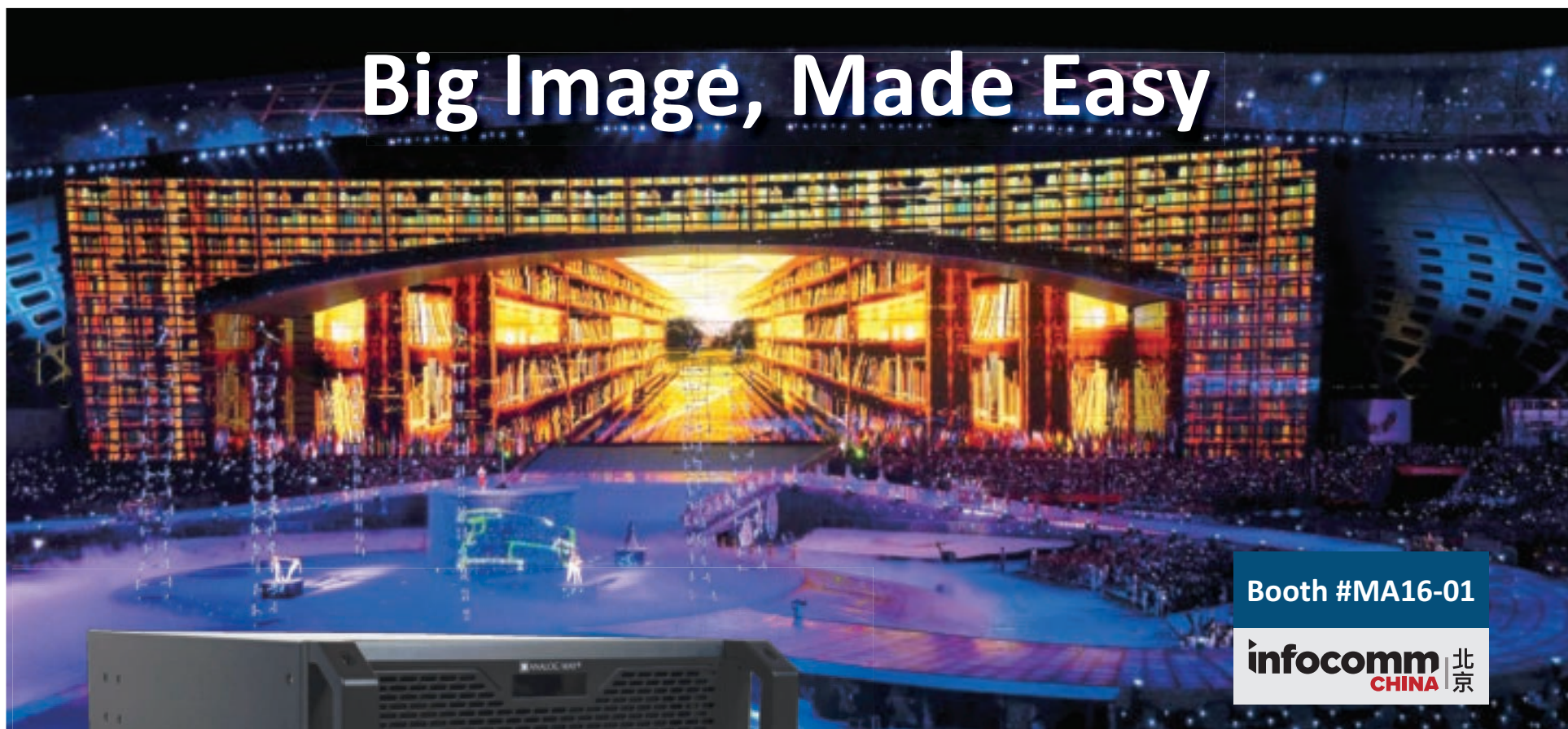
■ It's Singapore versus the World

SINGAPORE – Debuting on Hub E City is *Challenge The World*, StarHub's new fun and pulsating programme that sees a Singaporean celebrity take on exciting, and usually physically, challenging cultural feats around the world.

In each episode, a local celebrity will travel to different parts of the world to complete a mission — ranging from ice swimming in China to tuna toss competition in Australia, and even long boat racing in Thailand — and ultimately bring home the glory.

The celebrities participating in *Challenge The World* include Huang Jinglun, Allan Wu, Michelle Chia and Jeremy Chan, amongst others.

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Rights holders go digital to boost growth

With viewership for sports competitions plateauing and early signs TV rights have hit a ceiling, rights holders are investing in their online content to provide additional forms of revenue and ensure TV audiences remain high. A strong online presence cannot be underestimated; it has been proven to penetrate new markets, generate revenue from digital advertising and acts as a key marketing tool — driving fans towards the linear coverage.

Social media metrics and website traffic are vital to the long-term success of every sports organisation. As always, content is king, but how the content is accessed, published and enhanced with graphics, will determine the success of the online platforms.

While many sports organisations slowly come to terms with changing consumer habits, the National Basketball Association (NBA) has grown exponentially over the past five years and trails only soccer in terms of international popularity. For the 2016-17 season, the NBA hit US\$7.3 billion in revenue, up 21% from \$5.8 billion in the 2015-16 season.

At the heart of the NBA's expansion is a shrewd social media strategy. During the season they publish 15-plus clips per day across all platforms, including match highlights, exclusive 'behind the scenes footage', archive and analysis clips with graphics. Undoubtedly, the NBA has been the most progressive federation for access to players, but it is the analysis clips (see picture), using Vizrt's image-based software — Viz Libero — that drives fan engagement.

Steve Hellmuth, EVP, operations & technology, NBA, said: "We already do business with Vizrt; we use Viz Libero to provide a layer of graphics. Any time people see a video that includes graphics, analytics ... that's what attracts them. That's what takes it from 200,000 views to two million."

3D graphics are used to highlight key moments, deconstruct facets of play or provide a better understanding of a team's strategy. Player and team statistics are inserted into dynamically moving graphics, substantiating and enriching the analysis clips. Furthermore, the 3D flights between broadcast cameras provide an unparalleled



'wow affect'.

Hellmuth continued: "We're in the business of compressing information using a lot of tools, so that people can get more in less time — which is really what it's all about. You don't just want to look at a naked video clip; you want some graphics and analysis."

The results are staggering: they have over 1.4 billion likes and followers on social media, an additional 172 million fans within the past year and the social media views during the 2017 NBA finals were up by 44%. Most of their social media followers are male and aged between 15 and 25, a key demographic for any sponsor (think digital advertising) and most importantly, NBA Pass (an over-the-top platform) or ESPN subscribers of tomorrow.

Many sports organisations are now adopting the same approach and investing in digital content teams. But they are discovering conventional broadcast tools such as linear editing software are not designed for the high-volume, short-form, 'on-the-go' content that social media demands. Viz Story, an easy-to-use Web interface, can create compelling video stories with full real-time, state-of-the-art 3D graphics.

It strips away the complexity of linear editing and allows the user to publish directly to various social media platforms. It is designed to be operated by a journalist or social media producer, without any compromise to high-end 'broadcast quality' graphics, key for sports properties, who spend millions on their branding. □

To find out more about Vizrt's solutions, visit <http://go.vizrt.com/APB>



The National Basketball Association (NBA) is using the Viz Libero image-based software to drive fan engagement.

2018 NAB Show powers what the industry creates and how the world consumes

NABSHOW LAS VEGAS – For media, entertainment and technology professionals looking for new and innovative ways to create, manage, deliver and monetise content on any platform, the 2018 NAB Show is the place to be.

Taking place from April 7-12 at the Las Vegas Convention Centre in Las Vegas, Nevada, USA, this year's show is featuring more than 1,700 exhibitors, who are unveiling and discussing the latest solutions and developments in technologies such as IP, 4K/Ultra HD, high dynamic range (HDR) artificial intelligence (AI) and machine learning, augmented reality (AR), virtual reality (VR), 5G and more.

Shotoku USA marks first anniversary with 'smart' robotic solutions

Commemorating its first year anniversary, Shotoku USA, Shotoku Broadcast Systems' North American operation, is exhibiting an enhanced version of its External Control Automation Interface (ECI).

The upgraded interface incorporates new features that add a layer of intuitiveness and functionality for Shotoku's TR-XT robotic camera control system. Building on the TR-XT's advanced features, including pre-set shot recall functionality, the unit is capable of supporting full joystick trim control to adjusting and restoring the pre-sets as necessary — from the automation system or switcher.

This additional external control, according to Shotoku, also allows shots to be trimmed on-air without the need for a dedicated camera operator via the automation system. The enhanced ECI provides an interface for facility management and control systems (FMCS), enabling the TR-XT to be reconfigured remotely as well.

Shotoku USA is also displaying the SmartPed robotic pedestal, which is designed to



Shotoku's External Control Automation Interface (ECI) is equipped with new features, adding a layer of intuitiveness and functionality for its TR-XT robotic camera control system.

address the creative and commercial demands of on-air live TV environments. The three-wheel robotic XY pedestal features a new height column that does not require pneumatic balancing, and is also equipped with multi-zone collision avoidance and detection systems. In addition, SmartPed offers switchover between local and remote operation, making the pedestal "versatile and easily operated" in any application.

Completing Shotoku's showcase at **booth C9015** is the SmartTrack rail camera system, which supports floor or ceiling operation, as well as a range of height column configurations, in both upright and inverted modes.

Interra Systems adds AI into QC monitoring

Beyond its end-to-end QC and monitoring solutions, Interra Systems is expanding its role in the software-based digital media solutions space through innovations in artificial intelligence (AI) and machine-learning techniques.

For instance, the latest version of Interra Systems' Baton file-based QC solution leverages AI and machine learning-based advanced algorithms, and includes support for the VAST protocol, hybrid QC workflows, as well as enhanced support for high dynamic range (HDR) content and audio detection capabilities. With Baton's new auto-scaling feature, users are able to adjust their Baton system to manage peaks in QC content accordingly.

Also demonstrated is Orion-OTT, a software-based over-the-top (OTT) solution for monitoring of adaptive bitrate (ABR) content. The enhanced version of Orion-OTT features

an edge performance monitor (EPM), which integrates with third-party device monitors to collect quality of experience (QoE) parameters for proactive management of issues.

Orion-OTT also includes a new origin performance monitor for active and passive monitoring of origin servers, with the capability to monitor average response time and bandwidth served, server availability, and HTTP response codecs.

Interra Systems is also showcasing the Orion content monitoring and video analysis system. Designed for IP-based delivery infrastructures, Orion is equipped with features such as extended checks for live monitoring, support for VANC closed captions (SMPTE ST 2038), and the capability to view and monitor VANC EIA-608 and VANC EIA-708 CC data.

Visit Interra Systems at **booth SU7605** to find out more.

Vitec's Litepanels division shining bright at the show

Litepanels, a division of The Vitec Group, is presenting Gemini, a 2x1 soft panel. Equipped with a new firmware upgrade, Gemini offers a variety of cinematic effects such as emergency lights, fire, TV and hue bursts that are customisable and can be saved to pre-sets.

The deployment of Gemini, according to the company, allows lighting professionals to "go bold" by lighting with any colour in the 360° colour wheel and popular gels within Gemini's colour modes. The soft panel is integrated with the Anton/Bauer Cine VCLX battery, and allows users to operate functions of Gemini using its intuitive on-board controls.

Alongside Gemini is the showcase of the Astra family of LED panels. The new Astra 3X and 6X — available in both daylight or bicolour modes — feature a 50% increase in output, making them three and six times brighter than the original Astra.

The Astra Soft Bi-Colour provides diffused lighting for "soft,



Litepanels' Sola 6+ LED fresnel combines the benefits of LED technology with "light-shaping, single-shadow" properties, to provide lighting designers with control over aspects such as focus and intensity.

wrap-around" light quality; and the Astra Bi-Focus Daylight is the newest addition to the Astra family, giving users the ability to adjust from a 48° flood to a 15° concentration of light with the turn of a dial.

Also on display at **booth C6025** are Litepanels' Sola 4+ and Sola 6+ LED fresnels. Combining the benefits of LED technology with "light-shaping, single-shadow" properties of a traditional fresnel, the Sola LED range provides cool daylight illumination with the ability to control both focus and intensity via standard DMX 512 protocol.

Dejero leverages cellular with IP satellite connectivity

With an aim to provide enhanced reliability in situations where cellular networks are congested or cell coverage is limited, Dejero is offering Dejero CellSat, a joint solution with Intelsat that combines cellular connectivity from multiple mobile network carriers with Ku-band IP satellite connectivity.

With CellSat, field crews can focus on capturing live news and events from virtually anywhere, safe in the knowledge that the solution is able to blend with Ku-band IP satellite connectivity to boost bandwidth, says Dejero.

Dejero is also displaying the Dejero GateWay router, which is integrated with cellular connections from multiple cellular providers to create a virtual network. Designed as an in-vehicle mobile connectivity solution, Dejero GateWay is able to facilitate collaboration and integrate workflows, allowing field crews and home-based crews to work under the same central location, virtually. In addition, Dejero's cloud management system enables broadcasters to remotely manage their fleet of routers in the field, and manage data usage and operational costs.



Dejero's EnGo mobile transmitter encodes video and transmits over multiple IP networks, empowering field crews to broadcast live from anywhere around the globe.

Completing Dejero's showcase at **booth C2025** is the PathWay rack-mounted encoders/transmitters and the EnGo mobile transmitters. Designed to be camera- or vehicle-mounted, the EnGo mobile transmitter can be deployed for newsgathering, sports coverage, and live event broadcasting from remote locations.

As for PathWay, it is an HEVC/H.265-capable adaptive bitrate encoder/transmitter packed within a 1U rack-mounted form-factor. PathWay can be installed in newsgathering and remote

production vehicles, or in fixed locations, with the option of blending cellular connectivity with an Ethernet or Wi-Fi connection.



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G&D highlighting 4K/UHD signal switching

Guntermann & Drunck's (G&D) show highlights are revolving around "pixel-perfect" video quality and the switching of 4K/Ultra HD (UHD) resolutions using matrix systems, says the company.

At **booth N3917**, G&D is demonstrating the efficient and flexible implementation of large distributed IT installations. ControlCentre-Digital and ControlCentre-Compact, G&D's keyboard, video and mouse (KVM) matrix switches, provide the backbone of the computer equipment in use and afford producers with flexible and distributed access to remote computers.

The ControlCentre-Compact is available in six expansion levels, provides between eight and 112 ports, and is compatible with the ControlCentre-Digital, as well as end-user devices, making it possible to add new systems to existing infrastructures.

G&D is also highlighting how



G&D is presenting a brand-new KVM-over-IP device at NAB Show 2018.

all its products — with different features and variants

— are compatible and can be combined with each other. For example, the KVM extender DP1.2-Vision can be easily integrated into G&D matrix systems and thus allow the extension and switching of 4K/UHD signals at 60Hz through the matrix. DP1.2-Vision is equipped with G&D's HDIP compression



mode, which is now in Level 3 of its development stage.

HDIP, according to G&D, allows the loss-less transmission of video signals with a resolution of 4K/UHD at 60Hz, with optimum image quality and latency-free operation.

G&D also encourages visitors to check out a brand-new KVM-over-IP device, as the company expands its KVM-over-IP portfolio.

Live production goes all-software with ChyronHego

ChyronHego is introducing new solutions for live production that run on standardised IT infrastructure — either on-premises or in a remote data centre.

CAMIO Universe, an end-to-end, all-software ecosystem for multi-platform delivery, now comes with key updates to all its components. For instance, CAMIO 4.4 brings new features for publishing content straight from the newsroom to Facebook, Twitter and other social media outlets. And with LUCI5, ChyronHego's new HTML5-based LUCI plug-in, producers are able to browse, create, as well as order images and video assets, from CAMIO without having to leave the familiar environment of their newsroom computer systems.

Also on display at **booth SL1208** is LyricX, the next version of ChyronHego's graphics creation and playout solution. An all-new, built-in HTML browser within LyricX streamlines integration with ChyronHego's Live Assist Panels and CAMIO, both of which are HTML-based systems.

