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WORLD IN BRIEF

Astro commences 4K/UHD broadcast

KUALA LUMPUR – In preparation for the launch of its 4K/ Ultra HD (UHD) set-top box later this year, Astro broadcast two matches from the opening weekend of the English Premier League in 4K/Ultra HD (UHD).

IPTV drives pay-TV growth in Asia-Pacific

SINGAPORE – The number of pay-TV homes in Asia-Pacific will rise from 632 million in 2017 to 743 million by 2022, predicted IHS Markit. This, according to the research firm, is largely driven by IPTV, which increased its market share from 18% in 2016 to 23% in 2017.

Enter the age of the Connected TV

LONDON – Connected TV devices, which allow users to stream over-the-top (OTT) video content to the TV screen, now number more than one billion worldwide, according to research from Strategy Analytics. This, added the company, also represents a fundamental shift in how consumers view and engage with content on the TV set.

Blockchain shaking up the broadcast & media industry

BY JOSEPHINE TAN

DUBLIN/PHILADELPHIA – The broadcast and media industry is now awakening to how blockchain applications can disrupt and benefit its entire industry and may also impact on the dynamics of the world's economy.

"The impact of blockchain on the media industry may be greater than the impact smartphones have had on the music industry," said Antonio Senatore, CTO of Deloitte EMEA Blockchain Lab.

Although blockchain technology, at its core, is still taking shape and evolving, the media industry must take note of its development and potential applications.

Senatore told APB: "In the broadcast and media industry, we have observed a number of different applications. For example, copyrights, content publishing



Blockchain is one of the most widely discussed technologies across many business sectors today — in the media industry, blockchain is believed to have the potential to disrupt and yet empower new business models.

and consumption can all be done through blockchain technology; and it will basically be disintermediating current payments and copyright channels, ultimately

benefiting the content creator.

"These benefits not only include protection against piracy, fake news and media tampering, and incentivising content creation

and publishing, but also enhance content review and content consumption."

As a technology emerging from the FinTech industry, blockchain has been progressively making its way into the media arena. For instance, in July this year, *No Postage Necessary*, a romantic indie comedy, became the first feature film to debut on Vevue, a peer-to-peer (P2P) incentivised video network based on the Qtum blockchain, an open-sourced value transfer platform which focuses on mobile decentralised apps.

The film is directed by Jeremy Culver, who is also head of Vevue Premium, the company's micropay-per-view division offering content independently produced by content creators.

Founded in 2012, Vevue is conceived as a solution to crowd-

» 8

MR the next immersive reality?

NEW YORK – In recent times, augmented reality (AR) and virtual reality (VR) have emerged as potential tools for content producers to create the ultimate viewing experience.

However, could mixed reality (MR) instead represent the future of immersive entertainment? Microsoft would appear to be a leading proponent, after the technology company last month opened a new Mixed Reality Capture Studio in Hollywood, joining similar operations in Red-

mond, Washington, San Francisco and London.

The Hollywood studio was created in partnership with Metastage, a new Los Angeles-based MR production company, and will reportedly give Hollywood exposure to high-quality volumetric capture, which provides a quick and easy way to build detailed 3D objects without cumbersome 3D sculpting,

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Microsoft invites you to enter the world of mixed reality (MR), as the technology company opens a new Mixed Reality Capture Studio in Hollywood last month.

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from studio to playout and everything in between



Mixed feelings about 4IR? Research, consult ... or speak to an AI robot

The late 1700s marked the birth of the First Industrial Revolution. With the invention of the steam engine, industries began their transition to new manufacturing processes. And in 1870, the world witnessed the Second Industrial Revolution — the dawn of new energy sources, as well as the Age of Science.

Instead of steam, electricity began to power factories and enabled manufacturers to start assembly lines to mass-produce goods, uplifting lives and livelihoods.

Almost a century later, the Third Industrial Revolution appeared. This is being described as the Digital Age, and it is a revolution that is still making its impact.

And today, we are entering the Fourth Industrial Revolution (4IR) — the fusion of technologies leading to the Internet of Things (IoT), Artificial Intelligence (AI) and new game-changers such as Blockchain technology.

Building on the digital revolution, the 4IR, as it embraces technologies such as cloud, big data analytics and AI, is set to speed up current breakthroughs and evolve at an exponential rather than a linear pace.

Going forward, the world will undeniably be changing at a rapid speed. Technologies are connecting businesses, ideas and innovations — and bringing people closer together than ever before.

IoT may soon become IoE (Internet of Everything).

What is clear to many in the media industry affected by digital disruptions is that this level of connectivity will definitely transform entire systems of production, management and even

governance. For example, blockchain technology while bringing certain benefits to content creators will be disintermediating current payments and traditional copyright channels. However, the technology can enhance protection against piracy, fake news and media tampering as well as incentivising content creation, publishing, content review and eventually increase content consumption.

In this current edition of *APB*, we also turn the spotlight on MR (mixed reality), the merging of both real and virtual worlds.

Technology giant Microsoft has labelled MR as “the next evolution of human computing”, following the opening of an MR Capture Studio in Hollywood. MR is said to be capable of creating new environments and virtualisations where physical and digital objects co-exist and interact with each other.

Undoubtedly, the race for consumers’ attention and wallet is becoming more interesting and intense as we enter the 4IR.

More new technologies and innovations will appear on the horizon in the coming months. The key to thrive in the new millennium is not about speeding along the same track as there are several different ways to make use of each emerging technology.

How?

Research, consult ... or
speak to an AI robot.



JOSEPHINE TAN
NEWS EDITOR

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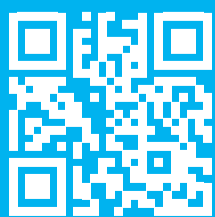
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From transmitting and receiving ground networks to the space and vice-versa, the Earth station is an intermediary medium that connects the planet to the outside world beyond Earth. As remote and isolated as these facilities may be situated, the infrastructure within the facility is opening its doors to welcome new technologies that might revolutionise its entire ecosystem.

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You don't get anywhere by sitting still

BY PADDY PAYNE

Two-thirds of Associated Press' (AP) employees are journalists, in offices straddling the globe, and our mission is to tell the world's stories, from breaking news to investigative reporting. What makes AP truly unique is that it has always been an independent, not-for-profit cooperative not enslaved to a company line or beholden to any government.

But how does an organisation with a 172-year history manage the relentless pace of change? How does AP keep providing content and services to engage audiences worldwide whether via broadcast, online or social media platforms?

Even 25 years ago, before the invention of rolling TV news, newspapers were wondering what digital meant and the potential of the World Wide Web remained a mystery to the majority on a 'be-bong-be-bong-chrchrchr' dial-up. Video footage meant a bike and a tape. Interactive meant there was a phone-in. Big data meant a larger font on your spreadsheet.

Nowadays, appointment television and inky paper serve shrinking audiences but demand for a good story with images and text is greater than ever before. With phones in our pockets, we are all storytellers of course, but credible news outlets must equip their reporters with the resources to be authoritative multimedia storytellers, still striving to be first and to be right.

But AP is by its very nature an innovator and has learnt to harness new technologies both to improve its own editorial workflows and to deliver efficiencies to its customers: Artificial intelligence (AI). Newsroom in the cloud. Algorithmic journalism. Real-time fact-checking. Social media analytics. Cross-platform planning. Predictive story engagement. Are they just buzzwords?

From its inception with the pony express to the early adoption of the teleprinter, which transmitted directly to printers over telegraph wires, AP has harnessed the potential of technology. More recently, it pioneered the world's first newsroom computer system. AP ENPS, constantly upgraded and developed, is relied on by over 800 newsrooms globally (<https://www.ap.org/enps/>).

These days, innovation may be delivered with development partners or off our own bat, but let us look at some examples:

■ **News-gathering** — Technology has revolutionised the way news providers can cover a story and AP is at the leading edge of this. Technologies such as LiveU's mobile HD live video streaming units provide the flexibility and mobility for AP to get closer to the story than ever before. We have also equipped our journalists with the mobile streaming app

“With phones in our pockets, we are all storytellers of course, but credible news outlets must equip their reporters with the resources to be authoritative multimedia storytellers, still striving to be first and to be right.”

Bambuser, allowing us to cover more stories in real-time video. We now produce over 10,000 hours of live video a year, a number that reflects our customers' appetite for live news.

■ **Algorithmic journalism and AI** — Streamlining workflows, automating mundane tasks, crunching more data, and generating additional output are all the result of the AP's work in algorithmic journalism. You can find out more about that on our website, AP.org (see 'A guide for newsrooms in the age of smart machines') (https://insights.ap.org/uploads/images/the-future-of-augmented-journalism_ap-report.pdf).

■ **Google News initiative** — The importance of user generated content (UGC) to news coverage continues to grow. However, sourcing and verifying UGC takes considerable time and resource with mistakes often leading to misleading news entering the public domain. AP Verify, a cloud-based newsroom tool, automatically collects and assesses the data needed to verify content, saving considerable editorial time and bringing trusted content to the news viewer quicker than ever before. This will be achieved by a marriage of machine learning and video recognition technologies with AP's editorial expertise and UGC verification experience.

■ **Automated video transcription** — Transcribing recorded interviews and events for use in the video and text news reports can be a laborious and time-consuming task for any journalist. But partnering with one of the automated transcription providers, Trint, has allowed AP to streamline the process. Before the content is published, producers review and check the transcriptions rather than spend hours creating it. This frees up time to focus on the most urgent stories that need their attention.

■ **Automation** — AP was the first news agency to automatically turn data into text stories through our Automated Insights partnership, increasing our earnings report output twelvefold. A Stanford University study revealed that this increase in output increased liquidity in the markets, particularly for companies AP had not previously covered before automation. We have now extended this automation to increase our coverage of Minor League Baseball and College Basketball. Automation is often associated with cost cutting, but we have proven at AP that automation can be used to create entirely new revenue streams.



■ **Trending stories** — The volume of social media content available to a newsroom provides both invaluable sources of content but a significant additional editorial challenge. AP has partnered with and trialled a range of tools to address this, such as Newswhip Spike, to highlight surface trending stories and optimise the reaction time.

■ **Content syndication** — As a news agency, AP's text, video, photos and digital content are delivered to more than 14,000 newsrooms and some 700 broadcast networks worldwide. Partnering with Newswhip, we developed analytics tools to tell us how AP content is performing, as it is being consumed via third-party sites. The syndication tool matches AP stories against a repository of content, allowing us to track use of AP copy by our customers in real time and analyse how it is driving social engagement.

■ **Editorial planning** — With the relentless pace of change in how news is produced and consumed, managing people and assignments has never been more important or more difficult. Across its video, text and photo businesses and with offices in over 100 countries, AP knows this more acutely than most. We analysed the problem with a study of coverage planning and resource allocation within our organisation to reach an uncomfortable conclusion. We identified hundreds of hours of duplicated effort between different formats using differ-

ent technologies to plan, communicate and report.

We did not find a dedicated editorial planning tool on the market, so developed our own. AP Playbook is currently being tested in our own newsrooms but a more exciting opportunity came along. The more we talked to our customers, the more they affirmed the role AP Playbook could perform for them. As we roll Playbook out, the idea is to help newsrooms increase their output while providing a better way to manage coverage plans, deploy newsroom resources and track costs. AP Playbook is a cloud-hosted platform that facilitates quick and easy access and collaboration, with reporters notified of updates wherever they are and on any device.

I worked for a magazine publisher at the beginning of my career. A more experienced colleague once called out, "Can you imagine proofing all this before the advent of the fax machine?", while grinning wildly at the roll of paper spewing across the office floor. One thing is for sure: every technology mentioned in this article will be superseded but the craft of the storyteller is an enduring one.

As an organisation that strives to be first, to be right and to be authoritative, AP will continue to foster its editorial reputation with a restless creative approach to innovation. **APB**

Paddy Payne is Director, International Business Development, ENPS, Associated Press

VIEW FROM THE TOP

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BBC Worldwide Asia

What's on Screen

Dwayne Johnson and Issa Rae bring laughs to HBO



Dwayne "The Rock" Johnson has made a comeback in the fourth season of hit comedy series *Ballers*.

SINGAPORE – The hit comedy se-ries, *Ballers*, starring Dwayne "The Rock" Johnson; and *Insecure*, starring Issa Rae, are now available on HBO, as well as HBO Go and HBO On-Demand.

In the fourth season of *Ballers*, Dwayne Johnson stars as ex-football superstar Spencer Strasmore, who has re-invented himself as a financial manager for today's players.

Enter the COSMOS with FOX and National Geographic



FOX and National Geographic will be bringing *Cosmos: Possible Worlds* to audiences worldwide next March.

HONG KONG – Following its successful run in 2014 as one of the most-watched series ever on National Geographic channels internationally, FOX and National Geographic are bringing *Cosmos: Possible Worlds* to audiences worldwide in March next year.

The new season will build on the first two seasons of *COSMOS*, which transported a global audience to the furthest and most deeply hidden recesses of the universe.

Break free with iflix

KUALA LUMPUR – iflix 3.0 is now available, bringing with it the all-new iflix FREE service. Through the Movie of the Day feature, users can now gain access to a fresh new movie every day.

With 50 new videos added daily, iflix Snacks provides bite-sized videos in a comprehensive library of short-form content, while football fans can watch live matches of the Malaysian football league on the Football Malaysia on iflix feature.

The all-new iflix FREE service offers a fresh new movie every day in addition to live matches of the Malaysian football league.



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ESPN scores as first network to join Mediacorp Partner Network

SINGAPORE – Following a successful streaming of the 2018 FIFA World Cup on Toggle, its online interactive service, Singapore terrestrial broadcaster Mediacorp has ventured further in the sports segment by securing a strategic digital collaboration with ESPN.

Under the agreement with ESPN, Mediacorp will be the exclusive representative for all ad sales in Singapore for ESPN.com. The sports network will also launch a dedicated Singapore edition of the ESPN site — espn.com.sg — that will deliver a mix of local sports news and features, in addition to the coverage of sports and leagues from around the globe.

Parminder Singh, chief commercial and digital officer, Mediacorp, told APB: "Sports is an important growth segment, and we continue to provide premium sports properties — such as One Championship, Asian Games and Commonwealth Games — to our audiences on digital and free-to-air. Audiences value the cross-device convenience of watching live sports on digital, and are willing to pay for the experience."

The collaboration also marks ESPN as the first partner joining the Mediacorp Partner Network (MPN), an initiative that brings Mediacorp



At the signing ceremony are, from left: Tham Loke Kheng, CEO, and Parminder Singh, chief commercial and digital officer, representing Mediacorp; and from ESPN, Lance Peatey, general manager, South-east Asia, and Charles Classen, vice-president and general manager.

together with partners to deliver an enhanced experience for consumers and advertisers in Singapore.

"MPN allows us to augment our strengths in general news and entertainment, by partnering with digital platforms that target specific consumer interests across sports, property, automotive, travel, food, among others," Singh added.

"Through MPN, we aim to create richer content experiences for our audiences, and deliver sector-specific content solutions for our advertisers."

The MPN initiative will allow partners to leverage Mediacorp's commercial relationships with

global and local advertisers, and its sales teams which provide multi-platform solutions across TV, radio and digital to cater to advertisers' needs.

Singh concluded: "We see partner platforms becoming a key element of our offering for advertisers who are seeking to target audiences with specific consumer interests as part of their larger marketing and outreach strategy. Partners of MPN will also be able to benefit from Mediacorp's digital sales and operations capabilities across direct and programmatic channels to streamline platform monetisation efforts across our network."

MR is next evolution in human computing

and allows companies to create holograms of dynamic people and performances. With the recorded content, consumers can interact with holograms in AR, VR and on 2D screens.

MR is the next evolution in human computing, declared Microsoft's outgoing EVP of Windows and Devices, Terry Myerson, last September. "By combining our physical and digital worlds, we believe MR is the next evolution in human computing."

What, then, defines MR? Michael Zink, SMPTE 2018 Symposium 2018 chair and vice-president of technology at Warner Bros, offered this explanation to APB: "MR merges both real and virtual worlds into a single experience. Real-world physical objects and digital (virtual) objects exist at the same time and interact with each other."

At the SMPTE 2018 Annual Technical Conference and Exhibition to be held in Los Angeles on October 20, MR will also be one of the key discussion topics in the

Warner Bros' Michael Zink: "MR merges both real and virtual worlds into a single experience. Real-world physical objects and digital (virtual) objects exist at the same time and interact with each other."



discussion on how to create the "ultimate viewing experience."

But before MR can be moved to the big screen, SMPTE 2018 will examine its application on-the-move. Zink explained: "In the context of in-car entertainment, there are many opportunities to create compelling experiences. The vehicle is moving around and the position information will be known, as will the surroundings. As a consumer is driving around, the surroundings can be enhanced with virtual objects to create immersive experiences."

"As safety will always be the primary concern, this can be done

to enhance security features for drivers. And in the event that the consumer is not driving, many more compelling applications for education, entertainment, productivity or other purposes are possible."