Other highlights include PRIME 3.0, the latest version of the company's 64-bit, all-software graphics rendering machine, which includes



An all-new, built-in HTML browser within LyricX streamlines integration with ChyronHego's Live Assist Panels and CAMIO, both of which are HTML-based systems.

tighter integration with the CAMIO Universe workflow, and the ability to deliver 10-bit hybrid log gamma log (HLG) high dynamic range (HDR) output for productions.

For the first time at a major trade show, ChyronHego is also presenting an all-software-based live studio show. At the core of the end-to-end production workflow is the latest version of ChyronHego's Live Composer, a scalable, powerful and intuitive software solution for multi-camera production that allows broadcasters to create compelling live video content in an all-software environment.

GatesAir debuting AES67-compliant AoIP codec



The IP Link 200A is designed to allow broadcasters to interconnect studios and remote locations, including transmitter sites, using the AES67 standard and any of today's encoding algorithms across wide-area IP networks.

GatesAir is unveiling the Intralex IP Link 200A, the company's first AES67-compliant audio-over-IP (AoIP) codec.

The IP Link 200A is designed to allow broadcasters to interconnect studios and remote locations, including transmitter sites, using the AES67 standard and any of today's encoding algorithms across wide-area IP networks.

The IP Link 200A is a hybrid model that interconnects AES67 and analogue/AES3 signals simultaneously, and enables conversion between the two formats. With

dedicated channels for both, users still operating in analogue or AES3 mode have a future-proof path to an industry-adopted AoIP standard, says GatesAir.

Additionally, those operating in mixed mode can convert between the AES67 and analogue/AES3 as required. In any scenario, the IP Link 200A simplifies the cabling and removes limitations on location of the codec, the company adds.

As with other IP Link codecs, the IP Link 200A integrates features that enhance stream reliability and

network security, among other benefits. This includes GatesAir's Dynamic Stream Splicing software, which mitigates IP packet loss and eliminates off-air time through multiple redundant streams. The software borrows data from these redundant streams, which can reside on the same network or separate paths. GatesAir's integration of a firewall and advanced packet filtering capabilities strengthen network security, protecting against outside intrusions to ensure "rock-solid", on-air signal protection.

Find out more at **booth N3703**.

Enhancing workflow efficiency at the heart of Masstech Innovations' solutions

Marking the first NAB Show that Masstech and SGL are exhibiting as Masstech Innovations, the company is showcasing its FlashNet media object storage application, a cross-platform content management system that can be integrated with media asset management (MAM), production asset management (PAM), newsroom control system (NRCS), automation, video server and library systems to enhance media companies' workflow efficiency.

FlashNet can be deployed on-premise, in the cloud, or in a hybrid configuration, and is able to support disk- and tape-based storage independently or in combination.

Designed as a hardware-agnostic solution, FlashNet features automated failover and built-in redundancy, and is further equipped with linear tape file system (LTFS) support to allow tapes to be mounted on a Windows file system for emergency access.

The company is also demonstrating its MassStore media services framework for advanced applications. Packed with a collection of services that supports media management functions, this Masstech solution is able to provide a service orchestration layer to facilitate interaction between



Masstech Innovations' solutions are designed to manage media assets across a wide array of storage systems.

MAM, PAM, digital asset management (DAM), and NRCS solutions and stored media objects.

Besides allowing rapid deployment of customisable workflows, MassStore is integrated with transcoding capabilities, and can be scaled to meet media companies' varying functional requirements, says Masstech.

Find out more at **booth SU2806**.

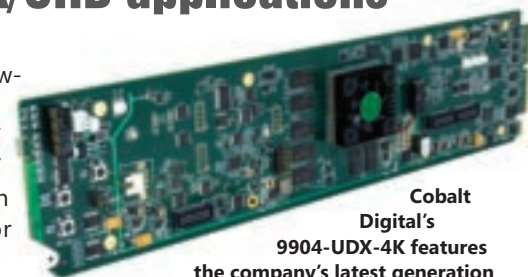
Cobalt rolls out new innovations to support 4K/UHD applications

Cobalt Digital is showcasing the 9904-UDX-4K-12G UHD 12G/3G/HD/SD-SDI up/down/cross-converter, which is now available for shipping.

Equipped with Cobalt's latest generation of advanced image and audio processors for the openGear platform, the 9904-UDX-4K base card provides quad 3G-SDI and 12G-SDI I/O with SDI muxing and demuxing and up/down/cross-conversion. Other options include RGB colour correction and SDR-to-HDR up-mapping via Technicolor's high dynamic range (HDR) Intelligent Tone Management (ITM) processing.

Other highlights at **booth SL6505** include Cobalt's new 9992-ENC-4K-HEVC H.265 streaming encoder, and 9971-MV18-4K series of multiviewers. The MV18 is equipped with 18 4K/Ultra HD (UHD) 12G-SDI auto-detect inputs, which can be scaled as needed across a full 3840x2160 4K/UHD raster output.

As for the 9992-ENC-4K-HEVC H.265, the streaming encoder plat-



Cobalt Digital's 9904-UDX-4K features the company's latest generation of advanced image and audio processors for the openGear platform, and is now available for shipping.

form supports quad 3G-SDI and 12G-SDI inputs, and is integrated with Cobalt's HEVC/H.265 video-encoding technology with audio and video processing features, including frame synching, noise reduction, and advanced audio processing.



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The IP Showcase is returning to the NAB Show, and will highlight the practicality of transitioning to IP. Pictured at last year's IP Showcase is Scott Barella, board member of the Alliance for IP Media Solutions (AIMS), and CTO of Utah Scientific.

IP is ready for prime time

The IP Showcase this year is discussing the potential of IP as a foundation for a more flexible, efficient and creative broadcast industry.

More than 50 manufacturers and eight standards bodies and trade organisations are demonstrating the benefits and practicality of transitioning to IP workflows using the SMPTE ST 2110 suite of standards, as well as the AES67 and AMWA NMOS specifications.

At **booth C12634**, visitors can also learn how to make a transition from SDI to hybrid IP/SDI systems, and on to all-IP — by designing deterministic systems and using new tools for automatic alignment of signals. The IP Showcase is also featuring information on a host of IP reference deployments so that visitors can measure their expectations

against real-world IP installations. A live all-IP studio within the IP Showcase further provides visitors with a first-hand look at live programme production and output using SMPTE ST 2110.

Rounding up the IP experience, the integrated IP Theatre, curated by IABM, is providing educational opportunities through continuous presentations covering the full gamut of knowledge about real-time IP production and intra-facility distribution.

Chris Brown, executive vice-president of conventions and business operations, NAB, says: "With growing participation among vendors, this year's IP Showcase is an ideal venue for attendees to experience firsthand the benefits of real-time IP signal workflows, and how they are advancing content creation and distribution, and the media business as a whole."

Bitmovin showcasing next-gen video encoding and player software

Bitmovin is highlighting its latest video streaming technology, in sync with the latest developments in online video.

For instance, Bitmovin says it delivered the "world's first" AV1 live stream in April last year. At that time, this required more than 200 processor cores to stream, but just five months later, Bitmovin delivered the same demonstration using only 32 cores. AV1 is an open, royalty-free video-coding format designed for video transmissions over the Internet, and is developed by the Alliance for Open Media (AOMedia).

At **booth SU9901CM**, Bitmovin is demonstrating an end-to-end AV1 workflow — from source ingestion and cloud encoding to browser-based playout with Mozilla.

Other highlights include the Bitmovin Player V8, designed to improve performance and feature modularity; and containerised video encoding, Bitmovin's video encoding solution that can be deployed anywhere — public cloud (AWS, GCS, and so on), private cloud (Scality, example2, and so forth), as well as customers' own datacentre.

It all starts from Zero for Adder Technology

Adder Technology is introducing the Zero U, IP-based AdderLink Infinity 100T (ALIF100T) to the US market for the first time.

Calling it the "world's smallest" high-performance keyboard, video and mouse (KVM) transmitter, Adder Technology says the ALIF100T is ideal for broadcast applications where there is pressure for rack space.

Forming part of the AdderLink Infinity solution, the ALIF100T can be easily retrofitted into any existing infrastructure without the need for re-cabling, moving computers or change of racking.

The dongle's small form factor also makes it suitable for outside broadcast (OB) trucks, which have

even less internal space than larger data centres. The ALIF100T, Adder Technology adds, also allows broadcasters to link its OB units together to create a streamlined workspace from just one source.

John Halksworth, senior product manager, Adder Technology, comments: "One of the most common issues our broadcast customers face when looking to migrate to digital is the size of transmitters and lack of space.

"Consequently, this new product will be especially attractive to those looking to upgrade or update their current KVM systems with the AdderLink Infinity range



The Zero U, IP-based AdderLink Infinity 100T (ALIF100T) is the "world's smallest" high-performance KVM transmitter, says Adder Technology.

but are hindered by space issues or the cost of redesigning their current infrastructure."

The ALIF100T, which is on display at **booth SL4227**, uses only 2W, thus generating less heat and requires less cooling. The device can be powered directly from USB, eliminating the need for power distribution units.

VSN presenting new video editing tools for MAM

VSN is bringing an enhanced version of its media asset management (MAM) software, VSN-Explorer MAM to this year's show.

VSNExplorer now incorporates the 100% Web-based editing tool Wedit with brand-new functionalities such as voiceover capability. Wedit's features are also fully available in the cloud to ensure maximum flexibility to users, says VSN.

Wedit is a tool developed in HTML5 that allows journalists and editors to edit videos and prepare them for broadcast from a single and unique interface, without having to switch to another non-linear editing system (NLE).

With advanced editing and voiceover capabilities, users are now able to record voiceover tracks straight to the timeline while previewing the sequence proxy video with frame accuracy. This removes the need to switch to another NLE and enables users to complete their videos solely from the Wedit interface.



Wedit is a tool developed in HTML5 that allows journalists and editors to edit videos and prepare them for broadcast from a single and unique interface, without having to switch to another non-linear editing system (NLE).

With this latest Wedit version, it is also possible to drag and drop any existing audio asset into the timeline, and show the waveform pictures of each audio track to improve the user experience.

At **booth SL8006**, VSN is also displaying the VSNExplorer platform for media and business pro-

cess management. The platform includes functionalities such as a business intelligence layer (VSN-Explorer BI), a specific module for streamlining and speeding up processes in production environments (VSNExplorer PAM), and a module for optimising workflow automation (VSNExplorer BPM).

ABox42 supports operators' 4K/UHD upgrades

With an expanded library of 4K/Ultra HD (UHD) content on the horizon, ABox42 is demonstrating its new M35 Series smart set-top box (STB) that is able to offer media companies an upgrade path to 4K/UHD TV.

Besides supporting both HD and 4K/UHD platforms, the M35 Series also offers content security, allowing operators to meet the requirements of 4K/UHD Hollywood content.

ABox42 is also showcasing a multi-screen IPTV platform which is developed in collaboration with Zattoo, a TV streaming service. Using the joint solution, operators can launch an end-to-end

IPTV multi-screen service, including testing, with built-in subscriber management.



ABox42's M35 Series supports both HD and 4K/UHD platforms, and is packed with content security features to allow media companies to meet the requirements of 4K/UHD Hollywood content.

Furthermore, ABox42 is partnering Singularity in a demonstration which sees the former's STB

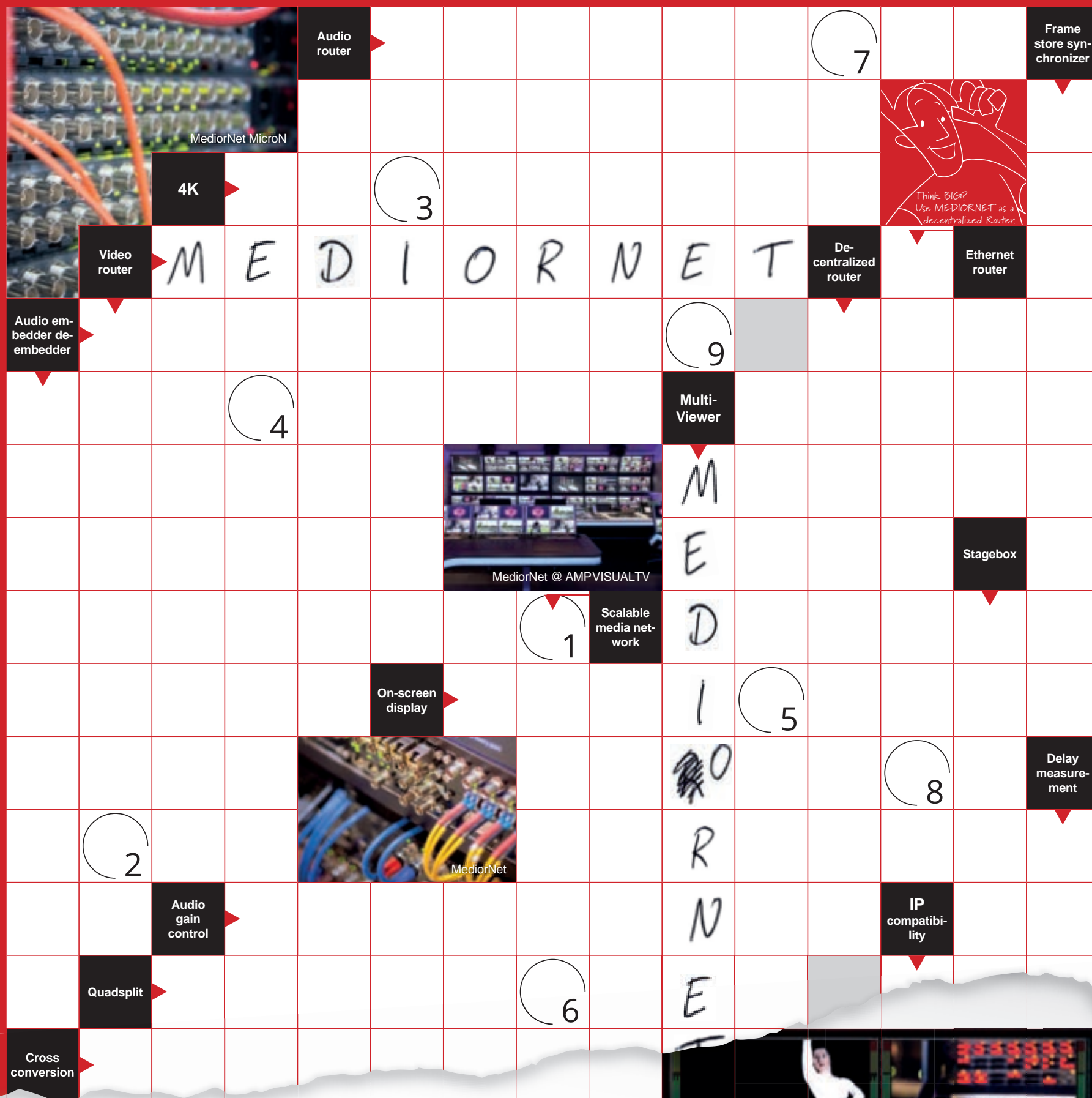
platform — comprising hardware and software solutions — integrated with the latter's HTML-5-based TV middleware. Featuring support for both IPTV and over-the-top (OTT) multi-screen services, the joint solution is packed with features — such as live, catch-up, restart and on-demand TV — enabling operators to remain competitive and keep pace with new technologies in today's pay-TV market.

ABox42 is exhibiting at **booth SU13006CM**.