SMPTE's current focus on in-car entertainment will serve as a useful platform to develop standards for MR, and expand its application across various verticals, Zink suggested. He also highlighted how the SMPTE AR/VR Study Group is working to understand the current landscape and potential areas for the development of standards, in a market that is still very new, rapidly changing and characterised by a proliferation of proprietary formats.

"To create a viable and scalable ecosystem, it is necessary for the industry to develop and agree on standards," Zink emphasised. "The emergence of in-car entertainment will only add to the need for standards, and SMPTE is engaging the industry so that it can be a leading voice in developing standards to enable technology adoption."

Data driving blockchain can be used to add business value

1 >>

source reviews of restaurants, retail locations and events.

Within two years of its founding, the P2P platform moved development forward on blockchain-incentivised video using micropayment.

Senatore maintained: "The fact that content creators can copyright their content through blockchain, monitor its consumption and ultimately get paid can, of course, be seen as a threat to the media companies, as the purpose of the blockchain appears to be disintermediating that function.

"However, I think media companies can benefit from the pirate-protection layer that blockchain enables, along with native payment features."

"Media companies are likely to access the disruptive forces of blockchain, and find their role within the network, which could be as publishers, trusted members of the network who sign content, who review content, and who raise capital through initial coin offering (ICO) to deliver other content."

Driving blockchain applications is the use of data. Today, audiences consume more content on more devices than ever before, with billions of gigabytes of data created each year.

When used correctly, this data can be used to add business value for publishers and marketers alike — and this is also a factor that drove Comcast to establish Blockgraph.

Formerly referred to as the Blockchain Insights Platform, the initiative is developed in collaboration with NBCUniversal, Disney, Altice USA, Channel 4, Cox Communications, Mediaset Italia and TF1 Group.

In a joint statement, the companies stated that they will work together on a new and improved advertising approach, which would facilitate the secure exchange of non-personal, audience insights for addressable advertising.

A Comcast spokesperson explained: "It is the mission of Blockgraph to ensure that a consumer's individual data is kept in a safe, private and secure location and thus protecting the entire TV ecosystem."

"Blockgraph allows the entire TV ecosystem to create its own shared information layer, without needing to move or combine any actual underlying private, proprietary, or sensitive data."

Designed as a P2P software platform based on blockchain technology, Blockgraph is aimed at supporting marketers, publishers and distributors with the ability to "anonymously and securely" match audience segments in order to en-

Deloitte EMEA Blockchain Lab's Antonio Senatore: "I think media companies can benefit from the pirate-protection layer that blockchain enables, along with native payment features."



able better ad targeting, measurement and reporting.

Blockgraph, according to the Comcast spokesperson, will create greater audience resolution, data scale and dynamic data activation across the entire TV and premium video ecosystem.

One application of the initiative is to empower advertisers and programmers with the ability to match data sets effectively to build and execute media plans based on custom audience segments, as well as to more "precisely and efficiently" target across a nationwide footprint of pay-TV customers and streaming device users.

Concurrently, programmers are able to offer improved targeting precision across screens, increasing the value and quantity of monetised inventory.

An inherent characteristic of the planned initiative is consumer privacy — each blockchain participant's data will stay in their own systems, and they will continue to manage the protection and privacy of their users.

"Blockgraph is being built for the entire TV ecosystem using a series of novel encryption, distributed systems, rights management layers, and a private blockchain ledger for data usage.

"This ultimately results in a system that will allow participants to ask questions of each other's data without having to take possession of anyone else's data to unlock marketing insights," the spokesperson elaborated.

"In short, Blockgraph will allow network participants to securely and anonymously link audiences with other participants in a way that allow business outcomes while respecting and protecting consumer rights."

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Riedel Communications' new RSP-1232HL SmartPanel features multiple full-colour multi-touch displays, 32 hybrid-lever keys, and the ability to leverage apps for multi-functionality.

Riedel's SmartPanel makes European debut

Riedel Communications' RSP-1232HL key-panel is making its European premiere. Building on the technology that powers the company's SmartPanel app-driven user interfaces, the new 1200-series SmartPanel represents a quantum leap forward in workflow flexibility, power and connectivity, says Riedel.

The new panel features multiple full-colour multi-touch displays, 32 hybrid-lever keys, the ability to leverage apps for multi-functionality, as well as adapt to the various workflows in use today.

Each of the RSP-1232HL's 32 lever keys features an integrated rotary encoder that provides control over parameters in the same location as the key. Users can choose custom colours for either the key labels or the LED rings that are positioned around each key. Each key label has an eight-character main label, a 16-character sub-label and user-defined icon labels.

In addition, the RSP-1232HL supports AES67 audio through two fibre SFPs and two RJ45 connections that offer a variety of daisy-chaining and redundancy options, delivering cabling flexibility.

Riedel Communications is exhibiting at **booth 10.A31**.

R&S brings new solutions to fuel market growth



R&S Venice integrates SDI and IP technologies for studio production and channel layout.

Rohde & Schwarz (R&S) is launching a storage product, which is an extension to its shared storage solutions for collaborative media production networks. Integrated with hardware and software components, this solution can be employed for broadcast, post production, and filed-based archive applications.

Another product making its debut at IBC2018 for R&S is the R&S TMU9evo, an air-cooled transmitter for ultra high frequency (UHF) applications. In this new transmitter, R&S is introducing R&S Multiband Doherty, which is designed to provide efficiency while lowering energy costs for medium-power transmission applications.

The company is also extending its R&S PKU100 family of satellite uplink amplifiers with the addition of its first outdoor satellite variant. The R&S PKU100 features adaptive pre-distortion, and is combined with the advantages of tube amplifiers such as compactness, lightweight and high efficiency.

To find out more, visit **booth 7.B21**.

What to expect on the IBC2018 show floor



AMSTERDAM – As its CEO, Michael Crimp, explains, IBC is continuing to grow in tandem with the evolving broadcast and media landscape (read more on page 10). What then are the exciting solutions and technologies that visitors can expect to see on the show floor? Here's a preview...

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IBC grows in tandem with evolving broadcast and media landscape

What is new at IBC2018?

Michael Crimp: Before I answer that, it is important to say what is the same. We still have 15 exhibition halls full of all the players in this rapidly changing industry. That includes some new and exciting businesses, such as the Alibaba Group, the sixth largest Internet company in the world.

Also the same since the first IBC 51 years ago is, the recognition that our visitors are seeking knowledge. They rely on IBC to provide the forum for information exchange, on the show floor, in the conference, and in the value-added experiences and networking opportunities we create.

In turn, we are seeing exhibitors evolve in the way they present themselves. When IBC started, exhibitors were selling big devices: it was obvious what they did, and the captions alongside the big boxes talked in terms of technical specifications.

Today, large numbers of the products at IBC are software packages of some sort, whether running on dedicated hardware, standard computers or in the cloud. Smart exhibitors are finding new ways of telling their stories. We see many more putting theatres on their stands so they can present the philosophies behind their solutions, perhaps introducing users who have successfully adopted the technologies.

What do you hope attendees take away from IBC2018?

Crimp: I hope they feel that they were part of something exciting, something important. Because IBC is conference, exhibition, technology showcase and networking opportunity all under one roof, the visitor who gets engaged with the event will come away with something that is much more than the sum of the parts.

Our exhibitors, I am sure, will come away knowing that the real decision makers, from more than 170 countries, were there and ready to do business.

Michael Crimp, CEO of IBC, provides a sneak preview of what visitors, exhibitors and delegates alike can expect at this year's IBC.



“Over the past decade or so the industry — and IBC — has moved away from broadcasting to a world where electronic media is delivered online and in public spaces.”

— Michael Crimp, CEO, IBC

What are the technological trends you are most excited about?

Crimp: It may be an odd thing to say in a technological industry, but it is not the technologies themselves that are exciting. Certainly, there are big things happening. I think we will see big advances in areas like artificial intelligence (AI), 5G and blockchain.

But the real excitement comes when these raw technologies are put into action. IBC puts these ideas in front of people who can imagine the possibilities and create the applications that transform our creativity and our business models.

What are the hottest trends in the industry at the moment?

Crimp: I think the top trends are well established and you do not need me to talk about the shift to IP connectivity and software-defined topologies; about the convergence of broadcast, IT and telecoms; and about the search for new

formats, whether that is 4K/Ultra HD (UHD) or virtual reality (VR).

What is exciting is the way that the business that uses these technologies is changing. How will broadcasters, telcos and streaming companies co-exist? Will over-the-top (OTT) providers be the new broadcasters, or will producers sell direct to consumers? These are the sorts of questions that are debated at IBC.

Advertising still seems a reliable and lucrative way to fund content production and delivery. Will programmatic advertising planning and dynamic ad insertion transform the cost/revenue model? Or will new monetisation methods — maybe blockchain-managed micropayments from consumer to producer — transform the creative industry?

These issues may not be solved at IBC2018, but they will be much talked about. The breakthrough ideas in technology often come from startups who will take a small space at IBC and achieve a dramatic

result. One of the key reasons to come to IBC is to poke around in the corners of the exhibition and find these new ideas.

Why are big industry shows important to the industry?

Crimp: I can only speak for IBC, of course. And we do a lot to ensure that IBC is more than just a vast trade show by adding value for every exhibitor, whether it is the chance to debate the real issues of the day in the conference or simply experience the state-of-the-art in production and delivery through one of the Big Screen movies.

Over the past decade or so the industry — and IBC — has moved away from broadcasting to a world where electronic media is delivered online and in public spaces, and where adjacent industries are adopting video and audio as inherent means of communication. Alongside broadcasting, the industry is expanding and IBC's value as a global forum is expand-

ing, too. In the earliest registrations for IBC2018, we are seeing measurable growth in visitors from adjacent markets such as telecoms and the cloud, showing that IBC as an experience, is seen as important.

How are the attendees and companies participating in IBC changing?

Crimp: The last stage of development in IBC was a move away from an engineering-based event to one which attracts debate from the creative, operational and commercial sides of media businesses. Today, that sweeping approach to all the issues makes IBC the natural forum for those in adjacent industries that are adopting our skills and technologies.

So we have specialist days in the conference, which attract those from the telecoms industry, for example, or those charged with managing cybersecurity. Where appropriate, IBC creates a hosted programme to bring leaders from adjacent industries into the event and into the community.

How do you ensure the content at IBC stays fresh year by year?

Crimp: By listening. We do not say it as often as we used to, but IBC is organised by the industry, for the industry. Through bodies like our content steering group and the IBC Council, we get input from those around the world who are leading the industry today.

These create a halo effect. Keith Underwood, this year's guest chair for the content steering group, brought in some of his own contacts, and talked to others. Having access to high-level address books in this way brings us a huge amount of insight.

At the same time, we drive the agenda from within, looking to influence the industry on a wider basis. This year, for example, we are concentrating hard on diversity, in age, gender and race. It is important to the whole team that we lead in showing the world we are an inclusive industry.

Media Links debuts MDP3040 IP Media Gateway



Media Links is highlighting how its MDP Series addresses the real need in the marketplace for “compact and portable, tightly integrated, affordable and easy-to-use” platforms that enable the transport and delivery of real-time IP media services.

For instance, the new MDP3040 IP Media Gateway (pictured), which is making its IBC debut, is a versatile two-channel 4K/

Ultra HD (UHD) TICO lightweight compression encoder/decoder that supports several configurations. Two 12G-SDI inputs can be TICO-encoded and transmitted over dual 10GbE network trunk interfaces; or two TICO-encoded network streams can be simultaneously received and decoded as two 12G-SDI outputs.

For delivering 4K/UHD signals over ex-

isting 3G-SDI infrastructures, the MDP3040 can function as a standalone two-channel 12G-SDI input to a two-channel TICO-compressed BNC output encoder, or as a two-channel TICO-compressed BNC input to a two-channel 12G-SDI output decoder.

At **booth 1C31**, visitors can also check out the second-generation MDP3020, which now comes with new features,

including support for both 3G/HD/SD uncompressed, as well as J2K compressed, video; two channels of bidirectional hitless data; and both 10GbE and 10GbE dual network trunk interfaces. The unit's LLDP trunk diagnostic and keepalive mechanism now interoperates with Media Links' MD8000 product family, MDX switches as well as other MDP3020 units.

KVM-over-IP brings IT and broadcast into the same world

In an attempt to create optimal and efficient broadcast workflows, Guntermann & Drunck (G&D) is offering its keyboard, video and mouse (KVM) solutions, in turn bringing IT installations into the world of broadcast.

For instance, G&D is showcasing the ControlCenter-IP, a matrix system to extend and switch computer signals via IP-based networks on Layer 3. With ControlCenter-IP, even the largest IT installation can be scaled and implemented via IP access, says G&D.

When paired with the DP-Vision-IP extender, and the new extenders for KVM-over-IP DP1.2-Vision-IP and DL-DVI-Vision-IP, the central appliance ControlCenter-IP forms a strong KVM matrix that offers "pixel-perfect" video quality, high performance and reliability for broadcast-typical control rooms.

The ControlCenter-IP complements G&D's existing portfolio, and is integrat-



ed with functionalities such as monitoring and simple network management protocol (SNMP), scripting and scenario switching, push-get and CrossDisplay-Switching for intuitive operation at multi-monitor workstations.

Visitors to **booth 1.D39** can also check out G&D's portfolio of classic KVM systems, which has been updated with the launch of six new

versions of the compact matrix series ControlCenter-Compact.

Current additions include expansion stages with 176 and 128 CAT ports, as well as mixed versions with 32 fibre ports, and 16/32/48/80 CAT ports. All systems feature G&D's HDIP compression technology in the latest development stage, which enables a lossless transmission of video signals with a resolution of 4K/ Ultra HD (UHD) at 60Hz.



The ControlCenter-IP is a matrix system to extend and switch computers signals via IP-based networks on Layer 3.

Brainstorm demos 'hyper-realistic' AR action

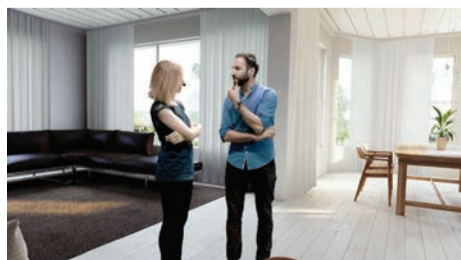
3D graphics and virtual studio solutions provider Brainstorm is highlighting its latest enhancement for "hyper-realistic" content creation.

For instance, the company is demonstrating a theatre presentation based on photo-realistic virtual sets, augmented reality (AR) and broadcast applications, where the synthetic images will be "undistinguishable" from real images. According to Brainstorm, this is made possible through the combination of the Brainstorm eStudio renderer with the Epic Games Unreal Engine within the new Combined Render Engine application.

At **booth 7.C19**, Brainstorm is also exhibiting Aston, a motion graphics creation, CG and playout system. Aston is packed with advanced graphics creation tools and object properties, including advanced primitives, textures, materials and shaders. Consequently, Aston is able to perform any graphics applications, from channel branding to news and sports graphics with charts, classifications or bumpers, and from data-driven statistics to AR interactive objects.

Brainstorm is also launching the third edition of InfinitySet, which combines Aston graphics material to empower users to produce visually engaging content within the virtual studio environment. InfinitySet 3 provides AR features used by broadcasters globally to create graphics and shows. Technologies like TrackFree or features such as TeleTransporter, 3D Presenter or VideoGate are also integrated within InfinitySet.

To complete the graphics range, Brainstorm is displaying Neuron, the company's pathway to broadcast graphics, traffic and branding management solution.



Brainstorm is launching the third edition of its InfinitySet, which supports AR features used daily by broadcasters around the world to create programmes using virtual sets and graphics.

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xG Scorecard is a multi-platform media analysis and business intelligence solution from Imagine Communications that is designed to allow media companies to discover trends and spot correlations in managing ad sales.

Imagine Communications leads broadcasters' technology transition



Imagine Communications is demonstrating xG Scorecard, a business intelligence solution that provides insights and "precise knowledge" of how spots drive sales for advertisers.

The multi-platform media analysis and business intelligence system brings together data from traditional sales and traffic systems, operational databases, ratings, clickstream and even social networks into a single view that can be customised to meet the needs of specific users. With xG Scorecard, users are able to simplify the process of discovering trends and spotting correlations, thus allowing media companies to increase revenue and decrease costs across multi-channel, multi-platform, and multi-market operations, says

Imagine Communications.

Alongside xG Scorecard, Imagine Communications is also highlighting its expertise in live production with the showcase of the Selenio Network Processor (SNP) and the 4K/Ultra HD (UHD)-ready Epic MV multiviewer. When paired together, both the solutions are able to monitor the signals of multiple dedicated screens, with inputs and monitor outputs all in IP.

To address the bandwidth challenge associated with monitoring uncompressed 4K/UHD signals, SNP is equipped with the ability to make a "proxy signal" from every 4K/UHD signal that it transmits in both directions. Epic MV will then use these signals — which are in HD resolution — instead of the 4K/UHD original, resulting in a reduction in overall system cost.