RIEDEL

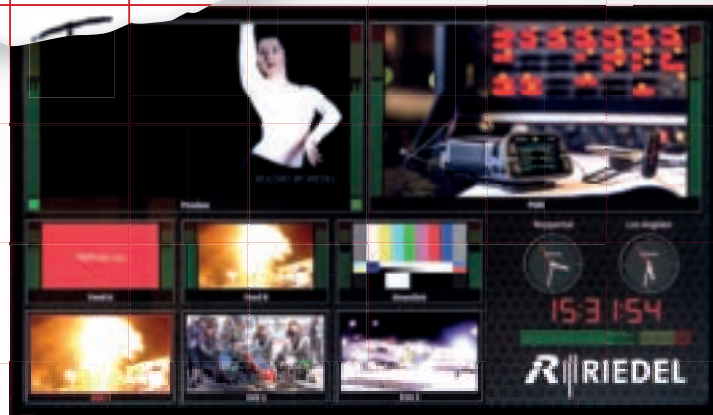
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Enabling futureproof network solutions, the MediorNet platform paves your migration path to IP-based production environments. With modular hardware and feature-driven apps, MediorNet is customizable to your specific application—from multiviewers to large-scale systems including de-centralized video routing.



NEW MediorNet MultiViewer

Hitachi Kokusai's broadcast camera systems now support SMPTE ST 2110

To help broadcasters and content producers navigate the disruptive transition from baseband video infrastructures to IP-based workflows, Hitachi Kokusai Electric America is showcasing its implementation of the SMPTE ST 2110 suite of standards across its range of broadcast camera systems.

Support for SMPTE ST 2110 is planned for all current-model Hitachi HDTV broadcast cameras when paired with new IP-enabled models in the CU-HD1300 family of camera control units. Demonstrations at **booth C4309** display SDI-delivered signals alongside IP-based video transport from the same source, enabling visitors to experience first-hand the video-quality transparency and low latency enabled by Hitachi Kokusai's IP implementation.



Support for SMPTE ST 2110 is planned for all current-model Hitachi HDTV broadcast cameras when paired with new IP-enabled models in the CU-HD1300 family of camera control units.

Hitachi HDTV camera systems will initially comply with the published ST 2110-10 (System Timing and Definitions), ST 2110-20 (Uncompressed Active Video), ST 2110-30 (PCM Digital Audio) and ST 2110-21 (Traffic Shaping and Delivery Timing for Video) standards, as well as the soon-to-be finalised ST 2110-40 specification concerning metadata such as captions, dynamic range and more.

Hitachi Kokusai's IP implemen-

tation will also comply with the ST 2059-2 PTP (Precision Time Protocol in Professional Broadcast Applications) and the AMWA NMOS IS-04 (Discovery and Registration) specification.

Camera output will be delivered over multicast IP as one channel of uncompressed video with two embedded digital audio channels. For Hitachi cameras equipped with high dynamic range (HDR) capabilities, all HDR functionality is available with IP-based transport.

NABSHOW

Reach further, deliver more, says Media Links

Media Links is revealing its latest agile IP infrastructure solutions for flexible, reconfigurable and scalable IP workflows.

Visitors to **booth SU5021** can see how Media Links can take broadcasters beyond the boundaries of traditional video transport services with solutions specifically designed to support interoperable standards, custom network requirements, and to provide a bridge to SDI equipment and infrastructure.

Also highlighted are Media Links' Occasional Use network solutions for broadcasters that

require on-demand access to the same IP network and technologies as Tier 1 fixed services — but only when required.

Now, content providers can offer their customers a service that takes advantage of agile packaged solutions designed to be deployed and re-deployed, so they only need to pay for the bandwidth on the network that is actually used. Customer use cases include: Data delivery to cloud-based production workflows; mission-critical data traffic for live video; and secure data backhaul 'beyond-contribution' services.

These scenarios for Occasional Use network applications typically result in more affordable video-over-IP solutions, and are made possible by Media Links' rugged design and configurable standards-based set-up and support, says the company.

Alongside the technical highlights, this year's show sees the launch of Media Links' Global partner programme with specialist system integrators. The programme is specifically designed to bring Media Links solutions closer to local and certified implementation teams.

Primestream launching end-to-end IP stream workflow

Primestream is demonstrating a new IP stream workflow, the first of its new IP stream solutions.

These are designed to allow users to capture, edit and transcode Web, camera and broadcast sources such as HLS, MPEG-Dash, RTSP and RTMP streams in single or multiple self-contained file formats, and quickly integrate that content through a production, management and delivery workflow.

The new stream recording product further offers flexibility by enabling users to easily manage signal paths through configured pre-sets with defined sources and file formats. Other benefits include the ability to preview live recordings inside a Web browser and edit while capturing streams inside Adobe Premiere Pro with a growing timeline. The solution also provides an HLS live output for streaming to the Web and smart devices.

Primestream's new IP stream technology is powered by a new Media Processing Framework (MPF) and Media Player Recorder (MPR), which together enable native reading and writing of MXF-based and Atom-based files such as MP4 video. This, says Primestream, give professionals the ability to work



Primestream is launching a new end-to-end IP stream workflow.

with leading broadcast file formats such as ProRes, XDCAM, DNxHD and AVC-Intra while leveraging Atom-based file formats such as H.264 for creating proxy assets and the delivery of Web content inside both Fork and Xchange platforms.

Find out more at **booth SL12111**.

Miller displaying Compass^x fluid heads

Miller Tripods is highlighting its Compass^x fluid heads series (CX).

The Compass^x series offers five diverse fluid head models — CX2, CX6, CX8, CX10 and CX18 — all incorporating Miller's CB Plus enabling technology, which the company says takes traditional counterbalancing a step forward. CB Plus features 16 positions of counterbalance with a selection system that is "intuitive, quick and easy to use". The counterbalance radial selector has eight steps, allowing users to quickly find the approximate amount of counterbalance required.

The inherent wide payload range of the Compass^x series is said to provide maximum flexibility when switching cameras or adding accessories. Almost any camera within the payload of up to 16kg can be balanced, no matter how small, Miller adds.

Charles Montesin, global sales and marketing manager, Miller Camera Support Equipment, says: "Miller designed the Compass^x to



Miller Tripods' new Compass^x Fluid Heads Series (CX).

be the most flexible and durable fluid head solution for today's videographers and their professional requirements.

"Following its recent introduction, the arrival of this new series has been highly anticipated by our customers around the world. We are happy to put this product in their hands and provide them with Miller's continued 'right feel' promise."

Miller is at **booth C9521**, where visitors can also check out the arrow^x, Skyline 90, Combo Live pedestal series, AIR fluid head and Cineline 70 solutions.

Edgware presenting ad insertion and CDN selection functionalities



Learn how to build your own TV content delivery network from Edgware.

Edgware is debuting a number of new technical functionalities that have been added to its online TV delivery platform.

For instance, a brand-new dynamic ad insertion product has been implemented as part of Edgware's origin solution. Ad Enabler allows for ads to be inserted into the content stream, accurate to the frame, resulting in a glitch-free transition between programme and advertisement.

Ad Enabler supports MPEG and has been verified with over-the-top (OTT) ad technology solutions provider, Yospace, to allow server-side ad insertion that prevents ad blocking by the end-user and expands possibilities for return on ad spend.

At **booth SU10201CM**, Edgware is also displaying the latest updates to its CDN Selector product. This is an original tool that lets content distributors operating a self-built TV content delivery network (CDN) supplement their TV delivery through third-party delivery networks.

The ability to do this, says the company, further strengthens the case for building your own dedicated TV delivery network. The CDN Selector can be used to deliver TV content over any of the major CDN providers' networks should a self-built CDN network be overloaded or need to reach viewers beyond the already-addressed geographical footprint.

Now, content distributors need only scale their own network for a typical number of end-users, instead of trying to plan ahead for potential spikes in demand.



IHSE highlighting extension and switching of VR/AR signals



In response to growing interest in virtual and augmented reality (VR/AR) systems, IHSE is demonstrating how its Draco keyboard, video and mouse (KVM) solutions allow high-performance computers for VR/AR systems, cave automatic virtual environments and large LED walls to be located at a remote distance of up to 80km.

According to IHSE, only a single Cat X or fibre connection is required to extend a VR/AR system, adding convenience, security and simplified set-up of immersive reality installations. Adding a Draco KVM switch enables users to switch multiple VR/AR headsets in differ-

ent locations to centralised high-performance computers located in a secure room.

IHSE is also highlighting a new series of Draco ultra keyboard, video and mouse (KVM) extenders that can accommodate a full range of video standards, and which is based on the Lici video codec.

Developed in cooperation with the Fraunhofer Institute for Integrated Circuits, Lici provides the highest possible efficiency in video, audio and data transmission, according to IHSE. The Draco ultra extenders on display include models that support HDMI 1.3 (491 series); dual-head, dual-link DVI

(492 series); DisplayPort 1.1 4K30, 24-bit, 4:4:4 (493 Series); and DVI-I (494 series). IHSE is also showcasing the legacy 490 series extender for DisplayPort 1.2 4K60, 30-bit, 4:4:4, which is designed to support future video formats up to 8K.

This year's show marks the North American debut of IHSE's new, freely programmable 444 series Draco keyboard. The rugged, plug-and-play device makes it possible to connect a keyboard, mouse and keypad to a KVM system through a single USB port, without needing an additional HID extension.

IHSE is at **booth SL10216**.



TSL Products' PAM1-IP and PAM2-IP audio monitoring units now include support for SMPTE 2110 and the Ember+ protocol.

TSL Products demos its commitment to open standards

TSL Products is showcasing the latest updates to its range of audio monitoring products, including SMPTE 2110 and Ember+ protocol support, as well as new additions to the MPA1 range.

TSL Products' PAM1-IP and PAM2-IP audio monitoring units now support SMPTE 2110. This, says the company, makes them the only manufacturer of audio monitoring units capable of monitoring uncompressed SMPTE 2110 video and audio streams for deployment in essence-based workflows. Existing PAM-IP customers already working with

SMPTE 2022-6 can easily upgrade their units to SMPTE 2110 in the field. Both the PAM1-IP and PAM2-IP also now support the Ember+ protocol, allowing them to be deployed within IP facilities and OB trucks.

At **booth N5615**, visitors can also check out the latest updates to TSL Products' MPA1 range of audio monitoring solutions. The MPA1-MIX-DANTE and MPA1-SOLO-DANTE confidence audio monitors now support AES67 audio as part of SMPTE 2110, making them suitable for monitoring Dante and

AES67 audio.

Continuing the recognition for enhanced connectivity of its devices, TSL Products' MPA1 audio monitoring range also now supports simple network management protocol (SNMP). According to the company, MPA1 customers can now realise more comprehensive and streamlined workflows while benefiting from smarter and more intelligent integrated solutions. Users can remotely control their MPA1s using TSL Products' TallyMan control system, or any third-party control system supporting SNMP.

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Crystal Vision is showcasing its “flexible” IP platform — the Marble-V1 media processor hardware and the initial six software apps that run on it.

A crystal clear vision for IP

Crystal Vision is showcasing its “flexible” IP platform — the Marble-V1 media processor hardware and the initial six software apps that run on it.

Featuring a CPU/GPU processor, Marble-V1 is a card housed in the Vision frames and offers six bidirectional SDI connections, four 10GbE SFP+ network interface ports, eight bidirectional discrete AES stereo channels and multiple referencing capabilities.

The initial six software apps are IP gateways between SDI and SMPTE 2022 or 2110 for transport of uncompressed video over 10GbE IP networks, and IP-to-IP translators for making adjustments to IP flows — such as network address translation, multicast to unicast address conversion, protocol conversion between ST 2022 and ST 2110,

and the creation of media firewalls.

App features include full VLAN support, clean switching between flows, sophisticated synchronising, PTP support, 10 frames of video delay, unicast and multicast transmission support, signal status monitoring, user definable traffic shaping, and support for AMWA NMOS IS-04 and IS-05.



Designed for smaller projects and ideal for housing Marble-V1, the new Vision 1 1U frame brings further flexibility to the Vision frame system and incorporates the usual Vision benefits, including numerous signal outputs.

At **booth N2516**, Crystal Vision is also showing the keyers, video delays and fail-safe routing switches from its well-established Indigo frame system, including the acclaimed Safire 3 real-time chroma keyer.

Aviwest enhances live video contribution & distribution systems

Aviwest is demonstrating an enhanced version of its StreamHub receiver, decoder and distribution platform. Now HEVC/H.265-compliant, StreamHub can be deployed on-premises or operated as a cloud-based solution implementing an all-new patented IP bonding stack known as SafeStreams v3, which ensures ultra-low latency (down to 300ms) and improved transport protocol reliability using even less data.

Taking the limelight at **booth C2139** is the new AIR Series. Featuring a powerful, ultra-lightweight design, the video uplink systems are designed for on-the-go video professionals, providing them with portable, versatile and affordable solutions.

Integrating best-in-class hardware encoders, the series enables HD and SD encoding, as well as “exceptional video quality”. Featuring up to six network links (four cellular modems, one internal Wi-Fi and one Ethernet), a three-hour internal battery and Aviwest’s SafeStreams technology, the AIR series allows broadcasters to stream live videos and store and forward recorded content, even during unpredictable and unmanaged network conditions.

For 4K/Ultra HD (UHD), Aviwest offers the HE4000 4K/UHD HEVC/H.265 live encoder. Designed to deliver 4K/UHD and HD content over unmanaged IP networks, the 1RU encoder combines 10-bit and 4:2:2 HEVC/H.265 encoding with the latest generation of SafeStreams technology for delivering of live video content over IP at low latencies and bitrates.

Aviwest’s new AIR Series video uplink systems are designed for on-the-go video professionals, providing them with portable, versatile and affordable solutions.

Utah Scientific demonstrates Axon’s IP and 4K/Ultra HD solutions

Utah Scientific is showcasing 4K/Ultra HD (UHD) and Ethernet infrastructure solutions from Axon Digital Design.

These include the Cerebrum control and monitoring system, which can be integrated with Utah Scientific’s S2022 IP router to deliver SDI — including 4K/UHD — and S2022 content, in compliance with the Alliance for IP Media Solutions (AIMS) roadmap for the transition to IP operations.

Other Axon solutions include the SynView multiviewer, which is capable of handling both 4K/UHD and any IP format. Two basic models of SynView are available, each in two versions (SDI I/O or Ethernet

I/O). These versions can be mixed and matched to build a hybrid multiviewer with up to hundreds of inputs and eight 1080p heads (on SDI), or two heads with 4K/UHD resolution.

The system can scale, position, de-embed, overlay and process eight video channels.

Utah Scientific, which is the US distributor for a range of Axon products and production tools, is also highlighting its own 400 Series hybrid digital router, a flexible platform designed to accommodate next-generation IP signals along with SDI. All within a common frame, the 400 Series can handle any number of IP and SDI signal



Utah Scientific’s 400 Series hybrid digital router is a flexible platform designed to accommodate next-generation IP signals along with SDI.

formats along with audio and data. The new SMPTE ST 2110 and ST 2022-6/7 IP formats are supported, along with 3G-SDI, analogue, HD, SD, as well as audio signals including analogue, digital AES3, MADI, TDM and AES67.

Find out more at **booth SL6324**.

Viaccess-Orca discussing cloud and VR

To help shape a smarter and safer digital TV and over-the-top (OTT) experience, Viaccess-Orca (VO) is presenting its latest solutions in content protection, data analytics and immersive video experiences.

At the French Pavilion at **booth SU4517**, VO is demonstrating advanced analytics and monetisation capabilities for its end-to-end, cloud-based TV Platform as a Service (TvaaS). Key highlights include:

- Advanced analytics dashboards, which enable service providers to measure the effectiveness of the various content discovery sources, including recommendations, searches, promotions, and catalogue and apps exploration, to improve and optimise the customer experience.

- A search analysis tool that provides insights into subscribers’ interests, data on how well the current TV offering meets those interests, and feedback on the effectiveness of the search.

- A state-of-the-art advertising



Viaccess-Orca’s Virtual Arena allows customers to deliver both live and on-demand streamed, digital rights management-protected, 360° video content at the highest resolution levels.

ing functionality that allows service providers to manage multiple advertising campaigns from one interface for increased revenue in the multi-screen environment. Using VO’s solution, service providers can insert pre-roll and mid-roll dynamic ads into their video assets across all devices.

VO is also allowing service providers to deploy and manage

immersive video experiences on multiple devices, including virtual reality (VR) devices, through its Virtual Arena solution. Leveraging the VO Player playback infrastructure, Virtual Arena customers can deliver both live and on-demand streamed, digital rights management (DRM)-protected, 360° video content at the highest resolution levels — 4K/Ultra HD (UHD) and above.