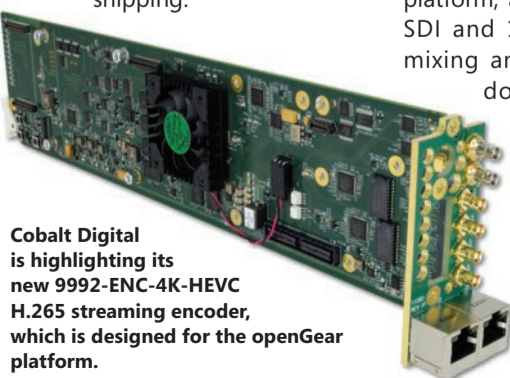
As for playout, Imagine Communications has developed Versio Platform, a cloud-native, micro services-based playout ecosystem; Versio IOX, a storage solution; and Nexio + AMP, a media server with hybrid SDI/IP and HEVC/H.265 capability.

Imagine Communications is exhibiting at **booth 4.A01**.



Cobalt Digital adds 12G-SDI support to openGear platform

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



Cobalt Digital is highlighting its new 9992-ENC-4K-HEVC H.265 streaming encoder, which is designed for the openGear platform.

The 9904-UDX-4K is equipped with the company's latest generation of advanced image and audio processors for the openGear platform, and provides quad 3G-SDI and 12G-SDI I/O with SDI mixing and demuxing and up/down/cross-conversion.

Other options include RGB colour correction and SDI-to-HDR up-mapping via Technicolor's high dynamic range (HDR) Intelligent Tone Management (ITM) processing.

IBC 2018 is

Interra Systems tapping into AI and ML

At this year's show, Interra Systems is planning to play a larger role in the digital media solutions space with the introduction of Winnow, an enhancement that encompasses the company's innovations in artificial intelligence (AI) and machine-learning (ML) techniques.

Designed as an ML-driven enhancement, Winnow can be integrated with Interra Systems' Baton QC solution for users to deploy in both cloud and on-premises environments. Enabled by AI, Winnow provides media companies with a compliance and identification solu-

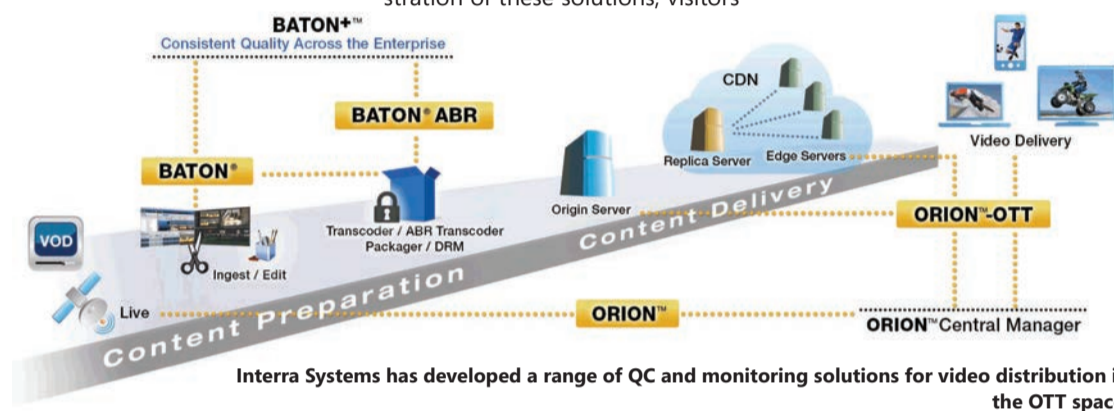
tion powered by ML and computer vision technologies. Furthermore, the enhancement is able to automatically check for compliance and identification of content against regulations in different countries, regions and organisations.

Interra Systems is also exhibiting its Baton ABR and Orion-OTT solutions for over-the-top (OTT) file-based delivery. Both solutions are able to perform QC and monitoring for video-on-demand (VoD) content from ingest to network operations centres and other distribution points. Through the demonstration of these solutions, visitors

are able to see Baton ABR's checks at the pre- and post-transcode stages, as well as how Orion-OTT's checks and features support QoE for every stream on every device.

Particularly for Orion-OTT, the solution can be deployed for live-event streaming for monitoring of large number of streams for adaptive bitrate (ABR) compliance along with audio-video quality checks. The solution suite also supports closed captions, ad verification and digital rights management.

To find out more, visit Interra Systems at **booth 7.C09**.



VSNCrea makes IBC debut

VSN is unveiling VSNCrea, the company's new software for TV, radio and second-screen traffic and scheduling. The installation of VSNCrea will enable media companies to better manage their content

production catalogues, whether owned or acquired from third parties, as well as its advertising, production workflows, programming and broadcast planning — all within a single user interface.

In addition to an intuitive Web interface, the HTML5-based VSNCrea also provides extra information such as analytical data about the "actual profitability" of the content. The software is accessible from any Web browser and device by multiple users, and can be operated in the cloud to enhance the ability of users and departments working together on a collaborative basis.

The system can be used specifically within TV channels, radio stations or Web TV platforms for traffic and scheduling, programme planning, advertising management, and control of third-party TV rights acquired for broadcast, among others. Other features include the ability to change language within the user interface, the consolidation of the final broadcast, and the analysis of the programming and content return-on-investment (ROI) through analytical reports.

VSN is also demonstrating VSNE Explorer media asset management (MAM) software, which is now integrated via API with the artificial intelligence (AI) systems of IBM Watson, Google Cloud, Microsoft Azure and Etiqmedia for automatic metadata detection.

The integration of VSNE Explorer MAM with these tools, according to VSN, ensures that media management becomes "more efficient, accurate and easy to use", allowing a greater control of all content, either available in storage or being ingested, and reducing the time and costs necessary to obtain higher quality content.

VSN is exhibiting at **booth 7.B19**.



VSNCrea and VSNE Explorer are some of the solutions VSN is highlighting at IBC2018, and are designed to enhance media operators' workflow efficiencies with the integration of cloud and AI support.

also the stage for Cobalt's new 9992-ENC-4K-HEVC H.265 streaming encoder for openGear. The platform supports quad 3G-SDI and 12G-SDI inputs, and is configurable as a multi-channel encoder of up to four channels, for 1080p60 signals and below using MPEG-2, AVC/H.264, or HEVC/H.265 video compression standard.

Also on display is the 9971-MV18-4K series of openGear multiviewers. Featuring support for the latest signal types, the MV18 integrates 18 4K/Ultra HD (UHD) 12G-SDI auto-detects inputs, which can be scaled as needed

across a full 3840x2160 4K/UHD raster output.

Completing Cobalt's demonstration at **booth 10.B44** are the OG-PC computer card and 9914DA-4Q-12G distribution amplifier. Designed for SMPTE ST 2082 single wire 4K/UHD signal replication and transmission, the 9914DA-4Q-12G is configurable and supports quad 1x4, dual 1x8, or full 1x16 modes of operations.

As for OG-PC, it is an x86 computer on an openGear card, and takes advantage of the redundant power and cooling features of the openGear frame.



Dejero is introducing enhancements to its range of connectivity solutions, including CellSat, GateWay, and EnGo.

Dejero enhances production crews' connectivity from field to studio

Dejero is showcasing the CellSat solution, which now includes a new mid-stream activation feature that simplifies switching between cellular-only and CellSat transmission paths. According to the company, the new feature empowers broadcasters with "greater cost control" when contributing video content from the field.

Dejero CellSat blends cellular connectivity from multiple mobile network carriers with Intelsat's Ku-band IP satellite connectivity to provide the necessary bandwidth to deliver enhanced picture quality and reliability while crews are on location. In May this year, the solution was deployed by Canadian broadcaster Global TV for the live coverage of the Royal Wedding of Prince Harry and Meghan Markle.

In addition to video transport up to 20Mbps with Dejero HEVC/H.265-capable encoders, the CellSat connectivity service also enables data transport for applications such as email and Internet access. The solution can be deployed in newsgathering and

field production vehicles, or with flyaway antenna systems.

Alongside CellSat, Dejero is displaying the GateWay M6E6 router for high-throughput bidirectional data transport. Equipped with six modems and Ethernet ports, the GateWay solution allows crews working on location to access their newsroom or media asset management (MAM) systems, send and receive large files, access cloud services, and communicate with their colleagues back in the studio via voice-over-IP.

Completing Dejero's exhibition at **booth 11.C15** is the demonstration of the EnGo mobile transmitter. As the broadcast industry shift towards the HEVC/H.265 video compression standard, Dejero has combined its auto-transport and adaptive bitrate encoding technology with this new compression standard within EnGo. The result is an enhanced EnGo mobile transmitter that provides increased processing power to improve overall performance while delivering enhanced picture quality.



Shotoku highlights robotic and manual camera support systems

Shotoku Broadcast Systems is displaying SmartPed, its robotic XY pedestal that is designed to address the creative and commercial demands of on-air environments.

The three-wheel pedestal has been upgraded with multi-zone collision avoidance and detection systems, an electro-mechanical steer/drive system, and a new height column that does not require pneumatic balancing. Additionally, SmartPed offers switchover between local and remote operation, making the pedestal "versatile and easily operated" in any application.

Alongside SmartPed, Shotoku is also highlighting SmartRail, a rail camera system that supports floor or ceiling operation and a range of height column configurations in both upright and inverted modes. SmartRail combines the flexibility of Shotoku control systems with a rail-based dolly and column system to provide a perspective to any live, multi-camera studio production.

At **booth 12.E42**, Shotoku is introducing the SD and SE manual tripod series. The

new SD range is developed for handheld cameras, and is available in two variants — SD20 and SD40 — which supports payload up to 3kg and 5kg respectively. The systems feature fixed counterbalance and drag systems tailored to the payload of the head, and is completed with two-stage tripod mid-level spreader and carrying case.

The new SE range evolved from a concept of providing a support with functionality and wide-ranging applications for the extended range of camera systems. The SE80 and SE150 are the first products to launch from this range, and feature a drag system to ensure "smooth on-air moves", and a multiple level counterbalance system to provide accurate balancing for a wide range of cameras. The SE80 supports a payload range from 0-10kg, and the SE150 supports a payload range from 0-16kg.

Shotoku Broadcast Systems' SD20 tripod is equipped with payload support up to 3kg.



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Lawo streamlines production workflows



Lawo is showcasing solutions for efficient IP-based broadcast production workflows, covering and integrating video, audio, control and networking.

The company is presenting new virtual modules for a software-defined V_matrix routing, processing and multiviewing platform, which is designed to form a backbone for IP-based workflows.

At **booth 8.B50**, visitors can also expect a “spectacular” new IP-based audio product, which Lawo says will push the limits of current console designs to a “completely new level”. This, the company adds, will enable all of its existing and future customers to elevate their installations while securing their existing investments.

Other highlights include the demonstration of a cost-saving contribution solution for audio and video. Besides performing traditional contribution tasks, the solution is also designed to be a “budget-saving addition” to remote productions that are based on third-party audio equipment.



At IBC2018, Lawo is showcasing solutions for efficient IP-based broadcast production workflows.

Anton/Bauer powers up Vitec Group's showcase

Anton/Bauer, a division of The Vitec Group, is introducing the Dionic XT line of batteries. As the latest addition to the company's Dionic battery series, Dionic XT is a 14V Li-Ion battery capable of delivering up to 12A of continuous power for cinematographers, broadcasters,

rental houses, and users for whom battery performance and reliability are essential.

Available in two models — the Dionic XT90 and the Dionic XT150. The Dionic series features ABS thermoplastic polymer and rubber construction that protects the battery

while delivering performance even in demanding conditions, including extreme heat, humidity and cold. Dionic XT batteries not only work with Anton/Bauer's complete line of battery charging systems, but they are also cross-compatible with other brands' charging systems, and offers performance for powering accessories such as portable LED lighting.

Gemini, a 2x1 soft panel from another Vitec Group's division Litepanels, is also on display at **booth 12.E65**. The soft panel is integrated with the Anton/Bauer Cine VCLX battery, and allows users to operate every function of Gemini with its intuitive on-board controls and user interface with multiple control options.

Introduced at IBC last year, Gemini has been updated through the new firmware to provide a wider variety of cinematic effects — such as emergency lights, fire, TV and hue bursts — that are fully customisable and that can be saved to presets.



Dionic XT from Vitec Group's Anton/Bauer is a 14V Li-Ion battery capable of delivering up to 12A of continuous power.

Monitoring audio in an IP workflow

TSL Products is highlighting its PAM1-IP and PAM2-IP audio monitors, which are now integrated with support for SMPTE ST 2110 networks. The PAM-IP range also supports Ember+ protocol for edge device control within IP networks.

With two 10GbE SFP+ ports included on the PAM1-IP and PAM2-IP, users can monitor audio carried within SMPTE ST 2110 and ST 2022-6 multicast streams. Both units also display the accompanying video content on the front panel of the unit, thus enhancing the overall monitoring experience.

Furthermore, users can use the PAM1-IP and PAM2-IP to monitor audio-only content, such as Dante or AES67 audio flows, when connected to an IP network infrastructure.

At **booth 10.B41**, TSL Products is also debuting the MPA-1-

Mix SDI, MPA1-MIX-8 and MPA1-SOLO-8 studio audio monitors to the European market. Designed for system-wide connectivity through simple network management protocol (SNMP), TSL Products' MPA1 monitoring products are able to contribute to a wider monitoring solution using TSL's advanced

control system, or any third-party control system supporting SNMP.

Besides the latest addition, the MPA1 range also includes MPA1-MIX-MADI and MPA1-MIX-DANTE, which provide users the workflows and benefits, while extending the range of connectivity already available in the MPA1 range.



TSL Products' PAM2-IP audio monitor features two 10GbE SFP+ ports, allowing audio signals to be carried within SMPTE ST 2110 and ST 2022-6 multicast streams.

Canare Electric offers 12G-SDI product line for 4K and 8K broadcasting

In the race of pursuing higher resolution images like 4K/Ultra HD (UHD) or even 8K, Canare Electric is focusing on providing solutions for 12G-SDI transmission lines, including coaxial cables, BNC connectors and video patchbays.

Building on the success of its L-5.5CUHD, Canare has enhanced the line-up in the L-CUHD series of 12G-SDI 75Ω coaxial cables and its corresponding BNC connectors, which are all designed to deliver mechanical performance and easy handling of the cable, in addition to signal transmission.

As the flagship model of the L-CUHD series, the L-5.5CUHD is developed with the aim of transmitting 12G-SDI signals over a distance of 100m. Alongside the L-5.5CUHD, Canare is also exhibiting the L-3.3CUHD

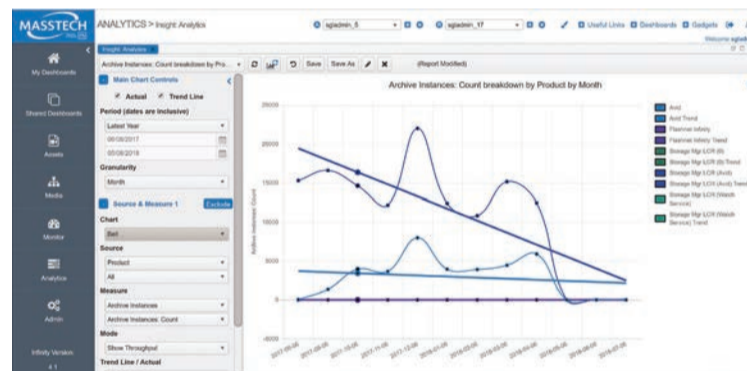
and L-8CUHD, which feature a diameter of 5.5mm and 11.1mm respectively.

In addition to the BNC connectors developed for its coaxial cables, Canare is releasing another BNC-type PCB mount receptacle, which can be used as an interface connector for 12G-SDI devices.

32MCK-ST(S), a 32-channel video patchbay, is also on display at **booth 10.B40**. Packed within a 1RU panel, the 32MCK-ST(S) allows the connection of a standard size BNC connector, and is available in either the Normal Type or Straight Through Type.

Furthermore, the 32-channel video patchbay 32MCK-ST(S) uses a dedicated cable L-2.5CHWS, which offers flexibility because of its stranded centre conductor and high-density double braided shield.

Masstech addresses storage challenges



Masstech Innovations' FlashNet is equipped with a dashboard and toolset for archiving and restore functionality, system health, monitoring, analysis and more.

This IBC2018, Masstech Innovations is focused on showcasing a number of new initiatives that are designed to help video-centric organisations to create optimised storage solutions, utilising the latest cloud and hybrid technologies.

FlashNet, for instance, is Masstech's media object storage application, and is a content archive, storage and life-cycle management system. This cross-platform content management system utilises programmable, rules-based workflows, and is able to integrate with media asset management (MAM), production asset management (PAM), newsroom computer systems (NRCS), automation video server, and library systems to improve the efficiency of media companies' storage.

Also on display is MassStore, Masstech's media services framework for advanced applications. MassStore features a collection of services that collectively provides media management functions and workflow automation. Built-in

integration management also simplifies accommodation of disparate systems from multiple vendors.

MassStore features integrated transcoding capabilities and support for all major wrappers and codecs, allowing for flexible generation and management of proxies, metadata and thumbnails. The solution, according to Masstech, can be scaled to meet media companies' varying functional and budgetary requirements.