Calrec supports remote production

Calrec’s key highlight is the RP1 remote production unit, a live-broadcast product that directly addresses an increasingly prevalent requirement for high-quality content from remote locations.

RP1 consists of a 2U core that contains integrated field-programmable gate array (FPGA)-based digital signal processing (DSP), enabling a console surface at another facility to control all mixing functionality.

The RP1 core manages all the processing for IFB routing and remote monitor mixes, and it does so locally with no latency. This level of integration and remote control makes it simple for any



The RP1 remote production unit is a live-broadcast product that directly addresses an increasingly prevalent requirement for high-quality content from remote locations.

remote mix engineer to set up IFB mixes and eradicates any delay for remote listeners or presenters, says Calrec.

The RP1 core quickly embeds audio into existing video-transport mechanisms, while its modular I/O backbone accepts any of Calrec’s I/O cards. This versatility means the RP1 can connect via analogue, AES, MADI, SDI and the latest audio-over-IP (AoIP) solutions such as AES67, Ravenna and Dante.

At **booth C7408**, Calrec is showing a suite of new features on the RP1. These include a two-band filter and four-band EQ, expander and gate facilities, compressor and sidechain EQ facilities, direct output for all remote faders (up to 5.1 wide), and remote auxes via Calrec Assist.

Other highlights from Calrec include Brio 12, a compact 12-fader audio mixer that is making a US debut at the show.



ABU DBS 2018: Multi-platform delivery will optimise content value

BY JOSEPHINE TAN

KUALA LUMPUR – In its 14th edition, the Asia-Pacific Broadcasting Union (ABU) Digital Broadcasting Symposium (DBS) was held last month in the Malaysian capital, with an aim to address the technologies and techniques essential to develop the appropriate and engaging content required to target both the changing behaviour and demand of today's audiences.

Themed "Enhancing Multi-platform Content", the ABU DBS 2018 focused on the importance of broadcasters embracing new technologies and viewing changes.

In his opening speech, Dr Javad Mottaghi, secretary-general, ABU, highlighted that the momentum of change in the broadcast industry has continuously accelerated, and new technologies and services have emerged in quick succession.

"It is imperative for broadcasters to take a step forward to study and evaluate how these technologies can help to maximise the opportunities they provide before new players move in to interrupt the market. It is also crucial that broadcasters keep enhancing their services to audiences, in order to remain relevant and competitive in this industry," he continued.

Emphasising that content is still king, and will remain as the key element for success in this new media world, Dr Mottaghi urged broadcasters and content owners to understand and take advantage by creating content suitable for consumption across multiple platforms and devices.

He added: "It is also an opportunity to create new business ideas to generate new revenue streams. In particular, rich and attractive content could be used to secure new types of advertising opportunities that suit the mobile and multi-screen devices and viewers."

Having content distributed across multiple platforms is an approach to optimise the value of content, bringing forth a deal of monetisation opportunities for broadcasters to exploit in this space if content is being managed efficiently and correctly, said Straker Coniglio, vice-president, media asset management and digital publishing, Asia-Pacific, Vizrt.

"Broadcasters understand the importance of using platforms such as Facebook and YouTube to increase their presence while expanding their audience reach to a global scale," he commented. "Yet in this competitive landscape, some broadcasters have viewed



The 14th ABU DBS was held from March 5-8 at the Royale Chulan Hotel Kuala Lumpur in Malaysia.



Straker Coniglio, vice-president, media asset management and digital publishing, Asia-Pacific, Vizrt, highlighted that there is a great deal of monetisation opportunities for broadcasters to exploit in the multi-platform delivery space if the content is managed efficiently and correctly.

these platforms as a competitor, especially when comparing the revenue they have garnered in the digital space with their analogue dollars."

Claiming that there is "tremendous growth" in the multi-platform delivery space, Coniglio suggested that broadcasters should focus their attention and resources on creating efficient solutions, and develop new business models in order to capture these revenues.



During the Technologies and Standards: What's New? What's Next? conference track, Dr Peter Siebert, executive director of the DVB Project, shared the latest broadcast developments the organisation has been working on, including the launch of the new DVB-I initiative.

He elaborated: "We have been seeing broadcasters utilising these platforms to direct audiences back to their own resources. For instance, broadcasters have started to launch their OTT channels, websites as well as catch-up services. Hence, we're really starting to see broadcasters attempting to pull the audiences back to their platforms."

"Broadcasters have their strengths in managing their traditional TV businesses. But when it comes to the complexity in managing content across multiple platforms, we as solutions providers are able to make multi-platform delivery more efficient for them, so that they can either reduce costs in creating that content, or create more content with the same

amount of resources."

Following trends and capabilities to access and consume TV services over the Internet, the Digital Video Broadcasting (DVB) has announced the launch of a new initiative — DVB-I (Internet).

The initiative will be led by the new DVB CM-I group, who will look into the commercial requirements for standalone linear TV services over the Internet. Additionally, the CM-I group will address the collection of relevant commercial and technical requirements in order to provide a user perception of a linear TV channel that can be discovered and consumed over the Internet, and by regular TV equipment and user interface.

Calling the new initiative as a

"start of a new journey", Dr Peter Siebert, executive director of the DVB Project, explained that the objective is to bring together the convenience and quality of experience (QoE) of broadcast and over-the-top (OTT) delivery.

This new work item, according to Dr Siebert, will identify additional needs to not only distribute linear TV channel experiences over dedicated access networks such as DVB-S/C/T or IPTV, but also provide such experiences in modern IP-based delivery infrastructures.

He continued: "We have to look at the changing world as well as a changing media landscape. The focus on hybrid interactive solutions is due to the fact that with more IP connectivity available, there is a need for standards which fulfil the requirements of some relevant players in this area."

"There is a need for such standardisation activity that brings together all the different ways in which IP delivery is being done. Although the objective is very ambitious, we see this as our mandate to provide a set of specifications which makes Internet delivery as easy and as the same QoE as our classical broadcast channels."

More than 1,200 participants from 45 countries, representing over 250 organisations, attended the ABU DBS 2018. Building on this success, the ABU DBS will return for its 15th edition next year from March 4-7 in Kuala Lumpur.



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A+E Networks expands digital production footprint into Asia

In an attempt to affirm its leadership position in creating cross-platform content while reaching viewers everywhere they consume content, A+E Networks has launched a digital studio in Singapore — its first digital studio located outside of the US.

As part of the A+E Digital International initiative, the digital studio in Singapore comprises full-service, integrated creative and content creation units that will focus on producing original, premium short- and mid-form digital content assets, themed around the network's brands and its partners.

Prem Kamath, deputy managing director of A+E Networks Asia, told APB: "Content consumption is taking place on two fronts. The first, disruption in distribution, is well accounted for through the various over-the-top (OTT) and digital platforms. However, the second — disruption in content format — is not as widely understood or catered to."

Declaring that the media industry is in the midst of a "short-form content revolution", Kamath pointed out that, globally, there are more than 20 billion short videos consumed on a daily basis. He continued: "Thus, there is a pressing need for media brands like A+E Networks to produce stories in a shorter format, customised for personal screens. That's the opportunity we aim to service with our digital studio."

Founded in 1984, A+E Networks is a joint venture of Hearst Communications and Disney-ABC Television Group, a unit of The Walt



In the business of telling compelling stories, it is key for media companies to respond to consumers' changing preferences in the online space and at the same time create cross-platform content to cater to audiences globally. APB prompts Prem Kamath, deputy managing director of A+E Networks Asia, on how the company's recent expansion into Asia enhances digital content production while creating content marketing solutions to enable brands to build a stronger fan base.



"Content consumption is taking place on two fronts. First is the disruption in distribution, which is well accounted for through various OTT and digital platforms. However, the second — disruption in content format — is not as widely understood or catered to."

— Prem Kamath,
Deputy Managing Director,
A+E Networks Asia

Disney Company. Operating as a global media content company, A+E Networks offers viewers a diverse communications environment ranging from linear channels to websites, gaming, watch apps, subscription video-on-demand

(SVoD) products and educational software.

In Asia, some of A+E Network's brands available include History, Lifetime, FYI and Crime+Investigation. In a bid to respond to the changing pref-

erences of Asian consumers, these channels will be distributed through A+E Network's online platforms in Asia, adding to its OTT offerings, which include long-form content as well.

More crucially, A+E Networks has forged "strong growth" for its brand in the online space since October 2016, with a global reach that has doubled to 331 million and engagement that has grown 196% to 81 million, said the company.

Collectively, A+E Networks added that its brands — History, Lifetime and FYI — have garnered more than 218 million video views and three million watched hours across its digital platforms.

"The digital landscape provides massive opportunities for expansion; however, it is also fragmented and diverse," Kamath added. "Therefore, it is critical to constantly understand the target market sentiments and audience behavioural patterns on content preferences prior to development. With the launch of our creative and

content creation unit, it allows us to focus on the full spectrum of the content creation process to ensure success."

And with this new digital studio in Asia, according to A+E Networks, the company will be able to provide additional services in the form of integrated content marketing solutions to help brands build stronger fan bases and experiences in the volatile online and mobile space.

For instance, among some of the projects A+E Networks has completed is History's digital-first series, *The History Hustle*, a short-form entertainment show featuring Simon Yin. Under the partnership with POSB Bank, a banking organisation in Singapore, special episodes were created to celebrate the bank's 140th anniversary, showcasing the bank's technological advancements through trivia about Singapore.

Kamath concluded: "Traditional and new-age content platforms are complementary but with distinct content environments catering to different audience behaviours. Linear programming provides audiences with a lean-back curated content discovery experience, whereas OTT empowers audiences to take control of the platform through a personalised content experience."

"Over and above our already substantial OTT offerings, we seek to grow and expand our content offerings and distribution through online platforms, thus effectively responding to the changing preferences of audiences' habits."

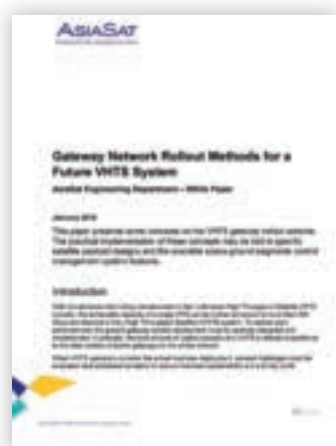


White Paper @ www.apb-news.com

❖ Gateway network roll-out methods for a future VHTS system

With the advanced technology development in the multi-beam high throughput satellite (HTS) industry, the achievable capacity of a single HTS can be further enhanced to more than 500Gbps and become a very high throughput satellite (VHTS) system.

To realise such an enhancement, the ground gateway system deployment must be carefully designed and implemented. In principle, the total amount of usable capacity of a VHTS is directly proportional to the total number of active gateways in the whole network. This white paper from AsiaSat presents some concepts on the VHTS gateway roll-out scheme.



2018 Calendar of Events

■ APRIL

April 5 - 7
VIETNAM INT'L BROADCAST & AV SHOW (VIBA 2018)
Hanoi International Exhibition Center, Vietnam
www.vibashow.com

April 7 - 12
NAB SHOW 2018
Las Vegas Convention Center, Nevada, USA
www.nabshow.com

April 24 - 26
ASIA PACIFIC VIDEO OPERATORS SUMMIT (APOS) 2018
Ayana Resort, Bali, Indonesia
www.visitapos.com

■ MAY

May 15 - 18
KOBA 2018
COEX Exhibition Centre, Seoul, South Korea
www.kobashow.com

■ JUNE

June 5 - 8
IEEE INTERNATIONAL SYMPOSIUM 2018
Valencia, Spain
<https://bts.ieee.org>

June 25
IP MASTER CLASS - AN APB SPECIAL EVENT
Singapore
www.apb-news.com/



June 26 - 28
BROADCASTASIA2018
Suntec Singapore
www.broadcast-asia.com/

June 26 - 28
COMMUNICASIA2018
Marina Bay Sands, Singapore
www.communicasia.com/

■ AUGUST

August 22 - 25
BIRTV 2018
China International Exhibition Center, Beijing
www.birtv.com

■ SEPTEMBER

September 13 - 18
IBC 2018
RAI Amsterdam The Netherlands
www.ibc.org

■ OCTOBER

October 2 - 4
APSCC 2018
Shangri-La Hotel Jakarta, Indonesia
www.apscc.or.kr

October 9 - 11
IEEE BROADCAST SYMPOSIUM (BTS)
Keybridge Marriott Arlington, VA, USA
www.bts.ieee.org/

October 25 - 27
BROADCAST INDIA 2018
Bombay Exhibition Centre, Goregaon, Mumbai, India
www.apscc.or.kr

October 30 - November 1
CASBAA CONVENTION 2018
Hong Kong
www.casbaa.com

■ NOVEMBER

November 14 - 16
INTER BEE 2018
Makuhari Messe, Tokyo, Japan
www.inter-bee.com

APB

CREATION



ARRI launches large-format camera system

To unleash creative freedom for modern production requirements, ARRI has unveiled a complete large-format system based on a large-format 4K/Ultra HD (UHD) version of the Alexa sensor.

Comprising the Alexa LF camera, ARRI Signature Prime Lens, LPL lens mount and PL-to-LPL adaptor, the new system is also compatible with existing lenses, accessories and workflows, according to ARRI. Featuring a sensor slightly bigger than full frame, Alexa LF records native 4K/UHD, allowing filmmakers to explore a large-format aesthetic while retaining the sensor's natural colourimetry, skin tones and suitability for high dynamic range and wide colour gamut.

Accompanying the Alexa LF are 16 large-format ARRI Signature Prime lenses — ranging from 12mm-280mm — fitted with the ARRI LPL mount. A fast T-stop of T1.8 facilitates shallow depth of field and the “smooth focus fall off” gives subjects heightened presence in the frame.

Optimised for large-format sensors, the new LPL lens mount has a wider diameter and shorter flange focal depth, allowing the ARRI Signature Primes and all future large-format lenses to be small and lightweight, with a fast T-stop and high-quality bokeh.

A PL-to-LPL adaptor also offers backward compatibility with all PL mount lenses, whether Super 35 or full frame.

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Camera Lenses

PANELLISTS



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Mike Whittaker
Executive Vice-President
and CTO, Asia-Pacific and
the Middle East,
Fox Networks Group Asia

It's live ... and it's in 4K/Ultra HD

While the launch of 4K/Ultra HD (UHD) channels may currently be restricted to a handful of countries in Asia-Pacific, 4K/UHD is beginning to establish itself as a plausible production standard. **Shawn Liew** finds out more.

There has been a marked uptake in the number of operators running 4K/Ultra HD (UHD) technology trials, and 4K/UHD is establishing itself as the production standard, says Fintan Mc Kiernan, CEO, Ideal Systems, South-east Asia.



With many countries in Asia-Pacific yet to complete the transition from analogue to digital broadcasting, 4K/Ultra HD (UHD) may appear to be a luxury, rather than necessity, for many broadcasters in the region.

Not so, for Shanghai Media Tech, which earlier this year, chose Grass Valley to provide a total 4K/UHD IP solution for its outside broadcast (OB) and electronic field production (EFP) systems.

Somu Patil, vice-president, sales, Asia, Grass Valley, believes that there is “significant interest” in 4K/UHD in Asia-Pacific, particularly for live production requirements. He tells APB: “Specifically in China, most of the recent large-scale projects have gone for 4K/UHD solutions. SMG, for instance, believes that any future sports production will be based on 4K/UHD.

“Unlike in the past, when 4K/UHD production was only for specific events or games, and HD coverage was the general requirement, the approach has changed now.”

According to Patil, Grass Valley is now the leading 4K/UHD solution provider in China, with the company providing an end-to-end 4K/UHD solution that includes camera, switcher, router and infrastructure based on IP.

Moreover, interest has not been

restricted to China, as he describes: “Some of the recent projects we have completed in Singapore, Malaysia and India have either been 4K/UHD or 4K/UHD-enabled. Looking forward, we are expecting a rise in uptake of 4K/UHD and high dynamic range (HDR) in both sports and entertainment production.”

There has been a “marked uptake” in the number of operators running 4K/UHD technology trials, observes Fintan Mc Kiernan, CEO, Ideal Systems, South-east Asia.

Another IP 4K/UHD OB truck making its rounds in Asia-Pacific belongs to Chinese Internet company Tencent, and which was built by Ideal Systems in 2016.

Mc Kiernan adds: “4K/UHD is establishing itself as the production standard, and this will gradually change existing workflows to slowly accommodate 4K/UHD further and further downstream from initial capture.

“Facilities who are still working with HD today are aware that 4K/UHD is on the horizon and are starting to plan for 4K/UHD-ready infrastructure.”

And as the volume of 4K/UHD smart TV sets sold in markets such as Hong Kong and Singapore continues to increase, Mc Kiernan expects over-the-top (OTT) providers to widen their 4K/UHD offerings; for traditional pay-TV

operators, however, the expense of rolling out 4K/UHD set-top boxes may slow down 4K/UHD offerings, he adds.

As for live 4K/UHD production, Mc Kiernan advises: “For 4K/UHD in live production, compression as early as possible in the content workflow chain will be the way to go. New compression algorithms reduce bandwidth by orders of magnitude — with little loss of quality.

“In live production, environmental factors are a concern; compressed 4K/UHD over IP is much more resilient than 4K/UHD over SDI on ganged coax. The losses introduced with inline compression are trivial and enable 4K/UHD production to be rolled out into existing 10G infrastructure.”

Mc Kiernan is also looking forward to the roll-out of 5G mobile services, which he believes will herald a new age in bonded cellular technology being able to cope easily with remote 4K/UHD acquisition. “I think this will be a real game changer, especially if camera manufacturers start to put 5G modems into next-generation 4K/UHD cameras.”

For Grass Valley, the answer to live 4K/UHD production lies in IP. Patil explains: “Bandwidth and distribution costs, and not so much of storage, have been major reasons for many of our customers to either delay the decision or scale down their 4K/UHD operations.”

IP will form the backbone of live 4K/UHD production workflows

The realisation of 4K/Ultra HD (UHD) workflows in live production settings has provided content producers with more control and increased freedom in the pursuit of “immersive and stunning” footage, said Hiroyuki Takahama, assistant general manager, content creation solutions marketing, Professional Solutions Company (PSAP), Sony Corporation of Hong Kong.

Speaking with *APB*, Takahama also identified some of the challenges associated with 4K/UHD live production. These include:

- The need for a scalable and flexible remote infrastructure that is cost-effective.

- A sturdy and reliable network infrastructure that allows 4K/UHD content to be captured and distributed in a live environment.

- The availability of equipment and

workflows that integrate with existing production infrastructure and accessories.

■ The capability of real-time conversion into numerous broadcast and delivery formats.

Takahama continued: “At Sony, we understand the true value and possibilities that 4K/UHD brings to viewers in a live setting. In order to accomplish the full functionality of 4K/UHD, content producers can turn to IP as the backbone of their live production workflow. This results in a thriving ecosystem that is driven by truly open standards, and promotes seamless inter-working across all aspects of the live production workflow — now and into the future.”

And Taiwan was where Sony was recently involved in a number of 4K/UHD projects. For the 29th Summer Universiade held from August 19-30

in Taipei, Sony worked with Infinity Multimedia Production to realise “true 4K/UHD live feeds”, Takahama revealed.

A total of 21 units of 4K/UHD-ready cameras from Sony were used to shoot the opening and closing ceremonies of the games in 4K/UHD 60p, a “first” for Taiwan’s broadcast industry, according to Infinity Multimedia Production.

Sony also recently worked with the Taiwan Public Television Service Foundation (PTS) to integrate Sony’s IP Live production system into the heart of PTS’ IP 4K/UHD outside broadcast (OB) truck.

“At Sony, we view IP as a key enabler, allowing content producers to change the way they produce and deliver content,” said Takahama. “With the rising adoption of IP, the technology is an operational reality in live 4K/UHD production environments globally. We



Sony cameras were used to shoot the opening and closing ceremonies of the 29th Summer Universiade in Taipei last year in 4K/UHD 60p.

believe 4K/UHD over IP is the future, because it is inherently future-proof, and delivers tangible cost and efficiency benefits for leading content producers worldwide.”

With the ratification of the first standards in SMPTE 2110, things have started to pick up, says Patil, although he believes cost will continue to be a concern in developing countries. “When the 4K/UHD requirement is mandatory or delivers significant benefits to the viewers in these countries, they are offsetting the cost by putting huge pressure on equipment pricing.”

With the acquisition of Snell Advanced Media (SAM) by Grass Valley’s parent company, Belden, and the subsequent product integration, expect Grass Valley to be even more efficient in spreading costing across multiple products, according to Patil, who also reveals that replay systems will now be a “significant addition” to Grass Valley’s offerings.

One company that is paying particular attention to signal processing requirements for 4K/UHD productions is Lynx Technik, whose greenMachine titan platform with 12G processing is now shipping. greenMachine titan is a four-channel hardware device that provides 12G processing, as well as the ability to convert between single-link 4K/UHD video (12G) and quad-link 4K/UHD video (4x3G).



Seen something wonderful? Joehan Tohkingkeo, Asia regional sales director, Lynx Technik, highlighting how the company’s greenMachine titan is equipped with the signal processing needs of 4K/UHD productions, and more.

Joehan Tohkingkeo, Asia regional sales director, Lynx Technik, adds: “The flexibility of greenMachine gives broadcasters the edge to compete in today’s marketplace, even if they are not working in 4K/UHD yet. They can always get a titan with 4K/UHD options, so when they are ready for 4K/UHD, they just need to download the apps to support a 4K/UHD workflow.”

titan, he describes, is essentially a single box that can manage up/down/cross-

conversion, frame synchronising, fibre-optic transmission, as well as embedding and de-embedding of audio. “We are also hearing customer feedback on what exactly they need to make things easier for them, and will add more features to titan in time to come, in order to meet our customers’ requirements in the 4K/UHD arena.”

As for the uptake of 4K/UHD in Asia-Pacific, Tohkingkeo identifies Japan, South Korea, China and Australia as countries that are leading the way. For many other countries in the region, 4K/UHD adoption is still at a very preliminary stage, with cost being a key factor. “I would say price point is the main consideration because everyone is looking at their budgets and 4K/UHD encompasses a lot of factors, including content.”

He continues: “Everybody expects to enter the 4K/UHD arena that offers affordable pricing. In the broadcast industry, I always try to say that every spec has a

price tag — you can’t have the best spec at the lowest price.”

Earlier this year, Lynx Technik also announced its membership into the Alliance for IP Media Solutions (AIMS), which continues to push towards IP interoperability and the adoption of common standards. Tohkingkeo concurs that the broadcast industry is moving towards IP. The challenge, he cautions, is doing it right, because there are many considerations in terms of bandwidth, redundancy and security.

As to whether IP or 12G-SDI is better suited for 4K/UHD, Tohkingkeo emphasises: “For every technology decision made, there is a price tag to it. What kinds of budget do broadcasters have, and how much are they willing to pay? Technology crossroads are always challenging and, of course, the bigger companies play a part, especially the manufacturers, as well as the end-users themselves. “At the end of the day, it is still about affordability, availability of the products, and how easy it is for broadcasters to embrace the technology.”

Rather more bullish about the prospects for IP is Ideal Systems’ Mc Kiernan, who declares: “12-SDI for 4K/UHD is a temporary solution while IP gets out of the starting blocks. So, investment should be expendable when IP is ready to rumble.”

Sharing Mc Kiernan’s optimism is Grass Valley’s Patil, who cites the example of China, where he says the prevailing trend favours the adoption of IP instead of 12G-SDI. “In Asia-Pacific, only Japan and South Korea have shown a particular interest in 12G-SDI,” he adds.

Any conversation surrounding 4K/UHD will also perhaps, inevitably, include HDR, which Patil says gives better pixels and produce “stunning results” in 4K/UHD. As to whether HD + HDR can be a viable option for broadcasters, he responds: “Well-produced HD in HDR is a really good solution. However, staying with HD infrastructure and thinking it is easy to just start using HDR is a mistake, especially in live production.

“There is a new skillset that needs to be learnt, especially in how cameras are set up and the lighting requirements to get the best out of HDR.”

HDR opens up new creative possibilities for immersion that just by increasing pixel density cannot achieve. What is holding the technology back, suggests Ideal Systems’ Mc Kiernan, is the multitudinous standards available. There is Dolby Vision, a proprietary HDR format; and HDR10 and HDR10+, the latter building out on the former and is supported by the newly formed HDR10+ Alliance comprising of Amazon, Samsung, Panasonic, 20th Century Fox and Warner Bros. There is also Hybrid Log Gamma (HLG), which is jointly developed by the BBC and Japanese public broadcaster NHK.

Mc Kiernan says: “The range of current standards is giving manufacturers a lot to think about in terms of the creation of HDR equipment and solutions to support HDR workflows, conversion of standard dynamic range (SDR) to HDR, HDR editing and colour correction, as well as HDR playout and monitoring. So, watch this (colour) space!” **APB**



Grass Valley provides an end-to-end 4K/UHD solution that includes camera, switcher, router and infrastructure based on IP. One of its recent customers is Shanghai Media Tech, whose new IP 4K/UHD OB truck is equipped with GV equipment.



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New flowtech tripod transforms workflows at Singapore's Zake Productions

BY ZAVIER OW AND KEEFE CHAN

At Zake Productions, our team of never-say-die professionals is always looking for better and more innovative ways to tell a story. We are all passionate about the art of videography, and that is because our craft is much more than a job — it is what defines us. There are so many beautiful moments in life, and all we have to do is capture them. But we need the right tools for the job.

Finally, the right tripod for our team

In a nutshell, flowtech is an all-new, carbon-fibre tripod system that features incredibly fast-to-deploy legs, distinctive quick-release brakes, and easily adjustable levers for almost-instant set-up in any type of remote production environment. These features mean all three legs can be deployed simultaneously and adjusted automatically to the ground's surface, eliminating the need for operators to bend over and manually adjust multiple brakes on each leg.

Prior to getting the flowtech, we had been putting off purchasing a tripod of our own and instead were having to rely on either rented or borrowed equipment. On most of our jobs, we operate as a small crew, and factors such as weight and speed of set-up are important.

As soon as we heard about flowtech, we knew we had to have one in our operation. Today, we use a flowtech 75 tripod equipped with a Sachtler FSB-8 camera head, and it has turned out to be the perfect solution for

capturing 4K/Ultra HD (UHD) footage with our Ursa Mini 4.6K camera.

The flowtech in action

So far, we have used the flowtech 75 on a wide range of productions, including corporate shoots and commercials, and we are now in the midst of shooting a feature-length documentary. We use a two-person crew on most of our projects; therefore, speed and ease of set-up are absolutely essential. One great feature of the flowtech is the ability to adjust it instantly to heights as low as 26cm (10 inches) and as high as 153cm (60 inches) without the detachable spreader, and up to 157cm (62 inches) high with the spreader.

This means that instead of having to resort to shorter camera supports like "high hats" and "apple boxes," we can just leave the camera on the flowtech to accommodate any height we need. The flowtech hinge lock mechanism, with only one easy-to-reach latch per leg, is a huge improvement over the knobs you have to turn on a more conventional tripod. You never have to move your hand away from the latch to raise or lower the tripod, and a simple lever makes attaching and detaching the feet super easy.

The flowtech's extremely light weight is another huge benefit, as we move around a lot during a typical production. Instead of having to rent a tripod in a destination country, this tripod is light enough to fly with us to just about any location.



Zake Productions has used the flowtech 75 tripod on a wide range of productions, including corporate shoots and commercials.

The best tool for the job

Put simply, no other brand of tripod comes close to the sleek and lightweight flowtech.

Our mission at Zake Productions is to deliver the highest-quality video production possible, regardless of how crazy or surreal the idea might be. With tools like

flowtech bringing greater ease and flexibility to the job, we are free to realise our clients' vision in the most creative manner possible.

Zavier Ow and Keefe Chan are co-owners and directors of Zake Productions, a Singapore-based video production company.

TVI Portugal installs Riedel Artist comm ecosystem

As part of a facility-wide modernisation programme, TVI Portugal has installed Riedel Communications' Artist digital matrix intercom system, which operates with an existing conference system to allow for communications across three fibre-connected studios on-site and via interruptible foldback (IFB) connections to different external locations.

The Riedel system is deployed across TVI studios dedicated to news, virtual production and entertainment, and the three areas are linked by centrally and directly managed IFBs and mix-minuses with 2x39 simultaneous direct inputs from three different consoles (direct outs and mix minus) being used to create feeds.

Working with this Artist set-up, TVI staff in both audio and master control can take advantage of time-saving features, including presets that recall snapshots of frequently used system configurations. Artist not only simplifies management of fibre lines between the studios but

also serves as an audio router, equipped with convenient automation capabilities, for the 48 VoIP lines that facilitate guest commentary and live call-in contributors to TVI news programmes.

TVI put the Artist to its first major test for coverage of Portugal's national elections, a huge show incorporating 37 concurrent IFBs to different points in the country. As it expands its channel offerings in Portugal and beyond, the broadcaster plans to continue modernising and upgrading its communications capabilities with further deployments of Riedel gear.

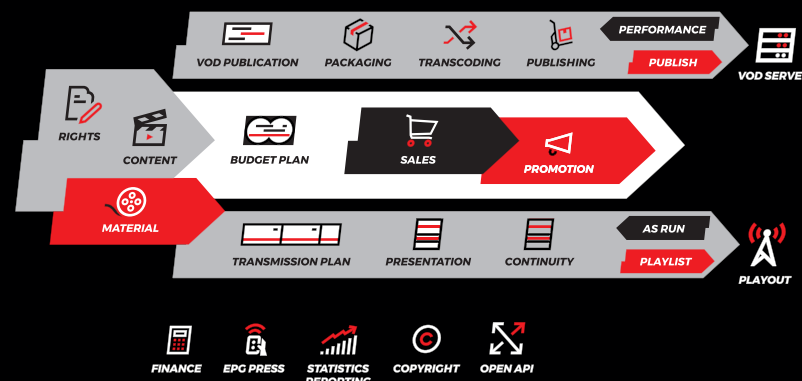
Maribel Roman, sales manager for Southern Europe, Riedel Communications, said: "This project at TVI truly showcases the power and flexibility of the Artist communication ecosystem. With a client who knows exactly what they want and Riedel technical staff and integration partners who are intimately familiar with the capabilities of the platform, almost anything is possible."

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Shotoku partners Magna Systems in ANZ region

Magna Systems has entered a partnership with Shotoku Broadcast Systems. Under the new deal, the Australian systems integrator will bring all Shotoku's solutions, including robotic, AR/VR and manual camera supports, to Australia and New Zealand. This alliance, according to James Eddershaw, managing director of Shotoku, will also strengthen the company's presence in the region.

Pebble Beach Systems makes key executive changes



Pebble Beach Systems has named David Russin (pictured) as the company's vice-president of sales. Having previously held positions at

Broadcast, Omnibus and Masstech, Russin brings more than 35 years' experience in selling automation, automated workflow and infrastructure solutions to North American broadcasters. Pebble Beach Systems has also hired Robert Amoroso as sales engineering manager for North America. Prior to joining Pebble Beach Systems, Amoroso managed the pre-sales engineering at Leitch/Harris for 14 years where he collaborated with solutions architects and applications specialists for master control and newsroom solutions.

Next Issue @ Management

Production Switchers

PANELLISTS



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Persistent digital piracy calls for new approaches to content security

Piracy, an illegal act of content distribution prior to release, is one struggle that media companies have been combating against since the advent of the Internet. And in the current converged landscape between linear TV and online video, media operators are finding it necessary to introduce new security measures as a way to safeguard revenues, as **Josephine Tan** discovers.