The flexibility of MassStore can be seen in the Masstech News workflow, the company's news solution that allows users to archive, search, retrieve and exchange local and remote content from their newsroom system interface. By integrating with NRCS and PAM systems, MassStore automates the archive process, attaches metadata to news assets, and enables users to search and view their video archives directly from their NRCS user interface.

To find out more, visit Masstech at **booth 7.C55**.

Newtec demonstrates bandwidth-boosting technologies

As 4K/Ultra HD (UHD) and high dynamic range (HDR) become more prevalent, broadcasters delivering this content over satellite require higher bitrates and more bandwidth.

To address these requirements, Newtec is offering solutions such as the MCX7000 multi-carrier satellite gateway, which utilises the DVB-S2X standard to introduce the concept of channel bonding.

MCX7000 allows a large 4K/UHD transport stream to be carried in parallel over up to three satellite transponders.

Because 4K/UHD and HDR exert more pressure on contribution

links, required bitrates typically exceed standard available satellite frequency slots. Channel bonding thus provides operators with the freedom to combine multiple non-adjacent slots.

At **booth 1.A49**, visitors can also check out the MDM2510 and the MDM5010. The former is Newtec's latest DVB-S2X wideband modem, and is a two-way, high-throughput satellite (HTS) modem that supports a wide range of IP services. The MDM2510, like the rest of Newtec's DVB-S2X modem portfolio, is able to address

wideband HTS transponders up to 500MHz.

The MDM5010, also a high-throughput modem, is capable of handling 500Mbps of traffic. It enables network operators to set up almost any type and size of network or any available satellite, according to Newtec. The MDM5010 also supports a diverse range of IP services, including Internet/Intranet access, voice-over-IP (VoIP), backbones for mobile backhauling, as well as trunking to fibre restoration/backup services, contribution and multicasting services.



Newtec's MCX7000 multi-carrier satellite gateway introduces the concept of channel bonding for operators to more efficiently deliver 4K/UHD and HDR content.

Type R set for European debut

Making its European debut for Calrec Audio is Type R, an IP-based radio system. Type R utilises standard networking technology and combines it with configurable soft panels that can be tailored accordingly to an operator's needs.

Type R's physical control system comprises three panels: a fader panel, a large soft panel, and a small soft panel. Each is compatible with commercial off-the-shelf (COTS) hardware, and powered over Ethernet to keep cabling to a minimum.

Packed within 2U, Type R is integrated with I/O resources, and supports up to three independent mixing environments in a single core. Type R is also equipped with the ability to use multiple mixing engines, allowing users to deploy the IP-based radio system as independent studio consoles, microphone

processors or utility mixing.

Calrec has also upgraded its Brio audio consoles with expanded channel capability. The new Brio DSP expansion packs are now available, bringing the Brio12 up from 48 to 64 input channels, and the Brio36 from 64 to 96 input channels.

Calrec's Brio consoles are designed to support a multitude of broadcast applications from live sports to news and entertainment. Particularly for the Brio36, the console includes a range of on board I/O, and is integrated with Hydra2 network compatibility.

To find out more, visit Calrec at **booth 8.C61**.

Designed as a IP-based radio system, Calrec's Type R utilises standard networking technology with configurable soft panels to cater to users' needs.



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Life beyond Netflix: Specialist OTT services find its niche

promotions

Two decades ago, the idea of streaming video over the Internet is considered an “out of the box” approach compared to traditional cable and terrestrial networks. Today, over-the-top (OTT) video streaming is already a norm, driven by platforms such as Amazon Prime Video, Netflix and YouTube. Already packed with endless hours of entertainment content, these platforms nevertheless still constantly update their content library with new titles, keeping subscribers “within the box” by staying on that particular platform. While the OTT marketplace may appear to be mature, and dominated by a number of key players, **MTM**, a research and strategy firm, sheds lights on new opportunities for niche players to gain a foothold in the same space.

Once upon a time, there was pay-TV

In July this year, a report by Ofcom declared there are now more UK subscribers to streaming services than to traditional pay-TV. Unsurprisingly, Netflix leads the way in the field of OTT services, with an estimated 9.1 million UK subscribers. Its UK platform currently offers 3,600 film titles, and has proposed a total of 700 original series by 2019; as viewers, we are spoilt for choice. One interesting challenge is whether the future of OTT lies with large-scale services or whether, as the sector matures, there will be a place in our hearts (and wallets) for small services too.

I stream, you stream, we all stream

We all know “Content is King” but after spending an average of 51 minutes a day scrolling through the 76,000 micro-genres of Netflix, would it not be grand to cut down your browsing and spend time on

what you *really* care about?

Well, that is exactly what specialised streaming services such as Marquee TV — “a Netflix for the Arts” — are looking to offer: delivering content to small but passionate audiences who share an interest or hobby.

Genrefication?

Niche OTT services cater to a particular audience by curating a library of titles only related to a specific interest or genre. They rely on a sound understanding of their audiences, and use expertise rather than algorithms to provide high-quality, hand-picked content.

Some of the most popular specialised services include Crunchyroll — an East Asian anime provider with over one million paid

subscribers — and also Passionflix, who offers a selection of classic, romance-themed content, including a ranking system to measure the ‘love’ factor of each film; naughty, but niche.

Flexible and inexpensive pricing plans will also help specialist services compete. Earlier this week, one of the most highly anticipated OTT platforms, DC Universe, also announced more details ahead of their autumn launch. A glimpse of the pricing plans shows an option to pre-order a yearly subscription, with an additional three months at no extra cost.

In some instances, niche players are building online communities by tailoring their content to specific demographics. Hindi production company, Eros, for example, now

Niche OTT services cater to a particular audience by curating a library of titles only related to a specific interest or genre.



Since its expansion into streaming media in 2007, Netflix has been one of the leading players in the OTT space with the vast amount of content it holds in its library, which ranges from variety programmes, TV series and even its originals series.

offers over 11,000 film titles and hosts more local content than Netflix and Amazon combined.

The silent majority

Former BBC producer, Navid Akhtar, is the founder of subscription video-on-demand (SVoD) service Alchemiya Media — a specialised OTT player created in 2015 “for the silent majority: the 99.9% of Muslims who lead peaceful, productive lives as citizens of the world”. It responds to negative perceptions of the Muslim community, as a result of non-representative coverage in mainstream UK media. Over the past three years, the platform has gained over £115,000 (US\$146,248) in public crowdfunding, allowing a library expansion of 50 to 500 titles.

Another example of a com-

munity-focused platform is Lebara Play — an OTT service that aims to bridge the content gap for migrant audiences across 39 European countries. Originally a telecoms provider, Lebara Play claims to understand the migrant experience by being the only multi-ethnic entertainment channel offering 13 different languages and flexible payment options.

While the mass-market OTT services — primarily Netflix — will continue to dominate the market in terms of subscribers, it looks like there will also be a place for niche services too. Especially, if they can, as the CEO of Crunchyroll put it, “offer everything for someone, rather than something for everyone”.

Visit www.mtmlondon.com to find out more.



White Paper @ www.apb-news.com

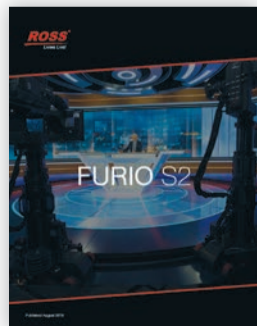
❖ The smart evolution of Furio

Since its introduction in 2008, Furio has revolutionised not only studio robotics, but also the way in which broadcast news is produced, according to Ross Video.

Furio’s ability to produce “silky smooth”, sweeping on-air moving shots that can be precisely repeated over and over again at the push of a button has allowed broadcasters to create a more dynamic look, while delivering higher quality and lowering operating costs.

Unlike jibs or other specialty camera systems (for example, robotic arms or competing robotic dollies), Furio also has the payload capacity to support a full-sized camera and teleprompter. This gives it the flexibility to deliver “spectacular beauty shots”, while serving as the primary camera in the production.

To find out more, download the white paper at <http://go.rossvideo.com/ross-furio-s2>.



2018 Calendar of Events

SEPTEMBER

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

OCTOBER

October 2 - 4
APSCC 2018
Shangri-La Jakarta Hotel, Indonesia
<http://apscsat.com/>

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

October 25 - 27
BROADCAST INDIA 2018
Bombay Exhibition Centre, Goregaon, Mumbai, India
www.broadcastindia2018.com

October 29 - November 1
ASIA VIDEO SUMMIT 2018
Intercontinental Hong Kong
www.casbaa.com

NOVEMBER

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

DECEMBER

December 6 - 7
IABM ANNUAL INTERNATIONAL BUSINESS CONFERENCE & AWARDS 2018
The UK
www.theiabm.org
Venue to be announced

2019

MARCH

March 4 - 7
ABU DIGITAL BROADCASTING SYMPOSIUM 2019
Malaysia
www.abu.org.my
Venue to be announced

March 12 - 14
CABSAT 2019
Dubai World Trade Centre
The UAE
www.cabsat.com

APRIL

April 6 - 11
NAB SHOW 2019
Las Vegas, Nevada, USA
www.nabshow.com

MAY

May 22 - 25
KOBA 2019
COEX Exhibition Centre, Seoul, South Korea
www.kobashow.com

JUNE

June 18 - 20
CONNECTECHASIA2019
• **BROADCASTASIA2019**
Suntec Singapore
• **COMMUNICASIA2019**
Marina Bay Sands, Singapore
www.connectechasia.com/

AVIA brings best practices in self-regulation and anti-piracy to Taiwan

TAIPEI – The potential for Taiwan’s vibrant video-on-demand (VoD) sector remains largely untapped, according to Nicole Chan, chairperson for Taiwan’s National Communications Commission.

Speaking last month in a roundtable event hosted by the Asia Video Industry Association (AVIA) — formerly CASBAA — Chan added: “Taiwanese consumers appreciate the choice, control and convenience offered by legitimate VoD services, which also provide a legal and compelling alternative to online piracy.

“Not only that, Taiwan has a vibrant VoD industry as evidenced by the numerous local startups, new ventures by traditional players, and the creation of two over-the-top (OTT)-related associations.”

The event was also attended by Taiwan’s OTT Association as well as New Media Entertainment Association (NMEA), who reaffirmed its commitment to disseminate

the latest developments across the entertainment industry. The NMEA also pledged to build bridges between vendors and governments; to that end, it recommends best-in-class content, coordinates anti-piracy efforts and enables a more creative environment while respecting original content.

Chien Ta Wei, chairman of the Taiwan OTT Association, added: “While streaming content through OTT platforms has become a lifestyle, legitimate OTT operators have faced difficulties due to content piracy.

“Our core mission is to partner with operators and governments to promote legal content and responsible viewing habits among consumers; as well as to participate in joint efforts to combat illegal content operators including set-top boxes, mobile apps and websites”.

Roundtable participants discussed the subscription video-on-

demand (SVoD) Content Code, a self-regulation framework recently announced by SVoD service providers in South-east Asia. The code sets out principles to ensure that content offered on participating platforms is authentic, free from hate speech, hate crimes, pornography and other forms of inappropriate content.

Content providers also pledged to provide consumer control features to let users make appropriate viewing choices for themselves and their families.

The code not only serves to provide VoD platforms a standard to hold themselves to, but it also helps distinguish legitimate services from pirate sites.

Roundtable participants also pooled together their thoughts on the common concern of combating online piracy; discussing insights, trends and best practices from Taiwan and around the world. Recognising how the availability of



A roundtable event hosted by the Asia Video Industry Association (AVIA) last month in Taiwan shared best practices in self-regulation and anti-piracy in the OTT and VoD sphere.



“It is important that we commit to a multi-stakeholder governance approach as well as an environment that stimulates innovation.”

— Louis Boswell, CEO, AVIA

legitimate VoD services contributes to a decline in online piracy, participants explored how to better coordinate enforcement efforts, encourage stronger private-public sector partnerships, the impact of current regulation, the role of technology in enhancing security, as well as how the VoD industry can make legal content more accessible than ever before.

Louis Boswell, CEO of AVIA, concluded: “The nascent VoD industry in Taiwan should be en-

couraged to grow. To do that, it is important that we commit to a multi-stakeholder governance approach as well as an environment that stimulates innovation.

“We are happy to play our part to encourage such dialogue. Otherwise, without legitimate VoD content providers, consumers may instead choose to go to pirate sites for content, where there are no checks or standards; leaving them vulnerable to inappropriate content”.

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EBU conducts 4K/Ultra HD HFR tests

At last month's European Championships in Berlin, the European Broadcasting Union (EBU) led trials with five EBU members and 19 industry partners of production workflows to shoot, process, record and distribute live 4K/Ultra HD (UHD) content, with high frame rate (HFR), high dynamic range (HDR) and next-generation audio (NGA). The trials, according to the EBU, involved the "world's first" live distribution of 4K/UHD content with both HDR (HLG/BT.2100) and HFR (100 fps, 2160p100).

Blackmagic Design unveils DaVinci Resolve 15



The latest edition of Blackmagic Design's professional editing, visual effects,

motion graphics, colour correction and audio post-production software, is now available as a free download from the Blackmagic Design website. DaVinci Resolve 15 fully integrates visual effects and motion graphics, making it "the world's first" solution to combine professional offline and online editing, colour correction, audio post production, multi-user collaboration and visual effects together in one software tool. DaVinci Resolve also adds an entirely new Fusion page with more than 250 tools for compositing, paint, particles, animated titles and more.

Next Month @ Creation

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HDR brings new dynamics to content production & consumptions

Whether broadcasters and content producers are working in 4K/Ultra HD or HD, it would appear that HDR is playing an increasingly key role in bringing the most immersive viewing experience to the home. **Shawn Liew** writes more.

While more and more viewers — even those of the sports persuasion — are embracing the concept of consuming their favourite content streamed over the Internet, it does not necessarily mean that they are willing to make major concessions when it comes to picture quality.

This, perhaps, goes some way to explaining why even traditional broadcasters are stepping up efforts to bring the best viewing experience to their audiences, beyond the TV screen. The BBC, for instance, streamed selected matches of the 2018 FIFA World Cup live in 4K/Ultra HD (UHD) and high dynamic range (HDR) to UK-based audiences over the BBC iPlayer.

That, possibly, remains the high point of a journey that began in 2014, when the BBC started to investigate how HDR could fit into its broadcast infrastructure. The British public broadcaster came to the conclusion that any approach could not rely on end-to-end metadata, as metadata

often gets lost or becomes out-of-sync with the content as it passes through the production chain.

The BBC also wanted the captured signal to be display-independent because a wide range of different displays and lighting conditions are used both in production environments and in the home. Finally, the BBC wanted an approach that was compatible with its current 10-bit infrastructure, and only required changes to the cameras and critical monitoring displays. This led the BBC and Japanese public broadcaster NHK to invent the Hybrid Log-Gamma (HLG) system for HDR, which is included in ITU-R BT.2100, the international standard for HDR programme production and exchange.

Designed to be a scene-referred system, the HLG signal represents relative light levels in the original scene, which allows pictures from a single mastering process or live production to be adapted to give the same artistic effect on brighter or darker screens at home. Only the display itself needs information about its own capabilities and environment to faithfully render the scene-referred signal, so metadata that describes the mastering display is not required. HLG also has native compatibility with standard dynamic range (SDR) TV within the same colour format, which can be used for 4K/Ultra HD (UHD) SDR displays.

The BBC's long-term goal is also to develop a complete HDR ecosystem. This, the BBC says, starts with fundamental research into the human visual system, which then informs develop-

“HDR accentuates the contrast on smaller screens, where you do not notice the increase in pixels 4K/UHD brings as much.”



— **David Blackett**,
Group GM, Magna Systems
and Engineering

ment of technical systems including format conversion techniques, HDR production guidelines and adaptation requirements for displays of different brightness.

HDR, the BBC adds, will offer a step-change in quality to viewers, making pictures more realistic and immersive. However, in order for HDR programmes to be enjoyed in the home, a complete broadcast infrastructure must be in place. HLG's native compatibility allows much of the existing SDR infrastructure to be re-used for HDR.

From both a broadcast and end-user perspective, what does HDR truly bring? APB asks David Blackett, group GM, Magna Systems and Engineering. He suggests that HDR brings another step forward in terms of quality. “It also gives more of a 3D impression, without losing the social viewing aspect that 3D does when you are using glasses or a headset.”

In productions, Blackett believes that HDR can be a game-changer, translating into more depth in the blacks and whiter whites, along with a wider colour gamut; this, in turn, results in more lighting options.

“To make it work for you, make sure you do all your pre-shoot planning properly and fully take into account all of the extra ‘angles’ that HDR brings, such as more details, definition and focus, and how these will affect you and your production,” he advises.

HDR, of course, has been associated

A more immersive viewing experience? The BBC streamed selected matches of the 2018 FIFA World Cup live in 4K/Ultra HD (UHD) and high dynamic range (HDR) to UK-based audiences over the BBC iPlayer.



PHOTO CREDIT: THE BBC

primarily with 4K/UHD, promising greater quality and more details. “HDR also accentuates the contrast on smaller screens, where you do not notice the increase in pixels 4K/UHD brings as much,” says Blackett. As for whether HDR can be deployed independently from 4K/UHD, he ponders: “HDR conceivably can be deployed outside of 4K/UHD and in some ways makes more sense to do so on devices like smartphones, but so far, no one is doing this in any great way or scale.”

Another issue that remains to be navigated where HDR is concerned is a potential standards war — there is Dolby Vision, HDR+10 and the aforementioned HLG from the BBC and NHK. Blackett offers: “It’s a bit different with HDR as screens ‘can’ run multiple standards, but in general, yes, multiple standards can, and usually do, hinder development and buying decisions, particularly for consumers who only want one.”

The HDR standards war is likely to continue for some time, and it is difficult to predict, with any degree of accuracy, which standard will eventually prevail, suggests Robert Stacy, general manager, APAC, AJA Video Systems.

For a solutions provider like AJA, the focus is instead on ensuring that it provides tools to its customers to create content, regard-

less of the standard they choose to work in, he reveals.

To help customers plan their workflows and make the right decisions in positioning HDR workflow tools, AJA is promoting the concept of the Single Master Workflow. Stacy explains: “This means that when doing live production, rather than having two separate productions, trucks, crews and equipment for HDR and SDR, products like AJA’s FS-HDR can be strategically placed throughout the workflow. The FS-HDR acts as a seamless bridge between SDR and HDR.”

“This means you can easily match existing SDR and HDR camera sources into a common production format, that only one set of graphics need to be produced, and your output feeds can be easily adapted to either Rec-709 or HDR format such as HLG or PQ.”

The end-result, he surmises, is both SDR and HDR deliverables being able to be met with the same crew, resources, time — with only a small increment in cost, as opposed to a whole new investment in infrastructure.

AJA has also recently added the BBC’s implementation of LUTs, which are based on HLG. “What makes the FS-HDR such an essential tool with this backdrop of



“Broadcasters can use HDR to differentiate their programming because it offers a wider range of creative choices.”

— David Colantuoni, Senior Director, Product Management, Avid

changing and emerging standards is that we can easily update and add more camera formats as things go along,” says Stacy.

For those operating in Asia-Pacific, he also agrees with APB’s suggestion that HDR is a viable option with HD. “Compared to a 4K/UHD upgrade, HDR with HD is actually quite complementary and gives you the biggest bang for the buck,” he elaborates. “4K/UHD is quite expensive, and presents many technical challenges from an infrastructure point of view.”

Whichever route broadcasters choose, Stacy recommends the FS-HDR, which he also describes as a “great solution” for broadcasters who want to broadcast in HD, but also have SD needs to maintain. “The FS-HDR is both a frame sync capable of doing up/down/cross-conversions, as well as being a device for doing colour conver-

sions with the in-built Colourfront engine.

“In HD mode, this allows for four simultaneous conversions on four separate channels for under US\$2,000 per channel,” Stacy concludes.

For Avid, who has been empowering content production around the world, HDR offers broadcast workflow differentiation through the offering of high-quality imagery, says David Colantuoni, senior director, product management, Avid. He adds: “HDR images look better because colour, contrast and brightness are more realistic and more dynamic in presentation.”

“Broadcasters can use HDR to differentiate their programming because it offers a wider range of creative choices. Because today’s camera technology is able to capture so much more of an image, it is expected we would

want productions to be able to take advantage of this new technology when it is presented to a viewer.”

Many of Avid’s editorial, graphics and asset management products, Avid Media Composer, for instance, support HDR workflows, Colantuoni says, and the company will continue to advance HDR by introducing new products. He also advises: “Broadcasters must ensure that their entire production pipeline can accept, process and deliver HDR media from acquisition to delivery. Avid works to ensure that we retain HDR metadata through this production pipeline.”

As for any potential HDR standards war, Avid is unconcerned that it will have any definitive impact on its product roadmap. “There are a wide range of HDR formats available today, all of which are associated with particular cameras or monitoring devices,” Colantuoni explains. He believes that regardless of the resolution, HDR has emerged as a viable production option. In either a 4K/UHD or HD world, there is value in the presentation of HDR, although much will depend on the workflow. “In feature film productions, you would see more 4K/UHD HDR workflows, but in sports, you would tend to see more HD 1080p HDR workflows.” APB

The real challenges of HDR

BY DANIELE SIRAGUSANO

A lot of people are getting very excited by the prospects of high dynamic range (HDR) for both movies and television. And HDR, does bring new possibilities to the image. HDR increases the contrast ratio, giving you simultaneous bright highlights and detailed deep shadows. It also extends the palette of bright, saturated colours, giving the colourist more to work with.

But there are traps for the unwary: the enlarged colour palette mainly adds fluorescent and light-emitting colours. Surface colours play a much larger role for most movies and TV shows — and standard dynamic range (SDR) TV already covers most of them. Saturated colours can also drift quickly from a natural to an unnatural appearance.

This means that the extended gamut of HDR needs to be controlled and managed with great care, and that is why the colourist needs a powerful toolkit (like Baselight v5) that works in a perceptual domain, rather than in camera or display RGB spaces.

In addition to the creative tools in v5, FilmLight has developed a new colour appearance model (Truelight CAM) that allows you to ‘render’ an image for all of the various viewing conditions and device capabilities. This ensures that any monitor gives a consistent view of the material at every stage of production and post; and this technology also means that producing various deliverables becomes easy.

The higher contrast of HDR also means that images are perceived as sharper: there

is more differentiation between each pixel. This is great when you need the sharpest possible pictures, such as sports on television. But for drama or movies, HDR can be too sharp: the director will want the light to bloom, not cut like a knife.

Again, the colourist needs new tools to shape and modify the texture of the image with fine control, in order to fulfil the director’s vision. New tools on the colour workstation give control over texture and allow non-linear spatial transformations. And those tools are needed to maintain the look across different deliverables, too — as every display technology adds its own Modulation Transfer Function (MTF) to the final texture of the image.

This perceived increase of contrast and sharpness also affects motion artifacts, which are contrast-sensitive. HDR allows you to create high contrast in high frequencies, which will emphasise motion judder: a slow panning shot that may look fine in SDR but might be distracting in HDR.

It is possible to produce beautiful and cinematic images in HDR, but we need a new set of tools to achieve this. With the right toolset, HDR has the power to be a transformative shift in the visual language of television and movies. The creative possibilities are exciting: now is the time to develop the skills and techniques to ensure that those possibilities are best used to enhance the story.



Daniele Siragusano is image engineer at FilmLight.



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ARRI allows *Dying to Survive* to thrive

One of China's biggest box office hits this summer, *Dying to Survive*, tells the real-life story of Yong Cheng, a cancer survivor and drug store owner, who started helping leukemia patients by selling unapproved pharmaceutical drugs underground.

The critically acclaimed comedy-drama was produced by Hao Ning and Zheng Xu, and was directed by first-time feature-maker Muye Wen. Director of photography Boxue Wang captured *Dying to Survive* with ARRI's Alexa XT Plus and Alexa Mini, and chose ARRI Skypanels and M-series luminaires for the film's lighting.

As to why he chose ARRI, Wang's response was straightforward: "I trust ARRI — its stability, colour science, dynamic range and highlight/lowlight roll-off are always very good. I've used ARRI ever since I started shooting digitally."

For *Dying to Survive*, the film was set around the year of 2002 and required an "everyday sort of plot"; the Alexa's colour, which Wang described as "very true to life", made it a perfect match. "There was a scene when Yong Cheng was locked outside of his drug store and had to climb in from the window, so he took a torchlight to find the phone number that Shouyi Lu gave him," Wang continued. "I only put a very small



Director of photography Boxue Wang used ARRI cameras and lightings to shoot the Chinese box office hit *Dying to Survive*.

LED tube on the roof to light up the background — all other light was from his torchlight. If I remembered correctly, I raised the sensitivity to 1280 with the aperture wide open. The image may be a little grainy but the texture was outstanding."

Wang also deployed a shoulder-mounted multi-cam approach, with several cameras used to capture the performance of each individual character. "Alexa XT as well as Amira are both cameras that are suitable for shoulder mounting — the ergonomics were designed specifically for it," said Wang. "The XT was heavier than the Alexa Mini, but it still felt good. I used Alexa Mini for the spaces that were small and hard to manoeuvre around.

"Some sequences were done with Steadicam; for these the Alexa Mini was very flexible. Most of the time, we shot with an Alexa XT and an Alexa Mini."

To light up the film, Wang also



used lights from ARRI's M-Series and SkyPanels. The largest light deployed was an ARRIMAX 18K, which was used for the night scene at the pier. Because the area was large, the 18K was used in conjunction with a Chinese balloon to light the background.

For the smaller areas, the M90, M40 and M18 were used, as Wang reviewed: "When we were shooting the main scenes in the drug store, a lot of the shots were keyed with an M90 outside the window with a diffusion. By adding some SkyPanel or fluorescent lights for the background, the atmosphere was just what we were looking for."

And regardless of indoors or outdoors, Wang has made it a habit to use the M-series as the key light. "They are very bright and can be used to simulate the sun. It's small, so it's easy to handle — that's why I liked it so much."

Vitec Group supports debut feature film

To suggest that *Magpie* has a special affinity for filmmaker Paul Cook is perhaps an understatement. After all, Cook not only served as producer and director of photography for the film, he also co-wrote and co-directed with Carmel Hannant.

For the crowd-funded film about a British soldier and his wife who suffer the effects of post-traumatic stress disorder (PTSD) during and after World War II, Cook attributed the success of *Magpie* to the deployment of a range of Vitec Group equipment. These included the Litepanels LED lights; mobile power solutions from Anton/Bauer; Sachtler and Vinten tripods, including the new flowtech 75; and OConnor grips.

Cook explained: "Magpie is the largest and most challenging film I have ever worked on, and I knew that [Vitec] brands could provide the best and most reliable equipment in the industry to help me realise my creative vision."

Cook shot *Magpie* using a single Sony PXW-FS7 camera supported by Sachtler FSB 10 tripods throughout the production. In addition to providing a stable platform for the 12kg payload of the camera, the FSB 10s also offered the robustness and reliability the production required for on-location shooting, with "extra-smooth movement" that eliminated wobble or shake when the crew worked with long lenses.

In addition, Cook was able to serve as a beta tester for Sachtler and Vinten's new flowtech 75 carbon-fibre tripod.

"The FSB 10 was the perfect choice, especially in the earlier

stages of filming, and it never let us down. It's lightweight, yet stable enough that our slider system could handle the overall weight of the camera and head with silky smooth operation," Cook said. "And the flowtech 75 is a marvel; it's incredibly fast to set up and use. *Magpie* was the perfect environment to test its innovative features, such as the ability to go low without the need for a spreader. That was an important capability for shooting many of the military scenes of the film."

Magpie was also entirely shot using LED lighting from Litepanels. The production used two Sola Fresnel LEDs as the main light for a majority of the scene — providing a strong, yet energy-efficient, daylight source. Sola and Inca 4 and 6 fixtures provided additional hard lighting, as well as traditional tungsten-balanced lighting for mimicking real-world light sources when daylight was not present.

Litepanels Astra Bi-Color and Astra soft LEDs provided a powerful but compact light source that was vital for lighting small internal spaces, according to Cook.

Anton/Bauer Cine 150 batteries were the go-to power solution for all equipment on set, from cameras and lighting to monitors and other peripheral devices. In addition, the crew used OConnor O-Rig grips and shoulder rigs to provide strength and versatility for all types of shots throughout the production. The variable positioning of the OConnor O-Grips shoulder mount, Cook concluded, also allowed him to adjust the camera set-up quickly to suit each shot.



A wide variety of Vitec Group equipment was used to shoot *Magpie*, a crowd-funded film about a British soldier and his wife who suffer the effects of post-traumatic stress disorder (PTSD) during and after World War II.

whoBuyswhat

■ TSL Products maintains audio contribution feeds for Timeline



Timeline Television, a provider of outside broadcasts, post-production and studio-based services for major UK networks, has chosen TSL Products' PAM2-MK2 precision audio monitoring units for its RF uplink trucks.

Timeline Television, a provider of outside broadcasts, post-production and studio-based services for major UK networks, has chosen TSL Products' PAM2-MK2 precision audio monitoring units for its RF uplink trucks.

Lee Wright, senior broadcast engineer, Timeline Television, explained: "The main attraction to using TSL Products is the fact that they are so user-friendly. I have been working with TSL Products since 2010, and we use them across the entire business for all kinds of monitoring."

Timeline's RF trucks are designed to be an all-encompassing RF/comms vehicle and uses the PAM2-MK2 to operate more in an engineering environment. The PAM2-MK2 fully supports Dolby E, Dolby Digital and Dolby Digital Plus. It offers an improved workflow for Timeline and provides confidence when monitoring Dolby line timing.

Wright continued: "Specifically, in the Timeline trucks, the PAM2 is used to monitor contribution feeds, check a local decode and adjust the audio encoding delay to get the timing on spec. With its Dolby decoding option, the PAM2 is a great tool for contribution monitoring."

One of Timeline's RF trucks, the RF2, was deployed for the BBC's coverage of the Royal Wedding in May this year. Timeline provided eight RF cameras for the BBC — five in HD and three in 4K/Ultra HD (UHD) high dynamic range (HDR) — as well as the outgoing domestic and international links. "We were responsible for delivery to an estimated 1.9 billion people, [and] RF2's PAM2 was vital in ensuring that all audio passing through RF2 was correct."

The PAM2-MK2 is part of TSL Products' flagship Precision Audio Monitoring range, which now provides monitoring of ST-2022-6 and ST-2110 IP audio and video flows, along with support for control protocols such as Ember +.

Think through the entire process before incorporating HDR/WCG into the workflow

BY AALE RAZA

High dynamic range (HDR) and wide colour gamut (WCG) have made a big splash on the broadcasting world, with numerous manufacturers lining up to show the spectacular colours with their cameras, monitors and projectors.

There are, however, challenges to be overcome before these new standards can be incorporated into the broadcast workflow.

Before we move forward and discuss the workflow issues related to HDR and WCG, let me mention that there are at least three standards of HDR:

1. Dolby has developed a standard known as Dolby Vision.
2. HLG (hybrid Log gamma) has been developed by BBC and NHK.
3. HDR10 is the standard for Blu-ray.

Which HDR standard will be used by broadcasters?

There is also a lack of related equipment that can read HDR

content — like reference monitors, consumer displays and video links capable of higher bandwidth required to transfer HDR content.

The third problem is: for the most part, HDR/WCG interfaces are compatible with HDTV and 4K/Ultra HD (UHD)TV 10-bit and 1-bit signals, and can be carried over existing 3-12Gbps interfaces. If, however, high frame rate (HFR) signals such as 100Hz and 120Hz are to become part of an implementation, new interfaces and infrastructure will be required.

The existence of HDR signals and different display colourimetry can put new demands on systems interoperation. Displays, image processors, up/down colour converters will all need to detect the HDR encoding and colourimetry in use to correctly process and display the signal.

HDR and WCG are emerging technologies that are still undergoing much development, and there are various approaches needed to create, transport, distribute and

display HDR/WCG content. This is an implementation challenge for broadcast workflows that are complex in nature, highly automated and expensive to build. Broadcast networks rely on standards to ensure interoperability and to build cost-effective workflows. HDR/WCG with frame rates limited to a max of 50/60Hz can be accommodated by existing multi-link 1.5Gbps, or multi-link 3Gbps interfaces, or 10Gbps optical links.

HDR/WCG signals will require that displays be changed to correctly display the images. The use of frame rates beyond 60Hz that also include UHDTV pixel matrices at 4K and 8K will require the building of a new infrastructure.

There are numerous problems related to production

Existing interface metadata tables need to be adjusted to reflect the addition of HDR/WCG content types and messaging protocols

need to be extended to cover these new content types. Broadcast workflows for terrestrial, satellite, cable and IP distribution rely heavily on automated processing system workflows. To enable HDR/WCG processing, as well as conversion between HDR/WCG and traditional standard dynamic range (SDR) content in these workflows dynamic, scene- or frame-based metadata may be needed.

There is uncertainty on how such metadata can be bound to content and transported through automated workflows in a persistent manner. Processing and conversion systems such as video mixers, encoding systems and graphics systems might delete the metadata. Other processing systems might alter the image content in a way that the associated metadata no longer reflects the image content.

Metadata would need to be updated to reflect the new image parameters, as well as a history on how the image was altered.

Conclusion

While HDR and WCG are great enhancements to the image quality and will provide huge advantages to broadcasters, they need to be implemented after the entire process has been thought through carefully. Implementing only 4K or UHD (higher resolution) without HDR and WCG is obviously not the way forward. We are sure that as things move forward and HDR and WCG become a necessary part of the broadcast infrastructure, the missing gaps will be filled up and things will become easier.



Aale Raza is founder and CEO of systems integrator Whiteways Systems.

Lawo brings France's Bastille Day celebrations to life

Following a proud tradition, Lawo mixing consoles provided the highest possible audio quality for more than 500,000 Concert de Paris spectators celebrating France's Bastille Day on July 14 this year.