In today's digitally disrupted market, traditional broadcasters and service providers are faced with intensifying competition and business transformation challenges. And in facing this "perfect storm" of slowing growth, the pace of change shows no signs of slowing down, the Pay-TV Innovation Forum pointed out in its white paper, *The Global Pay-TV Innovation Landscape: Industry Perspectives On A Year Of Change*.

Some 82% of executives interviewed by the Pay-TV Innovation Forum agreed that the competition in the pay-TV industry is set to increase over the next five years, and 71% believe that service providers will struggle to grow their business during the same period.

Three key challenges facing the industry worldwide, according to the 2017 report, include the proliferation of cheaper over-the-top (OTT) services, changing consumer behaviour and demand, and the rise of content piracy, noting for example that 67% of executives agreed that the competition from subscription video-on-demand (SVoD) services will have a negative impact on pay-TV, resulting in lower prices and increasing churn.

Launched in 2016, the Pay-TV In-



To combat illegal downloads, copyright infringement, and piracy in the online streaming space, media operators will have to reinvent their content security strategies to find the best approach in protecting their revenues and filmmakers' works.

novation Forum is a global research programme developed by Nagra, a Kudelski Group company, and MTM, a research and strategy consulting firm, designed to explore and catalyse innovation across the pay-TV industry.

Stephane Le Dreau, senior vice-president, regional general manager, Asia-Pacific, Nagra, tells APB: "At Nagra, we believe that we are entering what we call the 'post-OTT era' — a world where consumers have more control to pay for and consume the content they love, when they want it, on the device of their choice. It is also a world where traditional linear and video-on-demand (VoD) content are just seen as a combined source of 'great content' by consumers, blurring the lines between online video and linear TV."

Another research paper, entitled *Television Tribes*, which is commissioned by Nagra in partnership with a UK-based TV industry research firm, Ampere Tribes, reflected that the combined TV and video market is "growing positively", Le Dreau says. This is despite the slowdown in the growth of traditional TV services, as well as the emergence of a new and more

segmented TV consumer market.

He continues: "The implications of these changes are significant for content creators, programmers and distributors. There is a real risk that digital transformation will lead to market disruption in several regions if value chain incumbents do not adapt fast enough."

"Yet, broadcasters and pay-TV providers are in a position — with strong brands, broad content offerings and large audiences — to keep their roles as the aggregator of choice for consumers. To succeed, as our research showed, operators will need to keep innovating in a much more agile mode."

Scot Mason, senior staff solutions architect, Asia-Pacific, ARRIS, agrees on Le Dreau's point on the convergence between linear and VoD content, and emphasises that the advent of OTT platforms has caused a "partial fracture" of the relationship between traditional video providers and their customers. He explains: "Previously, service providers enjoyed a near monopoly, which enabled them to deliver previously negotiated content packages to their customers via the preferred delivery platform."

"However, OTT solutions have enabled non-traditional video service providers, such as content creators or aggregators, to directly engage with customers. These non-traditional content providers have now redefined themselves to behave as both content providers and direct competitors to the traditional operator."

While this may seem paradoxical, he adds, it also demonstrates a "symbiotic relationship" for both parties in many cases. For instance, a number of media operators in Asia-Pacific have either augmented or enhanced their traditional content offerings by integrating their platforms with non-traditional video service providers, or have developed an OTT app to enhance their current consumer experience.

Fundamental to the success of non-traditional content is advanced rights management and the Common Encryption (CENC) model, Mason suggests. "Solutions such as the ARRIS MultiTrust Advanced Rights Manager bridges

PHOTO CREDIT: ISTOCK, GETTY IMAGES

multiple content security solutions, including conditional access and multi-vendor digital rights management (DRM) solutions, while CENC details the standard encryption and key mapping techniques used to store the DRM-related data for one or more DRM technologies with the compressed audio/video data."

Designed as a pay-TV management platform, ARRIS MultiTrust Advanced Rights Manager allows multiple content protection technologies to be managed from a single set of interfaces. This, according to ARRIS, provides operational savings by limiting the number of integrations to back-office management systems. Moreover, ARRIS MultiTrust Advanced Rights Manager is equipped with the ability to introduce additional security mechanisms, thus providing recovery and migrating options for long-term future-proofing.

"The ability to manage multiple DRMs is critical because most browsers or other devices will only support one DRM aspect, making multi-DRM support a necessity for most video providers," says Mason. "The net effect is that these non-traditional operators are able to securely distribute content to the consumer, with or without a traditional operator. The multi-trust solution can be integrated with a traditional operator's content management and subscriber management system to manage entitlement where content aggregation is required, or can be used directly by the non-traditional operator to support secured content to a consumer."

Scot Mason, senior staff solutions architect, Asia-Pacific, ARRIS: The advent of OTT platforms has caused a "partial fracture" of the relationship between tradition video providers and their customers, as "these non-traditional content providers have now redefined themselves to behave as both content providers and direct competitors to the traditional operator".



Specifically on piracy, the Pay-TV Innovation Forum's research found that 50% of executives believe content piracy will lead to "greater pressure" on the industry over the next five years, with online streaming, peer-to-peer download and IPTV piracy cited as the most important forms of piracy affecting service providers and content owners today.

Nagra's Le Dreau elaborates: "With the rise of online streaming piracy, we see higher risks for the business models of the entire content value chain players. Nobody wants to see what happened to the music industry be repeated for video content. This means that defeating piracy through active security, at every step of the production and distribution process is key."

Piracy is certainly not going away, reinforcing the fact that content protection is as important as it ever has been, declares Petr Peterka, CTO of Verimatrix.

He elaborates: "Pirates are actually getting more sophisticated with their attacks,

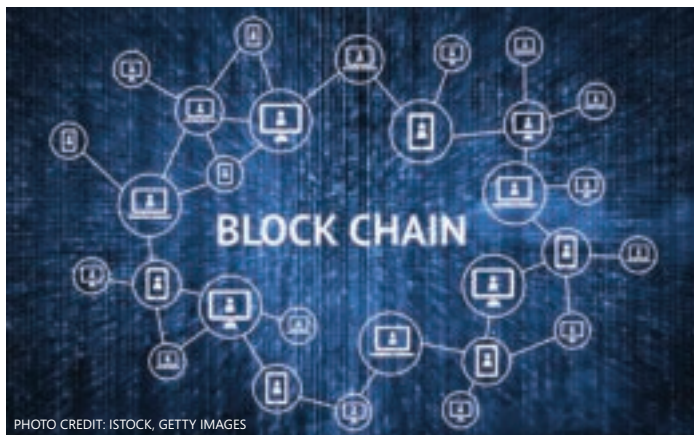


PHOTO CREDIT: ISTOCK, GETTY IMAGES

but so is the technology available to counter such threats. Video services providers have to use all the available technologies to stay ahead of the game. More security features such as secure chipsets or Trusted Execution Environments (TEEs) are available within devices, and progress is being made with different forms of forensic watermarking."

While the argument against pirated content used to be poor quality, there is a bigger focus now on the high cost of content and how to price services as low as possible while still being profitable, says Peterka. "Today's content distribution needs to be dramatically optimised to allow the benefits of modern technologies to drive costs down. One way to lower to the cheapest possible cost is by eliminating duplicated processes in the production chain."

For instance, each time when a studio sells a piece of media content, the content can be formatted individually for distribution, sometimes repeatedly. By taking the approach of moving content distribution into the cloud, studios may be able to save costs by transcoding the content only once, and hosting it where studios could stream it directly. This federated rights management approach, according to Peterka, would help distributors "save costs and meet customers pricing demands".

He also identifies blockchain as the other technology that has the potential to "revolutionise" video content distribution through a federated rights management approach, whereby it connects content creators with content distributors and aggregators to eliminate friction and inefficiencies in today's workflows.

"By making video content widely available through a system powered by blockchain, video service providers would be able to discover and access content in the file format, encoding standard, and the digital rights they need. This would also serve as a mechanism to manage payment, track metrics on who is distributing or viewing the content, and enforce usage rules," he says.

As for cloud services and virtualised networks, service providers globally are starting to embrace these concepts to better meet consumer expectations and compete in a converged media network, says Nagra's Le Dreau. "For many service providers, the transition is happening in steps, starting with the virtualisation of their backend user experience, content value protection, data analytics platforms and other IT systems, and leading to the full 'cloudification' of their entire environments, either on private or public infrastructure, or a mix of both."

And in a multi-screen video and TV world, such connected cloud environments may set new requirements in terms of cyber-

Verimatrix believes that blockchain has the potential to "revolutionise" video content distribution through a federated rights management approach, which connects content creators with content distributors and aggregators to climate friction and inefficiencies in today's workflows.

security, content and data protection, as well as disaster recovery. To address these challenges, Le Dreau reveals that Nagra has been increasing investments in its cybersecurity and anti-piracy of-

ferings over the past two years. Furthermore, Nagra has introduced the Security Services Platform, a media protection platform that enables media operators to leverage new opportunities and business models, and manage piracy and cybersecurity risks.

Combined with Nagra's multi-device, multi-network service, device and app protection technologies, forensic marking techniques and a suite of anti-piracy services, the Nagra Security Services Platform provides a security framework for service providers and content owners to protect, mark, monitor and act against pirates to defend their revenues against theft.

For Verimatrix, the company has reaffirmed its partnership with Veygo, a solutions provider of multi-screen video services. The deal will see the integration of the Verimatrix Verspective RT analytics solution within Veygo's Meta_Video Player. In addition, the Veygo multi-DRM mobile video

player is also integrated with Verimatrix VideoMark forensic watermarking solution.

Christophe Perier, founder and CEO of Veygo, explains: "By integrating our real-time analytics with Verspective RT analytics, and adding Verimatrix VideoMark Forensic and Live profiles to our multi-DRM secure video player, we are bringing a best-in-class solution for revenue generation and protection for service providers looking to deliver premium content across multiple networks. Coupled with Verimatrix's MultiRights OTT Plus, we're delighted to deliver a streaming technology and DRM agnostic consistent viewing experience in the fragmented device environment."

Veygo's Meta_Video Player is a Software-as-a-Service (SaaS) solution that is equipped with customised and monetisation capabilities with DRM, user engagement and retention in mind. In addition to multiple DRM support and advanced subtitles capabilities, the Meta_Video Player version 5 features an enhanced real-time analytics dashboard and introduces watermarking support to secure premium VoD and live events.

Verimatrix's Peterka concludes: "Offering a secure multi-device player that features watermarking and analytics in a single package is clearly an indicator of where the video services market is headed. Video service providers need flexibility and scalability with their infrastructures to deliver compelling content services, while having the robustness of analytics and watermarking to maximise monetisation and revenue." **APB**

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Merger aims to create new synergies to address evolving broadcast landscape

David Cohen (right), vice-president, marketing, Grass Valley, told APB what the acquisition of Snell Advanced Media (SAM) by Belden, and its merger with Grass Valley, can bring to the broadcast industry.



What were the main motivating factors behind the decision for Belden to acquire SAM?

David Cohen: To stay competitive, our customers require support to help increase their efficiency and effectiveness. They need to reach new audiences across different media with more dynamic content. The announcement improves our overall offering to provide customers with the most comprehensive, innovative selection of products and services, with assured interoperability, and extend our ability to offer in-region support to the global broadcast community.

We're excited about the advantages this transaction enables us to offer our customers, who continue to deal with a rapidly changing broadcast landscape that includes almost constantly evolving viewer and advertiser behaviour, changing business models and enormous, unprecedented competition.

What are some of the key synergies that can be created from the

merging of SAM products and solutions into the GV portfolio?

Cohen: SAM and Grass Valley are world-class companies that provide the broadcast industry with technically advanced products of the highest quality and standards.

By combining our intellectual property, talent and market access, we will strengthen our capabilities and ensure that our collective customers will have access to the most complete product offering available in our industry. The transaction provides Belden with greater access to this attractive market by expanding its offering of products and services to leading customers around the world.

How will the newly combined company be operated and what are some of its key strategies moving forward?

Cohen: The combined business is being run by Tim Shoulders, president of Grass Valley. More updates about combined operations are expected to be announced at 2018 NAB Show.

“By combining our intellectual property, talent and market access, we will strengthen our capabilities and ensure that our collective customers will have access to the most complete product offering available in our industry.”

Staying content-centric to divert audiences back to the main channel

In order to get the best value out of content, media companies have been increasingly combining video-on-demand (VoD) with linear viewing, resulting in many broadcasters and service providers rolling out streaming and over-the-top (OTT) platforms to cater to audiences in the digital space.

With this explosion in media content, as well as the rise in number of channels, platforms and devices, a broadcast management system such as WHATS'ON from MediaGeniX can enable media companies to deliver their content across multiple screens, Johan Vanmarcke, managing director of Asia, MediaGeniX, suggested.

He told APB: “We understood many years ago that, indeed, the world is changing. There is VoD and this programming system is not restricted to only one platform, but multiple platforms. Within VoD, it's not just the TV being used as a consumption device — it also includes mobile and tablets.

“We foresaw this increase in number of platforms and developed the WHATS'ON software that enables media companies to distribute and plan their content on various platforms. From a broadcaster's perspective, there is really no reason for them to not tap into multi-platform content delivery as WHATS'ON is already here to support and manage their entire content lifecycle, for both linear and non-linear.”

Designed to optimise content lifecycle and channel management, MediaGeniX's WHATS'ON pro-

Johan Vanmarcke (left), managing director, Asia, MediaGeniX, and Peter Helnckiens, CTO of MediaGeniX, were present at the Asia-Pacific Broadcasting Union (ABU) Digital Broadcasting Symposium (DBS) 2018, where they shared the company's vision of staying content-centric.



vides media operators with a “flexible and integrated” content, rights and scheduling system. Collectively, WHATS'ON manages the flow of content as it moves from initial concept in the long-term plan to fully-prepared and formatted material — completed with promos and secondary events — allocated to diverse linear channels and VoD services.

Peter Helnckiens, CTO of MediaGeniX, added: “Another challenge going forward is that these channels are not just different channels — the real question becomes how a broadcaster can use those different channels, such as YouTube and Facebook, to bring audiences back to its main channel.

“As a start, broadcasters will have to be flexible and agile when producing and placing teasers across different channels. This, in turn, means that when producing content, the broadcaster is producing a content package that is able to be scheduled over different channels.”

One user of WHATS'ON is British public broadcaster BBC, which provides linear, non-linear and radio broadcasting. The installation of WHATS'ON has enabled the planning, commissioning and scheduling process of media content for the BBC while providing media content-based management and regulatory reporting.

Within Asia-Pacific, Vanmarcke revealed that a telecommunications operator in Singapore, whose business has extended into the pay-TV industry, has selected MediaGeniX's WHATS'ON to manage its linear and non-linear channels. “This proves that WHATS'ON is not only a solution for broadcasters, but also for telcos expanding into the broadcasting space,” he concluded.

Qvest Media delivers Winter Olympics to German audiences

For the recently concluded Winter Olympics in Pyeongchang, South Korea, systems integrator Qvest Media helped German public broadcasters ARD and ZDF to set up a networked, live production platform in the International Broadcast Centre (IBC) in Pyeongchang, and in the National Broadcast Centre (NBC) in Leipzig, Germany.

Qvest Media designed the live production system specifically for the production of live sports production, and provided components for a live ingest and playout installation of a post-production environment with non-linear craft editing workplaces for audio and video processing, a central storage system, as well as multiviewer systems for production control

and transcoder engines for format conversion.

Henning Mieke, key account manager, rental solutions and services, Qvest Media, explained: “A special challenge with these Winter Games was the extremely short planning and lead time. Following the award of the project, we had less than four weeks in which to agree with the teams from ARD and ZDF on the technical details, plan deployment and make the logistical arrangements for the delivery of the system components.”

In the run-up to the Games, Qvest Media supplied ZDF with an Avid Interplay system for permanent integration with the Mainz-based broadcaster's mobile production unit (MPU). File ingest into

the Avid environment is effected via XT Access from the EVS network, enabling the production teams to import and provide video material using Avid Interplay.