The *Concert de Paris* is one of the largest classical music events held anywhere in the world, and is followed by a traditional firework display. The show — featuring the National Symphony Orchestra and the Choir of Radio France, along with internationally renowned soloists — was relayed to TV viewers and radio listeners in



A Lawo mc266 console was deployed in Radio France's OB truck for the coverage of this year's Bastille Day in France.

France and beyond with the Lawo set-up. For the central celebrations on the Champ du Mars next to the Eiffel Tower — the highlight of the National Holiday — Radio France used an mc296, Lawo's flagship audio production console, for the "ultimate front-of-house (FOH) mixing performance".

Four hands operated the large mc296: those of Stéphane Desmons took care of the orchestra, while Alexandre Martin was in charge of the choirs and solo singers. On the stage, the monitoring position was equipped with an mc236 operated by Stéphane Touvenin. In Radio France's outside broadcast (OB) truck n.5, an mc266 was in the expert hands

of Laurent Fracchia for the live broadcast of the event on France Inter and France 2, the main public radio and TV stations in France.

Bruno Lompech, head of the Radio France sound reinforcement department, said: "The super comprehensive interface and advanced multi-user features of the mc296 gave us the opportunity to reduce the quantity of equipment we needed while increasing the working capabilities of our sound engineers."

Joffrey Heyraud, sales director, Europe, Lawo, added: "The show was flawless and gave us a new opportunity to demonstrate the power of our solutions in such large-scale events."



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Friend MTS integrates watermarking on AWS Elemental MediaConvert

Friend MTS has announced interoperability of its Distribution iD watermarking with AWS Elemental MediaConvert to provide an added layer of security against streaming piracy for on-demand video. The distributor-level watermarking, along with Friend MTS' global content monitoring service, enables providers of on-demand content to gather intelligence about the sources of streaming piracy. Simon Hanna, partnerships director, Friend MTS, said: "The integration of our watermarking with AWS Elemental MediaConvert video processing allows AWS Elemental users to deploy extra security without changing their content deliver workflows. Importantly, this distributor-level watermarking can be readily integrated with subscriber-level watermarking for even greater protection against streaming piracy."

Leader adds new members to Zen series



Leader has expanded its Zen series of test and measurement instruments with the LV5350 portable 12G/3G/HD/SD-SDI waveform monitor and its

LV7300 rasteriser. Besides being equipped with IP measurement capabilities, both the equipment incorporates the SDI facilities of the LV5600 and LV7600. Other features, such as test pattern generation, closed-caption monitoring, CIE colour chart, high dynamic range (HDR) measurement, focus assist, are also integrated in the solutions.

Next Issue @ Management

Routers

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Nielsen

Designing today's MCR for the next wave of broadcast operations

With more formats, platforms and channels to manage than ever before, master control rooms (MCRs), as the technical hub of all broadcast operations, have to be better equipped with technologies to streamline their operations.

Josephine Tan reports.

At the heart of every broadcast facility lies the master control room (MCR), the technical hub where a pool of resources are installed for operators to make critical broadcast decisions. Today, as consumers are increasingly engaged with content across a diverse range of platforms and devices, broadcasters and media companies are required to deliver more services while driving increased operational efficiency.

To meet the shifting demands of viewers, channels need to transition to a mix of linear and digital services, suggests Raed Al Tikriti, vice-president, playout, Grass Valley.

He tells *APB*: "Rapid growth in the number of channels, and increasing costs due to the issues of managing and monitoring services, place added pressure on operational costs. More channels mean more people to monitor the playout operations, which is costly.

"MCRs need to be flexible and agile enough to manage monitoring and play-

out across more platforms. IP-based infrastructures deliver this flexibility and agility, allowing more channels to be added more cost-efficiently. Additionally, with IP-based systems, the need to change playout hardware as formats evolve is eliminated."

In a typical MCR, the hub comprises all equipment required to prepare multiple channels for playout, from signal receivers to monitors, servers and branding and graphics engines through to playout and automation systems. And in most markets, Al Tikriti points out that many of the MCR applications have transitioned from a hardware-based environment to a software-based ecosystem.

"As IP replaces existing SDI infrastructure, cloud and virtualised applications will begin to increasingly filter through the MCR, where each channel can be operated via a virtualised machine, rather than requiring a dedicated piece of kit," he explains. "This will make the MCR much more scalable, making it possible to rapidly add and take down channels, as well as adapt services to respond to market demands."

To provide media companies with a migration path to IP, Grass Valley has developed iTX, a 4K/HD/SD integrated playout platform with IP/SDI flexibility and advanced workflow automation. The iTX unifies workflow from ingest to playout, with applications spanning across quality control, content management, archiving, traffic interface, audio/video processing, graphics and subtitling, transmission control, transcoding, and monitoring.

The playout platform is equipped with support for SMPTE ST 2022-2 MPEG-2 and AVC/H.264 compressed IP inputs/outputs, as well as SDI I/O. In version 2.9, Grass Valley has added SMPTE ST 2022-6 input to support IP production systems.

In managing multiple formats, Grass Valley has developed the Masterpiece 12G-SDI master control switcher, which enables master control and channel branding for all standards up to 4K/Ultra HD (UHD). Equipped with an intuitive and compact control panel, the Masterpiece 12G-SDI features FormatFusion3 technology to support more capacity in order to feed multi-format material into channels. Other features of the Masterpiece 12G-SDI include flexible audio capabilities, channel branding and multi-channel video programme distribution, as well as dynamic visual effects.

Another approach that allows media companies to perform more functions with less equipment and manpower is the concept of centralisation. Having centralised MCR operations, according to Al Tikriti, enables media companies to manage and control multiple operations — all networked together — from a single central location.

Ideally, he suggests that the concept of centralisation is capable of delivering economics of scale, allowing new services to be set up faster, while resources can be reallocated more efficiently as needed.

"Centralised diagnostics, commissioning and maintenance deliver cost efficiencies. Furthermore, this model also reduces the overall cost of personnel and technology investments," he concludes. "As the industry moves towards greater adoption of cloud and virtualised broadcast environments, centralising master control will be a key part of the transition. We have seen some early examples in the market, but widespread adoption is still some way away."

Alison Pavitt, marketing manager for Pebble Beach Systems, acknowledges the benefits of centralisation, and says: "Broadcasting from a centralised data centre, either on- or off-premise, is an ongoing emerging trend. However, the high bandwidth demands of

Grass Valley's iTX integrated playout platform is designed to provide media companies with a migration path towards IP workflows.



broadcasters go well beyond the traditional ‘up-time’ that data centres concentrate on for the bulk of their users.”

Despite these challenges, Pavitt highlights that the advantage of minimising errors is one compelling reason for the adoption of centralisation, in addition to increased efficiency and agility. She elaborates: “From power savings, to wiring, redundancy, maintenance and security costs, it’s clear this trend will ultimately become the norm.

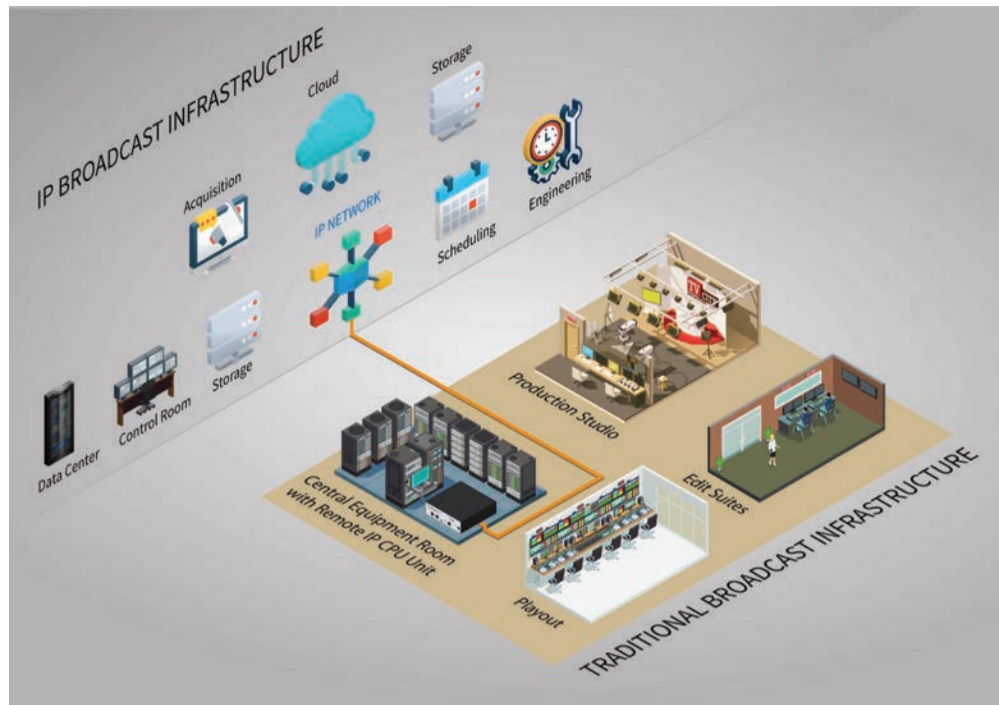
“It’s vital that core systems such as automation can accommodate the control of multiple diverse services, displaying and giving control of a high density of channels from a single unified UI. It is also equally important that remote monitoring and administration be part of the design, so that operators can monitor and take remedial action from any location for multiple channels.”

Marina is Pebble Beach Systems’ solution for centralising ingest, content management and multi-channel automation. Designed to manage complex changing workflows, the automation solution can be integrated into workflows incorporating digital asset management, traffic, news and scheduling.

Marina’s functionalities can be extended when paired with Lighthouse, the company’s remote monitoring and control toolset. When combined, the solutions deliver control, monitoring, content management, as well as channel design and launch tools via an array of Widgets on configurable Web-based dashboards.

Lighthouse can span multiple Marina systems, which may be running different software versions, and be operating at different frame rates. Users are able to configure the layouts accordingly to their roles, and switch between dashboards at the click of a mouse.

Pavitt continues: “Today’s MCRs increasingly utilise software-based systems, and are designed to be much more flexible and adaptable to each broadcaster’s requirements. With the prevalence of over-the-air (OTA) and over-the-top (OTT) workflows,



The Remote IP CPU unit from IHSE provides a bridge from the closed KVM switch-based system installed in a broadcast operations centre or OB vehicle to a wider world of devices through local and wide area IP connectivity.

and advantages that will enable them to maintain the efficiency and cross-platform capability they need to remain relevant and competitive in the modern world.”

Another KVM solutions provider, Guntermann & Drunck (G&D), has also developed KVM-over-IP systems that empowers opportunities for staff collaboration and dynamic use of the installation. For instance, its CrossDisplay-Switching offers switching of channels within a click of a mouse, thereby allowing operators to efficiently access devices and systems from their workstations.

Jochem Bauer, marketing director, G&D, elaborates: “A significant difference that occurred with the shift to digital operations is the increased use of IT systems. From our point of view, this is the main reason why the deployment of KVM systems is quite the standard in today’s broadcast environments, and especially in MCRs. KVM systems provide the flexibility to always have the right system available at the right time.”

Another solution available under G&D’s KVM-over-IP portfolio is DP-Vision-IP, an extender system that transmits DisplayPort and other computer signals over IP-based networks, CAT and Layer 3. The device, consisting of a transmitter and receiver, provides one network interface for transmission, Web interface, monitoring, and simple network management protocol (SNMP).

Bauer concludes: “IP will provide a huge amount of benefits as it simply offers further flexibility. As an example, think of OB and the opportunities for remote production: IP-based content transport can be managed way easier via ICT carriers. And that’s only a fraction of the upcoming advantages. A big benefit we see is that — now that broadcasters invest into high bandwidth networks — other technologies can benefit from that and move to IP as well.

“Hence, for MCRs, there’s much more flexibility to come — especially in terms of user experience, as well as with regards of a more flexible utilisation in general.” **APB**

modern playout pipelines require sophisticated automation solutions that provide the flexibility broadcasters need when delivering content to widely varying destinations.”

As MCRs are increasingly going digital, the solutions installed in the facility have to also be equipped with solutions to accommodate the explosion of formats, metadata and control protocols, which are all driving a new set of interoperability standards. Hence, Pebble Beach Systems developed Orca, its software-defined virtualised IP channel solution.

Orca leverages the power of Marina automation’s flexible playlist, and is capable of managing dynamic changes to schedules while offering validation of media and playout elements. Running in a virtual machine in a private or public cloud with IP inputs and outputs, Orca delivers the functionality previously managed by hardware servers, graphics and captioning systems within a software environment.

Operators are also able to employ Orca to create new IP channels from a series of templates, and deploy them into a running system.

“IP and virtualised ecosystems are poised to dramatically increase efficiencies, scalability and cost-savings, but only if the correct infrastructure is in place, and skill-

sets are up to date. So while many organisations are still building SDI-based MCRs, IP solutions are evolving rapidly, and virtualised deployments in the cloud are a logical next step for many channels broadcasting non-live content,” Pavitt concludes.

When transitioning to an IP workflow, MCRs, and all other processes related to the acquisition, preparation and transmission of broadcast content will be impacted, declares Terence Teng, managing director, IHSE Asia-Pacific.

He explains: “While the day-to-day roles of camera operators, sound recordists, producers, editors, engineers and other staff will remain similar, the way people work, and their physical locations, are likely to change. They will need the ability to access and manipulate remote content and tools from a central location over local and wide networks.”

Completing every MCR is the installation of keyboard, video, mouse (KVM) equipment that allows operators to access workstations within the facility remotely from a distance. Throughout the industry, in many broadcast centres, outside broadcast (OB) vans, editing and post-production studios, these KVM systems provide operators with “instant and switchable” access to their broadcast devices, thus allowing them to manage broadcast computer

systems from a single workstation. For instance, using hotkey selection, operators are able to switch between sources and add them to their preferred list for easy access. Additionally, operators can use the push-and-get function to select and display content on video walls and other displays.

Another trend that has emerged into the broadcast ecosystem is the combination of real and virtual systems, Teng adds. “Users who are connected directly to local computer hardware also expect to be able to connect to virtual machines very simply. They do not want to concern themselves with the technicalities of device they are accessing.”

Hence, IHSE developed the Remote IP CPU, a solution designed to provide a bridge from the closed KVM switch-based system installed in a broadcast operations centre or OB vehicle to a wider world of devices through local and wide area IP connectivity. The unit enables operators to access IP-connected remote devices from their own workstation, in the same way they connect to physical devices that are permanently attached to the KVM switch.

Teng concludes: “As the broadcast workflow evolves into the future, KVM technology will evolve too, as it is doing. It will continue to be used by broadcast organisations to deliver solutions, benefits

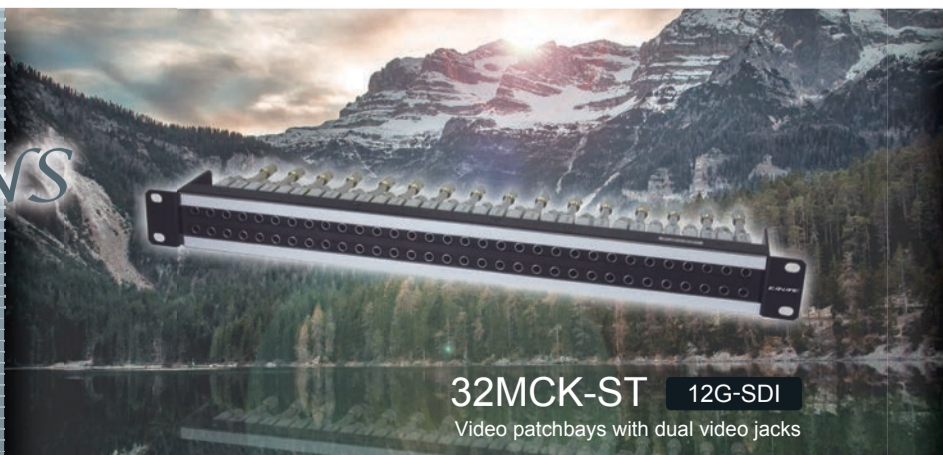
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Say hi! to *hi* – a new approach to broadcast and media control

BY HUMPHREY HOCH

Media technology has experienced several revolutions in the past years: from SD/HD to 4K/Ultra HD (UHD), from baseband to IP, from monolithic core systems to modular and software-defined platforms. Because the transition to IP will not be completed overnight, legacy and IP-based equipment will work together in hybrid systems for quite some time. IP-based and software-defined platforms offer unique power and versatility for production workflows and teams.

However, with great power comes great responsibility — networked- and software-driven systems offer unprecedented flexibility for broadcast and media environments but require special caution. It is the user's responsibility to define functionalities, workflows and control mecha-

nisms for all the new devices. These configuration processes take a lot of time and effort — and in the worst-case scenario, they need to be re-done every time a piece of your system has changed.

Mis-configurations in an IP-based system can have dramatic effects on the whole infrastructure. The effort to provide a fail-safe production environment increases dramatically. This is why Broadcast Solutions created *hi*.