The material can be accessed and edited from the eight non-linear editing workplaces equipped

Qvest Media helped German public broadcasters ARD and ZDF set up a networked, live production platform for their coverage of the Winter Olympics in Pyeongchang, South Korea. According to Henning Mieke (right), key account manager, rental solutions and services, Qvest Media, the system integrator had less than four weeks in which to agree with the ARD and ZDF teams on the technical details, plan deployment and make the logistical arrangements for the delivery of the system components.



with Media Composer workstations, before being transferred to the EVS playout server via Interplay transfer engines. In addition, Qvest Media temporarily extended the MPU to include Avis NEXIS E4 engines with 360TB of storage.

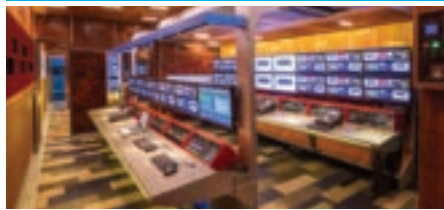
Besides equipment for image

production, monitoring and controlling and a Riedel Artist digital matrix intercom platform, Qvest Media's rental portfolio also includes high-end systems for graphics processing.

The Viz Artist and Viz Trio tools from Vizrt were used to build real-time graphics elements as part of the reporting process. To achieve this, they accessed a fully redundant graphics hub, and video signals were distributed using the latest generation of Evertz 3067VIPX multiviewer systems. Qvest also provided high-speed Alchemist and Kudos format converters from Snell Advanced Media (SAM) — now part of Grass Valley — owing to the 60Hz production environment in South Korea.

APB

DISTRIBUTION



Axon supports CTV 4K/UHD OB fleet

CTV Outside Broadcast, a subsidiary of Euro Media Group (EMG), has completed the refurbishment and technical upgrade of three of its outside broadcast (OB) units to 4K/UHD. The new OB vehicle features 24 Sony 4K/UHD cameras, a 160-input Sony MVS-8000X mixer and six EVS server positions. At the heart of the operation is Axon's Cerebrum monitoring and control platform, which supports three 4K/UHD galleries through a graphical interface and custom-built panels of 42 LED buttons.

MX1 unifies live video editing in MX1 360

MX1, a wholly-owned subsidiary of satellite services provider SES, has launched MX1 360, a unified media platform designed to enhance editing processes and introduce new workflows through the remote editing of sports, news and other live events via the cloud. To assist editors working on-the-fly, the system is able to associate external metadata with the live feed, empowering users to locate specific events when producing fast turnaround highlights packages. MX1 360 also allows for the archiving and future repurposing of content and highlights while enabling content to be distributed to broadcast, VoD and OTT platforms worldwide.

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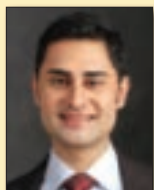
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Shalu Wasu
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Mobile disruption sheds new light in broadening DTH opportunities

Direct-to-home (DTH) is undoubtedly one of the most reliable and consistent video delivery mechanisms. But as media consumption on mobile devices continues to proliferate, DTH has to continuously evolve in search of its new standing in the future of TV. **Josephine Tan** writes more.

The keyword for TV of the future is mobile, declares Terry Bleakley, managing director of sales, Asia-Pacific, Intelsat.

Long gone were the days where viewers only watch TV from the comforts of their home, Bleakley tells *APB*, because consumers will continue to move towards watching programmes on-the-go. "Whether it's watching video on mobile devices as they ride a train to work, or from tablets as they fly from one region to the next, or while riding in a connected car and watching the dashboard, TV of the future has to be accessible anywhere, and

at anytime," he adds.

Suggesting that programmers require solutions that will enable them to deliver content quickly and in multiple formats, he highlights that satellite technology is "well positioned" to support this TV on-the-go trend alongside DTH, which still continues to be the "most dominant and reliable platform in the Asia-Pacific region as it offers great advantages for pay-TV operators".

With over-the-top (OTT) becoming more prominent, delivering OTT

content in Asia-Pacific has increasingly become a challenge, says Bleakley. "In more developed countries with good fibre infrastructure, OTT will become an alternative or complement to DTH. However, the reality is that many Asian countries have poor broadband infrastructure, and rely on their mobile infrastructure to meet broadband demands outside of metropolitan areas."

In order to eliminate the strain on these networks, satellite technology with "smart caching" to the edge of the networks is what he calls a "smart play", and is an area that Intelsat has been working on with ecosystem partners to better support media customers in the future.

And to support the continued evolution of TV, three satellites in Intelsat's video neighbourhood in the Asia-Pacific region — Intelsat 17, Intelsat 19 and Intelsat 20 — are able to connect operators to cable headends around the world, allowing them to distribute content to global markets and expand their businesses rapidly through a "comprehensive" global network and "well-supported" infrastructure.

Bleakley elaborates: "Our satellites are designed to deliver connectivity on land, air and at sea, which is where many consumers are watching their preferred programmes. The demand for available, uncongested bandwidth is stronger than it has ever been before, and will only continue to increase. Global dependence on satellites will continue to grow as reliable bandwidth is needed to meet the demand."

Intelsat has also collaborated with Dejero to launch CellSat, a hybrid solution that combines cellular connectivity from multiple mobile network carriers with Ku-band IP satellite connectivity to broadcast live TV

Three satellites in Intelsat's video neighbourhood in the Asia-Pacific region — Intelsat 17, Intelsat 19 and Intelsat 20 — connect operators to cable headends globally, allowing them to distribute content to global markets and expand their businesses rapidly.



“The demand for available, uncongested bandwidth is stronger than it has ever been before, and will only continue to increase. Global dependence on satellites will continue to grow as reliable bandwidth is needed to meet the demand.”

— **Terry Bleakley,**
Managing Director of Sales, Asia-Pacific, Intelsat



Live event coverage is still broadcasters' trump card in bringing viewers to the source of action

In an era where media content has exploded across all screens, one strategy in retaining them is to continuously produce compelling local-based programmes in the local language, said Aale Raza, director of Whiteways Systems.

Live events — such as news, sports, music concerts, political events and elections, as well as disasters — are particularly crucial as it takes viewers directly to the source of action, he said. “Radio and TV are the only medium that is capable of broadcasting sound and images from almost anywhere while maintaining great quality. This ability has become the key to maintaining and enlarging the viewership base for both radio and TV.”

According to Raza, the need to broadcast these live actions has led to a higher demand for digital satellite newsgathering (DSNG) and outside broadcast (OB) vans, and is why Whiteway Systems has recently begun to add the design and building of these vehicles

to its portfolio.

For instance, when broadcasters are tasked to provide coverage of large sports events such as football competitions or regional sports tournaments, they are required to go live on-air for eight to 12 hours a day, and are on-site for several weeks to cover the entire event.

Under such circumstances, he suggested that it would be ideal for broadcasters to deploy an OB van that is equipped with at least six cameras, alongside graphics systems, non-linear editing (NLE) systems, slow-motion and replay systems, as well as satellite uplink systems.

And for larger OB vans that are packed with at least eight cameras, these not only support sports events coverage, but can also be used as disaster recovery back-up units. In emergency situations, such as large-scale natural disasters, these vans operate like a “small TV station” to deliver timely news

locally, or even regionally, with “stable and reliable” network connections.

Raza concluded: “A series of changes has to be made, from how broadcasters view technology all the way down to how they purchase and implement these solutions, because technology is going to be the key differentiator. And broadcasters need a technology partner who is able to assist and guide them through every wave of technological change.”

“At Whiteways, we use a range of equipment when we build and design the OB van for our customers. We try to build the van in the country in which it will be used, and carefully select the right equipment that will fit the technical needs of the van.”

Aale Raza, director of Whiteways Systems, pointed out that live events, such as news and sports coverage, have achieved higher ratings, thus leading to the demand for more deployments of DSNG and OB vans.



coverage from remote locations. Designed to deliver greater assurance for broadcasters when going live in the field, CellSat is capable of providing enhanced reliability in situations where cellular networks are congested, or when cell coverage is limited.

A hybrid solution such as CellSat, he adds, offers programmers customised options to address their challenges while simplifying their news and live event coverage process.

Another satellite operator, APT Satellite, has introduced APSTAR TV, a mobile app that provides live streaming of a variety of TV channels, as well as time-shift recordings. Available for download on Android and iOS devices, APSTAR TV is developed with the purpose to value-add APT Satellite's services to its customers, says Power Pan, director, marketing, APT Satellite.

He explains: “For broadcasters who have been distributing their TV channels on our satellites, they can now deliver their channels directly onto consumers' mobile devices via APSTAR TV. This broadens the coverage of their TV audience base.

“As APSTAR TV is packed with several TV channels, it also eliminates the need for viewers to download many different apps. This further enhances the user experience, making them more inclined to catch their favourite programme on our platform.”

TV viewing will increasingly become more fragmented, according to Pan, as more consumers are now consuming media content across multiple platforms, especially via mobile devices when they are commuting. He continues: “While



APSTAR TV is a mobile app that provides live streaming of a variety of TV channels as well as time-shift recordings, and is developed with a purpose to value-add APT Satellite's services to its customers, says Power Pan, director, marketing, APT Satellite.

we understand that the trend is shifting towards non-linear viewing, we have also been extending our network infrastructures into such places as developing countries and remote areas where Internet connectivity is poor. And in areas — including cruise, airplane and subway — where connectivity might not be as desired as these moving carriers are far away from ground networks, satellite is able to resolve these issues by providing consistent and reliable broadband services.”

Shifting towards mobile satellite communications is also now a strategy for APT Satellite. Pan reveals that the company has been working closely with its industry partners to provide entertainment and broadband services to in-flight passengers and passengers on board cruise ships. And with the launch of APSTAR TV, which he labels as an important product

added to APT Satellite's portfolio, the company is looking forward to have the app installed on airplanes and cruise ships.

Other growth areas, Pan points out, include satellite newsgathering and contribution fields, as well as the increasing interest of 4K/Ultra HD (UHD) delivery via satellite in the future. Particularly for 4K/UHD delivery, APT Satellite has inked a deal with Telekom Austria Group (TAG), a provider of digital services and communications solutions in Central and Eastern Europe.

Under the agreement, a total of 13 channels — including a 4K/UHD channel via HEVC/H.265 encoding — is broadcast from the APSTAR-7 satellite located at the 76.5°E orbital position. The TV platform is available throughout Asia-Pacific, South Asia, the Middle East, and several parts of Europe and Africa.

Stanislav Georgiev, head of media broadcasting, Telekom Austria Group, comments: “Under this corporation with APT Satellite, we have now built a bridge between Europe and Asia, aiding the European broadcasters to enter and pursue growth into the expansive Asian market. We are optimistic about the fast adoption of 4K/UHD content in Asia, and is proud to broadcast one of the first 4K/UHD channels for this territory.”

While the key driver for 4K/UHD adoption is the benefit of an enhanced viewing experience, Pan remains cautious on the widespread viewing of 4K/UHD content in Asia. He explains: “Broadcasters have taken a long time to complete the transition from SD to HD. While some countries such as Hong Kong and Singapore are now successfully delivering in HD, other countries like Cambodia and the Philippines have either yet to begin this transition or are only at the beginning of this transition.

“Hence, applying this similar timeline into the transition from HD to 4K/UHD, we think that it might still take some time for 4K/UHD to become a norm, like what is happening to HD today.”

Intelsat's Bleakley identifies the key driver for more 4K/UHD growth as being media companies' willingness to invest in updated cameras and related equipment to support 4K/UHD programming. He elaborates: “The development of 4K/UHD in Asia-Pacific is impressive, and has surpassed many other regions, driven by countries such as Japan.

“It's been proven that 4K/UHD provides an elevated viewing experience for consumers; however, it

is incumbent upon programmers to make the necessary upgrades to their equipment in order for consumers to take advantage of enhancing viewing. High dynamic range (HDR) technology, combined with 4K/UHD, will provide an optimal immersive viewing experience to TV consumers.”

For Measat Satellite Systems, the satellite operator has signed a multi-year agreement with SPI International, a media company operating more than 35 TV channels in over 50 countries on six continents. Six channels, including one in 4K/UHD, will be broadcast across the Asia-Pacific region from Measat's 91.5°E hotspot.

The six channels include FightBox HD, a sports network with live international MMA events; DocuBox HD, a documentary channel covering nature, wildlife, science and human civilisation; Fast&FunBox HD, a lifestyle channel with “extreme adrenaline” sports programming; FilmBox Art House, a movie channel packed with independent and classic films; Gametoon HD, an interactive eSports channel; and FunBox UHD, a general entertainment channel featuring native 4K/UHD content.

Raj Malik, senior vice-president, sales, Measat, concludes: “Measat is excited to add SPI International's prime HD and 4K/UHD content to our 91.5°E hotshot, which continues to be the preferred choice by broadcasters. Our experience in creating Asia's strongest HD and 4K/UHD neighbourhood, combined with our ability to offer customised solutions, is key to the consistent growth in number of channels at 91.5°E.” **APB**

APB X-PLATFORM



Telco scales sports OTT service with Edgeware

One of Europe's largest telecoms operators is using Edgeware's systems to scale its over-the-top (OTT) TV service, in order to deliver popular live sports content over its in-house content delivery network (CDN). Johan Bolin, VP of products at Edgeware, said: "We expect to see more and more premium TV and sports content being delivered by OTT services. That puts higher demands and expectations on the delivery network, with an increasing need for scale and quality."

Anevia acquires Keepixio

Anevia, a provider of over-the-top (OTT) and IPTV software solutions, is acquiring video compression software expert Keepixio. The acquisition, according to Anevia, will enable the company to offer operators and broadcasters a new end-to-end encoding, transcoding, storage, packaging and delivery solution that will comply with standards such as 4K/Ultra HD (UHD) high dynamic range (HDR) and HEVC/H.265. Damien Lucas, CTO and co-founder of Anevia, said: "With the recent addition of CMAF for ultra-low latency, Content Aware Encoding and virtualisation, Keepixio products are among the best solutions for OTT encoding and are a perfect match with Anevia's existing portfolio."

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Will 4K/UHD come to Asia via OTT?

Is OTT primed to be the leading platform to distribute 4K/UHD content in Asia-Pacific, and what do OTT service providers need to take into account before launching 4K/UHD services in the region?

Shawn Liew reports.

With the chase to differentiate over-the-top (OTT) services, and deliver the best possible viewing experience for all types of audiences, pumping in as much 4K/Ultra HD (UHD) content seems a logical move. Or is it?

Steve Davis, vice-president and general manager, Asia-Pacific, Ooyala, tells *APB*: "OTT service providers' shift to 4K/UHD content means significant additional investment in media infrastructure, much more so if they produce their own content."

"This could include acquisition of new types of video equipment and upgrade of compute power, bandwidth, storage (on premise or in the cloud), and more. The ROI for 4K/UHD content needs to come from service or ad revenue, and providers need to decide if their content is compelling enough to justify a premium."

In essence, launching 4K/UHD content is costly, and it is important for service providers to have deep insights on viewers' preferences and timing to launch, Davis advises. For example, is there a sufficient installed base of 4K/UHD devices, he asks. "In markets where videos are predominately consumed through mobile devices, it doesn't make sense to rush to 4K/UHD, though more and more, we are seeing

"OTT service providers' shift to 4K/UHD content means significant additional investment in media infrastructure, much more so if they produce their own content."

**— Steve Davis,
Vice-President and General Manager,
Asia-Pacific, Ooyala**



While 4K/Ultra HD OTT services are not prevalent today, can content genres such as live sports compel viewers to consumer 4K/Ultra HD content over mobile devices?



With advanced features from encoding to playout, Neulion provides a 4K/UHD HDR service with everything needed to broadcast, distribute and monetise 4K/UHD content for rights holders.

the introduction of 4K/UHD-capable mobile devices."

In regions like Asia-Pacific, where Internet connectivity is yet to be ubiquitous, offering 4K/UHD content may even irate viewers, who may end up watching content with multiple interruptions — not from ads, but from poor connectivity.

However, this does not deviate from the fact that the ability to deliver content with sharper and clearer images is a key differentiator for OTT, Davis highlights. "As identified in our *State of the Broadcast Industry 2018* report, the quality of content, such as original and exclusive programming, easy search and discovery, personalisation of user experiences, as well as content formats with mobile compatibility, are important factors that contribute to satisfaction with OTT among consumers."

Hollywood, sports rights holders and major equipment manufacturers are the key drivers behind the adoption of 4K/UHD video, suggests Chris Wagner, executive vice-president at Neulion. "In fact, 4K/UHD TVs are being rolled out faster than HDTVs were when they were first introduced," he details. "An estimated 20 million 4K/UHD TV units were sold in 2017, 23 million units are planned for 2018, and 26 million units in 2019 — and that's just in the US alone."

4K/UHD video is the foreseeable format of the future, Wagner declares, adding: "With an eye-popping 4,000+ horizontal pixels, 4K/UHD video provides a high-quality, immersive experience that is unattainable with previous formats."

To support 4K/UHD video, Neulion offers a full-service, end-to-end 4K/UHD high dynamic range (HDR) video platform that powers some of the leading brands around the world. "With advanced features from encoding to playout, Neulion provides a 4K/UHD HDR service with everything needed to broadcast, distribute and monetise 4K/UHD content for rights holders," says Wagner, who also believes that for consumers who have purchased 4K/UHD HDR devices in Asia-Pacific, live 4K/UHD events are the "next big thing".

Both the Apple and Google stores, he adds, offer 4K/UHD apps that support live 4K/UHD streaming, where viewers can purchase a digital ticket that grants them access to the content.

"We also believe HEVC/H.265 is a better streaming protocol for large-scale events when you have concurrent viewing," Wagner continues. "With the slew of data accessible via the digital ticket model, an OTT platform can monitor and improve the viewing experience by tracking, in real time, bitrates, frame drops, buffering and so on."



Declaring 4K/UHD video as the foreseeable format of the future, Chris Wagner, executive vice-president, Neulion, said: "4K/UHD video provides a high quality, immersive experience that is unattainable with previous formats."

As consumers continue to demand for higher quality and varied content, there will be a growing appetite for 4K/UHD, thus driving the industry to improve video quality and deliver premium content, predicts Ooyala's Davis. However, he is quick to point out that the 4K/UHD viewing experience is heavily reliant on good connectivity. OTT providers who are planning to go 4K/UHD in Asia-Pacific have to bank on advancements such as 5G wireless services, which will eventually make for a more 4K/UHD-friendly video ecosystem.

"The availability of quality 5G wireless services can bring about higher data speeds and video streaming quality to mobile devices and broadband, with lower latency," Davis explains. "5G providers also promise new delivery technologies such as fixed wireless, which is already being tested by top operators, and can potentially boost demand for more robust video content. Nonetheless, 5G is still being developed and is only a network of the future, and when

it begins rolling out in 2020, it will take time for adoption in developed markets."

In the interim, where 5G is not available, Davis recommends media optimisation as the solution to ease the burden of streaming data-heavy 4K/UHD content. "Media optimisation helps by performing smart analysis of video files to reduce bitrate on a frame-by-frame basis," he adds. "This ensures that the original video quality is maintained. The video file is likely to look like the original, despite having a lower overall size and bitrate — so that the video can flow more seamlessly over congested networks."

As audiences' expectations of visually sharper and brighter content continue to grow, OTT and video-on-demand (VoD) service providers will increasingly make 4K/UHD a part of their strategy in attracting and retaining eyeballs — although Netflix and Amazon will continue to take the lead in providing 4K/UHD content. "In fact, these two OTT giants are not only going to invest heavily in producing original content but they will also be producing more of it in higher resolution," says Davis.

He also reiterates how high Internet speed will be a key component in delivering 4K/UHD content, and which streaming and OTT providers are heavily reliant on to ensure that their viewers enjoy an uninterrupted viewing experience.

"As there is currently still a lack of high-quality broadband infrastructure across most markets in Asia-Pacific, it would be interesting to see how OTT competes against other delivery platforms such as satellite TV or VoD service providers in becoming the leading platform for 4K/UHD," Davis concludes. **APB**

Lawo helps Polish broadcasters go IP

IP-based products will define the future landscape of broadcast technology investment, said LP Systems, Lawo's partner in Poland for audio production, radio and IP-based audio/video products.

Describing 2017 as a "busy and successful" year, LP Systems reported how Lawo equipment was installed at various broadcasters, and used as remote production gear at major international sports events in Poland.

These include Radio Opole, Radio PIK, TV Polsat, Radio dla Ciebie, Polish Television and the World Games 2017, which was held in Wroclaw, and saw 3,500 athletes from 112 countries competing alongside 700 journalists from 50 countries reporting on the event.

Polish company ATM System was responsible for providing broadcast resources at the IBC (International Broadcast Center) and all remote event locations. With LP Systems appointed as main contractor for the remote production set-up, remote racks were installed at the various venues to collect video and audio feeds, and route them to the IBC where they were forwarded via SDI to the central router.

The solution involved a large quantity of Lawo equipment, including V_remote4 units, A_mic8 units, Arista7150S-24 switches, and a dual-server Virtual Studio Manager (VSM) System for overall control. A total of nine remote racks were used to serve 13 venues, linked to a local outside broadcast (OB) van.

These included two that were equipped with a pair each of V_remote4s and A_mic8s, two racks loaded with two V_remote4 and an A_mic8, and five racks with V_remote4 and A_mic8 units.

Using a new IP-based remote production model, ATM System successfully produced and broadcasted 429 hours of live coverage from all



Using Lawo equipment, Polish company ATM System was able to deploy a new IP-based remote production model for its coverage of the 2017 World Games.

of the World Games venues on behalf of the International World Games Association.

LP Systems also helped to upgrade Radio Opole's Radio Volkswagen Transporter OB vehicle, replacing a Lawo zirkon console with a 24-fader sapphire and VisTool graphical user interface (GUI) software.

A similar strategy was employed at Radio PIK Bydgoszcz, where the main on-air studio was upgraded with Lawo sapphire fader panels and central control section using the frame of a previously installed zirkon console, plus two Lawo KSC rack panels. Radio PIK's remote studio in Torun was also modernised with the installation of an eight-fader Crystal console.

Taking advantage of the flexibility provided by the Lawo equipment — in terms of customising the functionality of the console and the use of sapphire and crystal modules in zirkon frames — LP Systems minimised the cost to the customer, while enabling Radio PIK to control the remote studio externally using RAVENNA.

A Lawo console was also installed in a new TV satellite newsgathering (SNG) vehicle for TV Polsat in Warsaw by LP Systems. The four-fader crystal console, said LP Systems, provided the TV Polsat with the flexibility for easy customisation, alongside a number of functions that are easy to configure.

Enhancing mobile viewing experience as Internet usage surges worldwide

An over-the-top (OTT) strategy can no longer be peripheral or supplemental; instead, it must be an integral part of broadcasters' overall distribution strategy, suggested Mary Kay Evans, chief marketing officer, Verizon Digital Media Services.

She told APB: "Just as consumers continue to move from the traditional TV set to the mobile screen, so too broadcasters must reach this smaller screen."

Verizon recently released a *Video Drives Internet Growth* infographic, which highlights how the Internet is growing rapidly, driven primarily by video consumption on mobile devices. Verizon predicted that 82% of all traffic will be video in 2021, with over half of video content viewed on mobile.

"That means there's never a more critical time to reach viewers on the screens they are looking at

most — their mobile devices," said Evans. "And with the personalisation that a mobile device enables, broadcasters have an incredible opportunity to increase viewership and monetisation capabilities."

And perhaps it should come as no surprise that Asia is leading this growing trend — as of 30 June

"There's never a more critical time to reach viewers on the screens they are looking at most — their mobile devices."

— Mary Kay Evans, Chief Marketing Officer, Verizon Digital Media Services

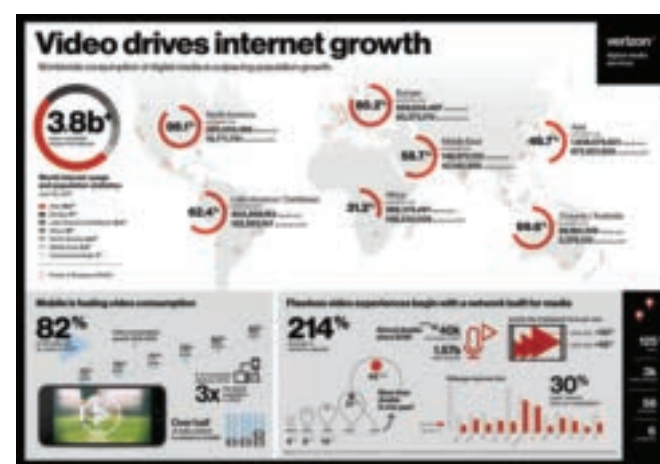


2017, there are more than 1.9 billion Internet users in the region, the highest recorded in the world.

Within Asia, Verizon currently has 15 points of presence (PoPs), with plans to add more in a region where "you have to build for massive scale", Evans said, while describing the delivery of live events on mobile and connected devices at scale as both an "incredible opportunity" and a challenge.

She explained: "Live events such as sports, award shows and social events attract millions of viewers and can be a great way for broadcasters to engage with consumers."

"However, the challenge is that viewers all want the same premium content experience at the same time. That means zero buffering, zero errors and reduced latency. Ultimately, broadcasters rely on content delivery networks (CDNs) that can offer high quality for even



A recent Verizon infographic, highlights how the Internet is growing rapidly, driven primarily by video consumption on mobile devices.

the largest viewing audiences. These CDNs must anticipate traffic growth and unexpected viewership spikes, all while still delivering an exceptional quality of experience."

Verizon's new infographic also identified how "flawless video experiences" begin with a network built for media because, quite simply, there are no second chances when it comes to live streaming, Evans cautioned. "Content owners must ensure that they have a CDN that can quickly scale to manage millions of concurrent users, all

while providing a stream that is as good as, or better than, TV."

And in order for a CDN to ensure the best quality experiences, it must be optimised for video delivery. "In other words, video simply cannot be an add-on: architecture and scale matter," she added. "Time to first byte is an essential metric in order to reduce latency. Throughput is also a good measure of a video experience. CDNs must have enough reserve capacity to sustain delivery and ensure the highest quality streams."

5G Today getting ready for tomorrow's viewing habits

Running from July 1 last year to October 31 next year, a 5G test site for broadcasting has been set up in the Bavarian Oberland as part of the 5G Today project, funded by the Bavarian Research Foundation.

Under the leadership of the Institute for Broadcast Technology (IRT), project partners Katherin and Rohde & Schwarz are investigating large-scale TV broadcasts in the Further evolved Multimedia Broadcast Multicast Service (FeMBMS) mode over 5G networks.

The project is also supported by associate partners Telefónica Germany and Bayerischer Rundfunk (BR), the Bavarian state broadcaster who is operating the 5G FeMBMS broadcast network as a test site at its transmitter sites.

Jochen Mezger, general manager, business area network technologies, IRT, said: "Together with EBU, BBC, RAI and SWR, and industry partners, we have defined the broadcasting requirements for 5G and successfully incorporated them in the international standard.

"Requirements include a 100% broadcasting mode and increased channel spacing. We are pleased that the 5G Today project allows us to implement and evaluate standardisation results at a test site."

Where Rohde & Schwarz is concerned, the company is contributing technological expertise

in terrestrial transmitter technology and mobile communications T&M technology in order to create the basis for efficiently transmitting media content to mobile and portable devices, Manfred Reitmeier, senior director of R&D transmitter systems, Rohde & Schwarz, told APB.

He continued: "The 5G Today project offered to test the network with the existing broadcasting infrastructure. Large and smaller transmitter cells are combined to create a large coverage area."

The first test broadcasts using TV signals are expected to take place at the end of this year, and will be simultaneously broadcast on channel 56 from BR's Wendelstein station and other locations in the Munich area. Until then, components for transmission and reception will be developed and installed, and theoretical studies and preliminary investigations will take place, added Reitmeier.

He also observed how 5G is a "key technology" for the future, when vehicles become highly automated and devices are networked with each other in the Internet of Things (IoT). "5G also offers great potential for efficient distribution of media content; young people, in particular, want to receive broadcast content on all user devices.

"The introduction of 5G could

open up a worldwide market with millions of smartphones and tablets acting as potential TV receivers able to combine live TV services, media libraries, social networks and many other media services."

Reitmeier also painted a sce-

nario where the viewer will have access to continuous, and contiguous, content throughout the day — regardless of what device is available.

"5G central controllers will know that the viewer is sitting in his driverless car, watching a game

on the car's TV. Then, he'll park his car and switch to watching on his mobile phone, which could be connected via 5G. And then, as he walks into his house, he can swipe the game from his phone to the 4K/Ultra HD (UHD) or maybe 8K TV."



Running from July 1 this year to October 31 next year, a 5G test site for broadcasting has been set up in the Bavarian Oberland as part of the 5G Today project.

Race along with the new F1 app

To bring fans closer to the action on the track, Formula 1 (F1) has launched the new F1 TV mobile app.

Starting with the 2018 season, fans will be able to experience the live race action in a more immersive and engaging way through 20 driver cameras, and have the freedom to choose which part of the action they want to follow at any given moment on- or off-track. Practice sessions and qualifiers will also be offered live, along with press conferences, pre- and post-race interviews.

As the Official Connectivity Provider to F1, Tata Communications is powering the F1 TV mobile app through its Ultra Live Video Delivery Network (VDN). These VDN capabilities are underpinned by Tata Communications' global network, which minimises latency for video content and ensures an immersive, high-quality entertainment experience for fans, said

Tata Communications.

Frank Arthofer, director of digital and new business at F1, said: "With the launch of F1 TV, we are beginning on the journey to build a cornerstone of our digital transformation. F1 TV subscription products are clearly and centrally aimed at our hardest core fans, and we are firm believers that while we are bringing a new audience to the sport, we must always remain focused on delivering products and experiences that serve the most avid F1 fans.

"Our objective with F1 TV is simple: provide these fans with the best available service to watch live Grand Prix and provide them with the best sports over-the-top (OTT) customer experience in the world. Our team and our partners are singularly focused on delivering on that vision — not just for launch but over the long term. Live streaming video is an exciting space changing almost daily."

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REAL-TIME MEDIA OVER IP INSIDE A TV FACILITY

By
Michel Proulx

MONDAY, 25 JUNE 2018 • 0900 – 1800 HRS • SINGAPORE

Upskill Your Workforce Now!

- ❖ Learn from IP guru Michel Proulx from Canada
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- ❖ Network with Industry Professionals



As analogue switch-off dates in Asia-Pacific draw nearer and IP takes centre stage in the region, there is a critical need to train broadcast staff in IP skillsets. The **IP Master Class by Michel Proulx**, after feedback from the two successful IP seminars APB conducted in 2017, is specially designed to equip engineers and technicians with new thought processes and the relevant skills needed in the transition to IP infrastructure in the not-too-distant future.

PARTICIPATION RATES (SINGAPORE DOLLARS)	1 PAX	2 PAX*	3 PAX & ABOVE*
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ABU Member Special	260	190	120
EARLY BIRD before May 31 Less 10%	320	240	160
ABU Member Special	300	220	140

* Group discounts apply only for registrants working for the same company.

FEEDBACK FROM IP SEMINARS 2017



Dr Amal Punchihewa,
Director, Technology &
Innovation, Asia-Pacific
Broadcasting Union
(ABU)

“The keynote by Michel highlighted the importance for broadcasters and the industry to get ready for the use of IP in the coming years. The transition to IP is inevitable; Asia-Pacific broadcasters have to start planning and be vigilant of the happenings in the broadcast sector in relation to IP while pushing ahead in making the transition happen.”

“Michel shared a lot in the areas of network switching technologies, and provided in-depth opinions. It will definitely benefit us, as well as other broadcasters, a plan to migrate from digital, or baseband, to IP.”



Wang Yin,
Assistant Vice-President,
Broadcast Engineering,
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