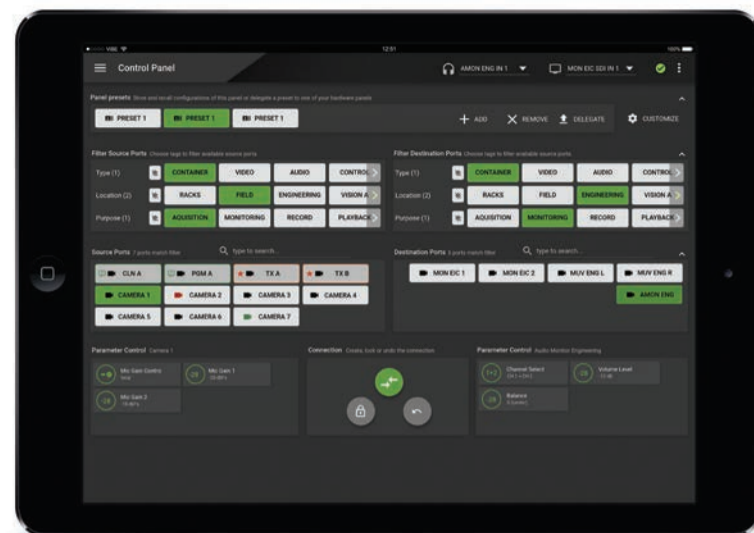
At this year's IBC, Broadcast Solutions is introducing *hi*, a new approach to control layers in broadcast and media technology environments. Based on more than 20 years of experience in system design, *hi* provides a reliable and easy-to-use control layer for media installations. Broadcast Solutions' *hi* makes the configuration process smart and easy, detects new devices automatically and protects the user from false

configurations.

Using modern auto-discovery and zero-configuration technologies, *hi* is reducing the set-up and configuration time of your systems dramatically via a user interface that provides easy control and monitoring of complex infrastructures, and resembles those of common smart mobile devices. Thus, the system works easily on any end-user device: on a PC, a Mac, on tablets — or even on the user's smartphone.

Built on decentralised software architecture, the *hi* system can run on almost any platform: on laptops, dedicated servers and server clusters, as well as in your data centre or on cloud services such as AWS or Microsoft Azure. This architecture ensures non-disrupted availability, even in case of hardware, power or protocol failures.

Self-healing algorithms ensure that all parts of the system are up



Broadcast Solutions' *hi* reduces the set-up and configuration time of one's systems dramatically via a user interface that provides easy control and monitoring of complex infrastructures, and resembles those of common smart mobile devices.

and running properly — even if they are distributed over different hardware platforms or even working from different locations.

Reliability and ease-of-use are the keys to successful interaction between the system and the operators. This is why the main focus during the development has always been the user and how workflows can be simplified.

For further information, come around at Broadcast Solutions' indoor stand (**Hall 8.D74**), grab a coffee and try out a new way of controlling media infrastructures. Come by and say hi!



*Humphrey Hoch is senior innovation director, Broadcast Solutions. More information on *hi* can be found at www.hi-app.de*

Digital Glue brings more creativity to media storage

Digital Glue has welcomed a new hybrid NVMe solid state drive (SSD) and hard-disk drive (HDD) media storage solution to its creative.space platform.

//DEUS EX balances solid state and spinning disk technology with a fully optimised internal architecture to provide playback in the most demanding environments, according to Digital Glue. The hybrid system is the latest to launch in the creative.space series, an on-premise managed storage (OPMS) service that includes round-the-clock monitoring, technical support and next-day repairs for an affordable, all-inclusive monthly rate.

Designed for end-to-end post-production workflows, //DEUS EX is built for uncompressed high-resolution workflows and is capable of tackling even the most demanding



real-world formats like 4K DCI OpenEXR, said Digital Glue.

It eliminates the need for separate online and nearline systems with dynamic caching powered by Media Intelligence, allowing the entire team to work on the same system

//DEUS EX is a new hybrid NVMe solid state drive (SSD) and hard disk drive (HDD) media storage solution offered by Digital Glue.

simultaneously. Featuring dual Intel Gold Processors, plenty of RAM, four NVMe SSDs and up to 20 Helium-filled HDDs (24 without SSDs), //DEUS EX enables users or the artists to implement dynamic collaborative workflows like those available in DaVinci Resolve and Adobe Creative Cloud, allowing the artists to get more done in less time.

Tim Anderson, CEO and CTO of Digital Glue, said: "//DEUS EX offers the best of all worlds. It's scalable for unlimited growth potential, delivers unparalleled performance in the most demanding environments, and raises collaboration to a whole new level."

Irdeto adds security layer to IoT-connected industries



Irdeto's Jaco Du Plooy: "Cloakware Software Protection is providing IoT-connected industries with the peace of mind to securely innovate and deploy their services or devices in ever-increasing hostile environments."

To enable any Internet of Things (IoT)-connected business to take advantage of and securely launch IoT-related services, devices, platforms and applications, Irdeto has introduced the latest version of its Cloakware Software Protection solution.

According to Irdeto, Cloakware Software Protection Version 8.0 now offers the latest advancements in cutting-edge software protection for the connected world, covering all elements of software protection, from the application to the gateway to the endpoint devices, sensors and other elements of the IoT ecosystem.

Cloakware Software Protection

is a suite of advanced cybersecurity technologies that enables organisations to customise the protection of their software-defined business. The solution now offers more platform support, including mobile devices and other platforms on iOS, Android, Linux, Mac OS X, Windows, select real-time operating systems (RTOS) and more.

Irdeto has also expanded the solution's programming language support to include C, C++, Swift, Web Assembly, JavaScript and others.

In addition, Irdeto has announced its new Cloakware Development Center to better connect with the developers using its solu-

tions. This ensures that any organisation working with Irdeto has a trusted, strategic security partner to meet their business needs.

Connectivity is changing business, declared Jaco Du Plooy, vice-president of IoT security, Irdeto. "From media and entertainment to manufacturing, healthcare and other IoT-connected industries, organisations are harnessing our always-on world to implement new business models," he added. "However, without securing these innovations, they are destined to fail. At the end of the day, Cloakware Software Protection is providing IoT-connected industries with the peace of mind to securely

innovate and deploy their services or devices in ever-increasing hostile environments."

Cloakware Software Protection is purpose-built to enable a multitude of business models. For instance, small business owners who have created their own proprietary algorithm and developed an application around the algorithm can use Cloakware Software Protection to protect this intellectual property through renewable, entangled code and data transformations.

This, according to Irdeto, allows business owners to securely expand their business without fear that their core IP will be reverse-engineered and copied.



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APB

DISTRIBUTION

NBN launches DOCSIS 3.1 network with ARRIS

Australia's National Broadband Network (NBN) has begun rolling out ARRIS' technology solutions for its nationwide launch of DOCSIS 3.1. This network expansion builds capacity to support the country's current and future broadband services. Jointly, the companies will bring DOCSIS 3.1 to three million premises in major Australian cities by 2020. The ARRIS technology solutions offer a framework to serve the country's growing connectivity needs, and is able to double the network's capacity while enabling multi-gigabit, full duplex DOCSIS, and advanced network innovation for future decades.

R&S facilitates Australian DVB-T2 trials



In collaboration with Free TV, ABC and SBS, Broadcast Australia has conducted trials of next-generation broadcast technology in the Sydney area. The trial assessed the performance of DVB-T2 technology in Australia. Supporting the trials was Rohde & Schwarz, who supplied its transmitters, retransmitters and test equipment for the testing phase, including an R&S TLU9 50W transmitter, an R&S ETL TV analyser, and an R&S BTC broadcast test centre.

Next Month @ Distribution

Satellite Newsgathering

PANELLISTS



Martin Coleman
Executive Director
Satellite Interference
Reduction Group



Amitabh Kumar
Director, Corporate
Zee Network



Louis Boswell
CEO
AVIA
(Asia Video Industry
Association)

Standing firmly on ground with open doors

From transmitting and receiving ground networks to the space and vice versa, the Earth station is an intermediary medium that connects the planet to the outside world beyond Earth. As remote and isolated as these facilities may be situated, the infrastructure within the facility is opening its doors to welcome new technologies that have the potential to revolutionise its entire ecosystem. **Josephine Tan** finds out more.

The worldwide public cloud services market is projected to grow 21.4% in 2018 to total US\$186.4 billion, up from \$153.5 billion in 2017, according to Gartner, a global research and advisory firm.

Due to its flexibility, cloud technology has been largely embraced by industries across all sectors, including the broadcast and media industry for many of its applications across the entire video content lifecycle — from acquisition through to transmission and delivery. Although public cloud revenue is growing more strongly than initially forecast, Gartner still expects growth rates to stabilise from 2018 onwards, reflecting the increasingly mainstream status and maturity that public cloud services will gain within a wider IT spending mix.

In an attempt to explore the opportunities that partnerships with cloud service providers are able to offer teleports, the World Teleport Association (WTA) has released the organisation's first report on the adoption of cloud services, *Clear Skies or Stormy Weather? Cloud Services for Teleport Operators*. The report also reveals the technical and policy requirements for interconnections, as well as analysing the competitive threat that cloud operators present and how teleport operators can best respond.

As a satellite ground station that performs as a hub connecting satellites with telecommunications networks, teleports have always been in the business of creating and managing capacity of — networks, transmission systems, analogue and digital processing — for shared use by their customers.

Robert Bell, executive director of the WTA, tells *APB*: "Satellite remains the dominant distribution and contribution platform for broadcasting but there is no question that the volume of transponder capacity being purchased is falling and will continue to fall. In industrialised countries with strong cable TV penetration,



Headquartered in Slovenia, STN has delivered over 600 TV channels across regions in Europe, the Middle East, Asia, Africa and the Americas.

cord-cutting is accelerating as viewers increasingly use the Internet to access programmes. In markets dominated by satellite TV, that is going to have a longer life than people expect. Satellite still has a cost and efficiency edge when it comes to distributing live sports, news and events, and it will be in that business for a long time to come.

"What applies to satellite, however, does not apply to teleports. Because of their established role as content aggregators and distributors, teleports are providing their broadcast customers with all the services and transport needed to manage, prepare and distribute content over the Web. The same economics — shared use of complex and costly technology, and people — translate easily from satellite to online."

On the other hand, cloud services, which the WTA labels as a new and important kind of capacity, are on the verge of becoming a staple of teleport operations. This is regardless of whether teleports incorporate Amazon Web

Services or other third-party offerings in their operations, or they provide their own cloud infrastructure, platform and services to customers.

These new services also have the potential to compete for business that has long been at the core of teleport services. Bell adds: "The cloud is a technology development that is now affecting how every teleport customer thinks about their requirements, and the expanding options for meeting those requirements."

Hence, the WTA stresses the importance for teleport operators to develop a cloud strategy, as they need to know what cloud capabilities customers could benefit from, and where the growth opportunities are. Furthermore, they also need to consider on preserving and strengthening their competitive advantages when adopting the cloud for specific services, or when integrating the cloud into their operations.

To fully embrace the benefits cloud

services might bring forth, teleport operators have to first implement an IP infrastructure within their facility. Although IP is a technology — like cloud — emerging from the IT space, the teleport industry has been running IP infrastructure and transmitting IP for years, Bell says. “Instead of a threat, it has been a boon to operations, because it turns a welter of standards into a single one that can be managed easily across every kind of network.”

“Teleport operators have also been investing in building data centres for ingesting, managing, scheduling and distributing content. So, the rise of IP video for online distribution finds teleports perfectly positioned to meet the new needs of customers.”

Last month, the WTA awarded STN provisional certification of its Slovenia Teleport located near Ljubljana under WTA’s Teleport Certification Programme, an initiative that is aimed to create an objective and internationally accepted method for teleport operators to document the quality of their operations for customers and partners, as well as customers, to select teleport vendors that is appropriate to their applications.

Since its inception in 2004, STN has been providing solutions for broadcast over satellite with its expertise in enabling media companies to facilitate single-channel startups, as well as transmitting multiple direct-to-home (DTH) satellite platforms. To date, the Slovenia-based teleport operator has transmitted more than 600 TV channels with its global reach extended into the regions of Europe, the Middle East, Asia, Africa and the Americas.

Mitja Lovsin, COO of STN,



ABS has master control rooms located in the Philippines, Indonesia, and with its partner teleport in Hong Kong, to manage and operate broadcast services for its clients in the media industry.

says: “The way in which we communicate has evolved beyond all recognition over a relatively short period of time, and it’s all down to mobility. Our reliance on mobile devices has brought about the demand for constant connectivity, anywhere and everywhere.”

“The hub is no longer the home. Offices and businesses, governments and individuals, all expect to have the same connected experience no matter where they happen to be. These changes are having a profound effect upon the teleport sector, and are set to shape the satellite industry and its ground infrastructure for years to come.”

While most teleports have previously focused on either data or broadcasting services, Lovsin points out that it was “very rarely” the case that one teleport would divide its business equally between both segments. He elaborates: “However, future developments in connectivity will without doubt make most teleports, which have

been broadcast-centric, shift their focus to the data and connectivity segments. With what will probably be the biggest increase in satellite infrastructure ever, the opportunities for teleports are on the rise.

“We are entering a brand-new era against the backdrop of announcements of ‘mega’ small satellite constellations operating in Low Earth Orbit (LEO) and Medium Earth Orbit (MEO), as well as the traditional geostationary (GEO) satellites. This is going to create huge opportunities and challenges for teleport operators, but this is most definitely an exciting time.”

It is also critical for teleports operators to show agility in their business, according to Lovsin, adapt to follow market trends and adjust their infrastructure accordingly to fulfil future market demands for ubiquitous connectivity and new broadcasting methods, as well as offering cost-effective satellite packages.

Agreeing on Lovsin’s point of mobility advancement, WTA’s Bell

suggests that viewers are now living in the “golden age” of TV, with access to vast amounts of high-quality programming online and on-demand. “That trend seems likely to continue and accelerate, but it is also easy to forget that what we experience in the world’s rich nations is still not available to a majority of people on the planet. I expect satellite technology to find new markets delivering content, most likely through hybrid platforms that may include LEO and mobile for interactivity,” he says.

Also seeing the adoption of hybrid models is ABS, whose satellite services span across the Americas, Africa, Asia-Pacific, Europe, the Middle East, Russia and Commonwealth of Independent States (CIS) countries.

Simon Chow, director, broadcasting products and projects, ABS, explains: “For linear channels, satellites still remain the most effective way to deliver content, as building an IP infrastructure to simultaneously deliver hundreds of channels seamlessly will be challenging and very expensive.”

“The video-on-demand (VoD) and non-appointment based content viewing will be delivered through IP, thus making business sense for operators and content providers to have a hybrid solution. This will allow them to save costs and make their offerings to viewers at a lower price tag while increasing the volume uptake.”

Stressing that TV broadcast will remain a critical part of content consumption, Chow highlights that broadcasting will endure as the backbone of content delivery as it is the “most reliable and fail-proof mechanism”. Especially for the demand of HD

and 4K/Ultra HD (UHD) formats, these high-resolution content will demand the necessary bandwidth requirement.

“Content production is on a growth curve as more and more screens and options are available to consumers. Content providers are continually looking at the markets to monetise the content,” he adds. “With compression and modulation technologies developing, the ability to pump more content into the same bandwidth will make it more cost-effective for broadcasters and the platforms to launch more channels as the content is available to be consumed.”

Although 4K/UHD acquisition is increasingly being adopted, Chow reveals that 4K/UHD production is not yet readily available in most post facilities, and 4K/UHD content for TV is still “not reaching a critical volume for mass 24x7 broadcasting”.

He continues: “This situation is similar to the deployment of HDTV 10 to 15 years ago, which took a period of time for the market to migrate from SD to HD. Now HD video production is common, and 4K/UHD is promising. However, it is just a matter of time before high-speed network video production infrastructure becomes common.”

“Efficient modulation modes and advanced DVB-S standards nowadays are ready to deliver premium content in higher data rate to broader regions. Noticeably, some of our clients are starting to upgrade their facility and introducing 4K/UHD services to their audiences by offering options to replace their existing set-top box with 4K/UHD boxes. This is encouraging and a good approach to 4K/UHD adoption.” **APB**

AIMS Productions connects Resorts World Sentosa with MediorNet

AIMS Productions, a Singapore-based visual production company specialising in multimedia for live events, has chosen Riedel Communications’ MediorNet real-time signal transport and network technologies for a high-profile new ballroom project at the Resorts World Sentosa complex in Singapore.

Riedel’s MediorNet MicroN high-density media distribution network devices will provide flexible signal connectivity for a new 360-degree projection system in the ballroom. In consultation with its client, AIMS has developed one of the world’s largest — if not the largest — 360-degree permanent projection systems for the ballroom.

Choong Yip Weng, general

manager, AIMS Production, explained: “To address signal connectivity for the entire projection ecosystem, we turned to Riedel Communications. Riedel has proven itself time and time again as the leader in the field of fibre-based, real-time media network technology.”

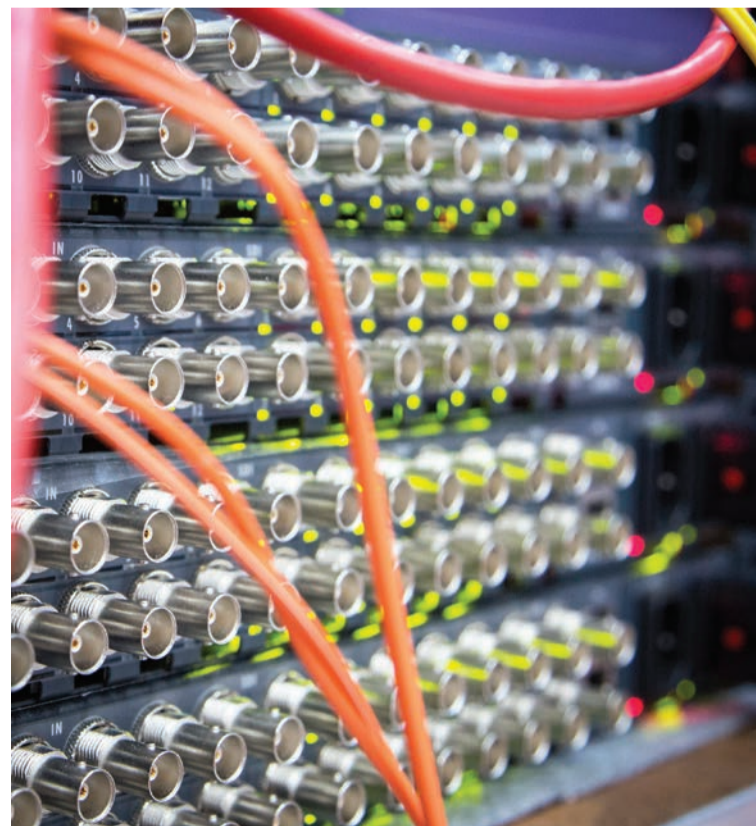
“We firmly believe in the adage ‘the chain is only as strong as its weakest link’, and for that reason we chose Riedel for its cutting-edge, high-bandwidth data transport and signal-distribution technologies.”

According to Weng, the MediorNet MicroN devices provide Resorts World Sentosa with “unlimited flexibility” in moving, processing and distributing signals. Each MicroN, he added, offers a highly

versatile, high-density signal interface with built-in signal processing features that eliminate the need for many external devices.

Rajveer Singh, general manager, South-east Asia, Riedel Communications, concluded: “We are very proud to bring Riedel’s MediorNet family of products into Singapore, especially with such an esteemed customer as Resorts World Sentosa.”

“Riedel’s system consulting team played a proactive role in the design of the system, working hand-in-hand with AIMS to construct an efficient solution. This cooperation, coupled with the comprehensive feature set that MicroN is known for, resulted in a winning solution for Resorts World Sentosa.”



Riedel’s MediorNet MicroN in use.

APB

X-PLATFORM

EVS supports full-IP remote news production



IBC TV, the official channel of IBC, is rolling out a fully IP-connected live production workflow at IBC2018, based on the SMPTE ST 2110 standard. For the 10th consecutive year, IBC TV is partnering with EVS to deliver IBC-related news and interviews live to screens throughout the RAI exhibition centre in Amsterdam, and to the IBC TV website. Explaining why EVS was chosen again, Matthew Tomkinson, technical director, IBC TV, said: "We knew that adopting a full-IP system meant it was crucial to choose live production tools that would enable the simple management of the overall infrastructure."

Introducing the Qvest.Cloud

Systems integrator Qvest Media has introduced Qvest.Cloud, an advanced management platform that enables third-party cloud applications to be networked into one integrated end-to-end workflow; and which can be used and monitored via a central user interface. Based on an open interface design, third-party IT and media applications can be easily integrated with Qvest.Cloud, according to Qvest Media.

Next Month @ X-Platform

Social and Interactive TV

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Chong Siew Loong
CTO
StarHub



Michael Cronk
Chairman,
Alliance for IP Media
Solutions (AIMS)



Peter Bithos
CEO, HOOQ

More video codecs emerge to ease video delivery

Whether it is HEVC/H.265 or the more recently released AV1, there is now a variety of video compression standards available to allow operators to deliver high-quality content in a more cost-effective manner to their audiences. **Shawn Liew** reports.



PHOTO CREDIT: ISTOCK BY GETTY IMAGES

In the interim, the AV1 video codec is likely to appeal more to operators who deliver content primarily over the Internet to multiple connected devices.

If you are visiting IBC2018 this month, and looking in particular for connectivity solutions for live production, you may be inclined to visit Dejero at **booth 11.C15**.

As a company, Dejero believes that there is an inexorable shift towards the HEVC/H.265 video compression standard to efficiently transport high-quality video from the field.

Todd Schneider, CTO of Dejero, tells *APB*: "Dejero has been refining its encoder in low-latency, high-quality live broadcast applications, and you'll see even better video quality from us at IBC2018."

"We have a multi-faceted roadmap for the improvement of video quality and it's not just the encoder — the whole system must work in concert to deliver the goods."

A roadmap that is supported by HEVC/H.265 and manifested in solutions such as the Dejero EnGo, which is equipped with increasing processing capability to boost overall performance and deliver enhanced picture quality, Schneider said, adding: "It combines our industry-leading auto-transport and adaptive bitrate encoding technology with HEVC/H.265 compression."

He also suggests that in challenging network conditions in a live production environment, HEVC/H.265 "really shines".

"If you are in a mobile or nomadic scenario and you do not have good connectivity,

HEVC/H.265 and the improved compression efficiency it offers can be incredibly useful — ensuring high-quality video even in low-bandwidth environments."

As to how broadcasters and content producers can most effectively make HEVC/H.265 work in live production, Schneider is keen to highlight that lab measurements of video encoding quality only tell part of the story. Instead, the entire system, which consists of wireless, blending algorithm and the adaptive rate video encoder, must be considered because they all contribute to picture quality.

To that end, Dejero's auto trans-

"If you are in a mobile or nomadic scenario and you do not have good connectivity, HEVC/H.265 and the improved compression efficiency it offers can be incredibly useful."

— **Todd Schneider,**
CTO, Dejero



port feature automatically adjusts bitrate and resolution to ensure the highest picture quality for specific network conditions. “In situations where you’re concerned with cellular coverage or network congestion, a combination of blended cellular and satellite — as provided by our CellSat connectivity solution — provides improved reliability, enhancing picture quality.

“In short, like strong links in a chain, the overall system matters most,” Schneider concludes.

When HEVC/H.265 was first introduced, it was expected to replace AVC/H.264 as the most efficient video compression standard (and is still regarded as such by many). But what if there is a new codec that can provide approximately 35% better compression efficiency than HEVC/H.265?

Meet AV1, an open-source, next-generation and royalty-free alternative technology for delivering video over the Internet, and which was launched in late March this year by the Alliance for Open Media (AOMedia).

The launch of AV1, according to David Godfrey, vice-president and general manager, Asia-Pacific, Bitmovin, marks a “significant shift” in the balance of power in online entertainment by challenging traditional business models, and enabling innovation in social video, mobile video, virtual reality (VR) and online TV — all without having to pay historical IP owners.

According to Bitmovin, AV1 provides about 35% better compression efficiency at the same quality, when compared to HEVC/H.265 and VP9. Godfrey adds: “The emergence of AV1 as a royalty-free codec is the first time that online video innovation will be possible without making payments to a pool of incumbent, traditional media and consumer electronics companies.

“AV1 opens the playing field to Internet companies to, potentially, take more of the lead in video entertainment. It also means more predictability as companies will not be affected by changes in patent pools.”

Supported by technology titans such as Apple, Google, Facebook, Intel and Cisco, AV1 is derived primarily from the in-house codec technologies of the founding companies, including Google (VP9, VP10), Microsoft (Windows Media), Cisco (Thor) and Mozilla (Daala).

Emphasising the royalty-free nature of AV1, Carl Furgusson, vice-president, portfolio strategy, MediaKind (formerly Ericsson Media Solutions), says: “AV1 is royalty-free for both equipment vendors to supply and operators to use, providing anyone joining or implementing AV1 in products



“AV1 opens the playing field to Internet companies to, potentially, take more of the lead in video entertainment.”

— David Godfrey,
Vice-President and General Manager, Asia-Pacific,
Bitmovin

grant free use of any of their patents that are relevant to AV1, and you do not sue anyone else for patent infringement for using AV1.”

According to Furgusson, the main uses for AV1 will most likely be low bitrate adaptive bitrate video streaming to multi-screen and mobile devices. However, because it technically supports 4:2:0/4:2:2/4:4:4 chroma sampling, AV1 can potentially be used in a wide range of professional video applications.

“It also supports 10bit along with 8bit, so has the bit-depth to support high dynamic range (HDR) video,” Furgusson continues. “AV1 is likely to be adopted by the big streaming giants such as YouTube and Facebook, who are currently using VP9 — as well as other video codecs — and who want to achieve maximum device and customer reach for their apps.”

Crucially, he also notes that there are no fundamental technical barriers to implementing AV1 into other streaming formats. This is despite the fact that standards groups such as MPEG are yet to update specifications like MPEG-DASH to support AV1 — so that the industry has a “clear reference” to ensure end-to-end interoperability, says Furgusson, who adds: “With some care in implementation, it is technically possible to carry AV1 in MPEG-2 transport streams.”

Where compression efficiency is concerned, AV1 is a natural next step, concedes Dejero’s Schneider. However, he is quick to add: “AV1 provides better compression but demands significantly more computation. Right now, if you want to encode in portable, low-power, low-latency applications, AV1 is

not applicable.”

He cites the example where Facebook conducted AV1 tests, where it took them a couple of hours to encode one second of video. “AV1 requires 2,000 to 3,000 times more computing power than HEVC/H.265, so it’s just not practical for many applications, especially low-latency and low-power ones,” Schneider reiterates.

Instead, he believes that AV1 will, in the interim, be a boost for the likes of over-the-top (OTT) service providers such as Netflix. “The cost to encode video is going to be distributed over millions of views, so if you need piles of computing power, that’s fine.”

It is true that AV1 is a more computationally intensive codec than HEVC/H.265, acknowledges MediaKind’s Furgusson. “In best performance mode, the current reference model for AV1 can take 177 days to encode one hour of 1080p60 video,” he notes. “With

the AV1 specification now completed, the next phase of work for the AOMedia is to speed up the operation of the reference model, and gain support for AV1 in popular open-source tools and developer frameworks.”

When that happens, Furgusson is convinced that AV1 and HEVC/H.265 can deliver comparable performance results, with the former capable of achieving the 50%+ bitrate reductions of the latter (when compared to AVC/H.264), but on a royalty-free basis.

Broadcasters should give serious consideration to the adoption of AV1, urges Bitmovin’s Godfrey. He explains: “Adopting AV1 is important because shrinking video files means higher quality video can be sent over the same network infrastructure for a richer, more compelling user experience, and reduce delivery costs for popular content.”

With broadcasters looking to experiment with hardware-based acceleration for encoding and decoding, Godfrey predicts the investment of “significant engineering resources” to bring AV1 to market very quickly.

AV1 can also provide a huge boost to the 360-degree video and virtual reality (VR) industry, as it allows huge video files to be delivered over existing bandwidth, says Godfrey. “This could help drive new social video experiences on platforms such as Facebook and Instagram.

“AV1 is also a particularly interesting opportunity for emerging markets where the highest bandwidth connection can be 100Kbps. The ability to offer reliable, non-buffering — or very infrequent buffering — for HD video on devices such as mobile is very compelling.”

Agreeing with Godfrey, MediaKind’s Furgusson points out that, much like HEVC/H.265, AV1 supports tile-based encod-

ing, giving it support for the latest concepts in bitrate-efficient VR/360-degree video delivery over bandwidth-restricted networks. For higher resolution video, AV1 also supports up to 128x128 pixel macro-blocking processing — a capability higher than HEVC/H.265 (maximum 64x64 pixel micro-blocks), according to Furgusson.

As to which codec operators eventually decide to go for, many factors are in play, he highlights. These include: deployment time-scales, delivery network, target consumer device and decode capability, as well as the volume of consumer devices and the associated royalty and licensing costs.

“At this nascent stage, all AV1 decodes will be software-based, making it most applicable for use on PC Web browsers, or newer and more powerful tablets/phones as the decoder,” Furgusson says. “Work continues to improve encoding time and reduce computational requirements. Based on commercial factors, AV1 will most likely be limited to file-based processing, while encoding of live TV channels is much further away.

“Combining all these elements make AV1 most likely to be deployable for enterprise, social media, or video-on-demand (VoD)/subscription video-on-demand (SVoD)/catch-up TV services to high volumes of PC and multi-screen devices.”

And perhaps, AV1 is not the only candidate to start a potential codec war with HEVC/H.265, with a joint ITU/MPEG group already formed to create another next-generation video compression standard called Versatile Video Codec (VVC) — intended to supersede HEVC/H.265. According to Furgusson, VVC is on track to become a standard in 2020, and initial testing has already shown at least 40% more efficiency than HEVC/H.265.

This, he adds, makes VVC a disruptive force from a bitrate-efficiency perspective, particularly for 4K/UHD and 8K, as well as 360-degree video-over-Internet delivery. “The advent of a new MPEG codec will inevitably prompt a whole new round of debates about what the royalty situation is going to look like, and will hopefully learn from the HEVC/H.265 situation,” says Furgusson, who nevertheless, describes AV1 as “a great codec waiting to happen.”

He concludes: “AV1 is a technical achievement and a step towards reducing total cost of ownership for delivery of video to a growing global consumer base. But, in the fast-moving media world, there will be a race just around the corner, between AV1 and VVC.” **APB**



“AV1 is a technical achievement and a step towards reducing total cost of ownership for delivery of video to a growing global consumer base.”

— Carl Furgusson,
Vice-President,
Portfolio Strategy,
MediaKind

Is predicting the future of broadcast difficult?

After many years working in any industry, it is typical that a lot of your friends are involved in the same industry as you, be they suppliers, customers, colleagues or business partners. And thus, it follows that you and your friends are likely in some way affected by the fate of that industry. I meet many people who work in various broadcasting roles around South-east Asia (SEA), and quite a few from around the world, and what I find surprising is how little they talk about the future of our industry. Fewer still are doing much to change that future.

Why is it important to change the future of TV? Well, let us take a look at what is presently happening and extrapolate that to help us predict the future.

There are many different types of broadcasters; for simplicity, let us look at two of the main types of indigenous TV operators in SEA, free-to-air (FTA) broadcasters and pay-TV operators. The former has two main types: national broadcasters, typically funded by the government; and commercial channels, mainly funded by advertising.

While the advertising model has served FTA broadcasters well for many years, the tide is changing. In 2017, online advertising spend reached US\$210 billion worldwide, representing 41% of the market and beating TV for the first time in the history of broadcast and the Internet — with TV bringing in \$178 billion, representing 35% of the market. Furthermore, that spending delta is not just growing over TV ad spend, it is accelerating.

Now, let us take a quick look at pay-TV operators, be they IPTV, satellite or cable. They too are partially

funded by advertising, but also have their monthly subscriptions to rely on. How reliable is that subscription? Up until now it has been pretty robust, so why change?

Well, let us look at the West and see how things are there. According to nScreenMedia, US cable, satellite and telecom TV services lost 3.5 million subscribers last year. 2017 proved to be the worst year ever for the traditional pay-TV industry in the US, and this was one of the more conservative numbers. According to a report from Digital TV Research, US pay-TV revenues peaked in 2015 at \$101 billion but will decline by 26% to \$75 billion in 2023.

So where are all the TV viewers going? Older viewers, while watching free TV on the Internet and subscribing to over-the-top (OTT) services like iFlix and Netflix, are still watching TV and maintaining their subscriptions. The big change are the young adults, or the digital native millennials, who do not want to be saddled with monthly subscriptions to pay-TV operators. Nor do they want to wait until Saturday at 9pm to watch a show — they are the 'now' generation, who are much more comfortable consuming video on mobile devices than their parents.

For this new generation, linear TV is too restrictive, too scheduled, and too old-fashioned! The problem is, they are not only future subscribers, but they are the present spenders that companies want to advertise their products to. If they are not watching TV, the ad companies will advertise where they are watching, on platforms like Facebook, where they are engaged and spending their time.

To make matters worse for traditional broadcasters, Facebook and Google have become TV operators too.

It would seem that there is a general inertia in SEA when it comes to investing in new broadcast infrastructure. This is necessary to increase flexibility of delivery and to deploy new high dynamic range (HDR) and 4K/Ultra HD (UHD) services; to build new 4K/UHD TV studios for more vibrant productions, and roll out new and cost-effective solutions to allow more live coverage of multiple events and specialist programming.

It is clear to me that, if we do not start changing the way we broadcast today and what we broadcast, predicting the future of broadcast will not be difficult. □

FINTAN MC KIERNAN,
CEO, Ideal Systems,
South-east Asia,
and an APB Panellist



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SYSTEMS INTEGRATION

2 0 1 8

As viewing consumption habits continue to evolve, this special supplement will highlight why it is more critical than ever for broadcasters & operators to find the right technology partners to build new infrastructures based on converging technologies, including hybrid IP/SDI systems.

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