



NEWS & VIEWS	6	CREATION	20	MANAGEMENT	26	DISTRIBUTION	30	X-PLATFORM	34
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**WORLD IN BRIEF**

**Facebook to launch new video platform**  
**SAN FRANCISCO** – Facebook has announced Watch, which will allow users to watch live or recorded videos around specific themes and storylines. The social media platform is also reportedly ready to bid for video rights from exclusive rights holder Fox Sports, for the 2018 FIFA World Cup.

**SVoD a hit Down Under**  
**SYDNEY** – Australians are flocking to subscription-video-on-demand (SVoD) services, reaching 3.7 million at end-June 2017, a year-on-year increase of 30%, reported Telsyte, a technology analyst firm. Telsyte also predicted that SVoD subscriptions in Australia are on track to overtake traditional pay-TV subscribers by June 2018.

**VR ushers new era of immersive content**  
**NEW YORK** – 360-degree video, virtual reality (VR), interactive and immersive content formats will generate US\$6-billion worth of revenue by 2020, according to ABI Research, who also pointed out how producers, content owners and distributors are experimenting with new media and creative tools.

# Critical to ‘air-gap’ network and content

BY SHAWN LIEW

**AMSTERDAM** – While many may strive towards a digital utopia, is the world also, as an unwanted consequence, heading towards an era of cyber insecurity?

The recent global ransomware attack left many companies paralysed, and the recent cyberattack on HBO is hardly the first time broadcast and media companies have been targeted by hackers.

A paradigm shift is occurring in response to the spate of global data breaches that are decimating consumer trust and undermining commercial brands, said Cameron Brown (@AnalyticalCyber), who is a cyber defence adviser and information security strategist, as well as a lawyer and digital forensic investigator.



The recent cyberattack on HBO highlights the critical need for broadcasters to be more vigilant in protecting key digital media assets from hackers.

He told APB: “Corporations and governments who understand the new *status quo* are investing heavily in dedicated governance structures, integrated security architecture, identity and access management, data loss prevention, threat intelligence and de-

ployment of security operations centres to mitigate vulnerabilities and bolster resilience.”

Broadcasters, he added, would be well advised to adopt these holistic approaches to secure informational assets and equip in-house security teams with tools needed to extend visibility across data repositories, systems and critical infrastructure.

And in this instance, size does not matter, as Brown explained: “As with all industries, the capacity of broadcasters to fend off cyber threats is mixed and varied. It is not necessarily the case that larger broadcasters are better equipped — rather, it boils down to the degree of visibility and sponsorship that information security has at a board level.”

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# BBC upholds its ‘trusted source of news’ principle

**LONDON** – The digital age has irrevocably altered the paradigm from which news is consumed. As platforms to access news — mainstream or otherwise — continue to emerge, are viewers and consumers able to effectively separate the signal from the noise?

Globally, the spread of ‘fake news’ has been an issue over the past year, Jim Egan, chief executive, BBC Global News, told APB. Citing a recent BBC study, he pointed out that in Asia-Pacific, three quarters of news consumers are concerned about fake news and two-thirds struggle to distinguish

real news from fake news.

Egan continued: “In a world in which there is an ever-thickening ‘information smog’ of false facts and filter bubbles, the digital age means it is increasingly likely that people will only see one side of any story.”

As much of the content in social media feeds is chosen by algorithms, rather than real life curation and moderation by a human being, bias is also likely to set in.

“It’s easy for people to consume a diet of news

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**BBC Global News’ Jim Egan:** “In a world in which there is an ever-thickening ‘information smog’ of false facts and filter bubbles, the digital age means it is increasingly likely that people will only see one side of any story.”

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# Protect your content, defend your infrastructure – stop cyberattacks now!

Highly secured bank vaults, or even rudimentary home safes, have long been a manifestation of the desire to keep valuables secured and protected against theft, unauthorised access to documents and other intrusions.

As digitisation continues to re-shape the broadcast and media sectors, are there enough digital bank vaults or safes to protect key digital media assets?

The recent cyberattack on HBO would seem to suggest that the answer is 'NO'. As Time Warner awaits a potential acquisition by AT&T, the last thing it would have wanted to hear is how one of the most universally popular shows — *Game of Thrones* — on one of its networks has been leaked prior to broadcast.

Most worryingly, perhaps, is the fact that this is hardly an isolated incident. Other high-profile cyberattacks include a 2014 assault on Sony Pictures Entertainment, where content, personal details and correspondence were stolen.

In 2013, computer networks in South Korea were paralysed, including those from national broadcasters KBS and MBC.

Where cybersecurity is concerned, broadcasters need to consider two key issues — protecting their assets from theft, and protecting their operations from service outage, Richard Welsh, VP of Education, SMTPE, told *APB*.

Welsh was part of a panel of speakers who presented a webinar hosted by IBC titled *Broadcast under attack: Protecting content and defending infrastructure* in July, which served as a prequel to the Cyber Security Forum that will be introduced at IBC2017.

The HBO attack clearly falls into the first scenario identified by Welsh. Arguably, the second scenario is even more worrisome. While Welsh concedes that putting in place and maintaining a top-of-the-line cybersecurity system can be costly

and disruptive, he urged broadcasters to consider the alternative cost if their operations become compromised because of successful cyberattacks. Or to put this into wider perspective, imagine a scenario where major broadcast services are driven off the air, even for "just" a few hours.

This is not to say that broadcasters are intentionally neglectful when it comes to cybersecurity. In the wake of recent destructive attacks and with new privacy regulations on the horizon, more broadcasters are becoming more active in recruiting internal security talent and working alongside external cybersecurity and data breach experts, said Cameron Brown, cyber defence adviser, information security strategist, lawyer and digital forensic investigator, who was also one of the speakers at the IBC webinar.

It is clearly a case of having to do more, as cyberattacks become increasingly sophisticated and complex. Trade shows such as IBC will also have a key role to play in bringing together all stakeholders to discuss how a collective effort can be forged to ameliorate, if not completely eradicate, cyberattacks.

The last thing the broadcast and media industries need in a digitised world is to be paralysed and held ransom by having key digital media assets compromised or being deprived of the ability to broadcast.

It is, perhaps, time to ask ourselves: Are we able to protect our content and defend our infrastructure, or are we just sitting ducks waiting to be blasted?

*Shawn Liew*

**SHAWN LIEW**  
MANAGING EDITOR



## EDITORIAL

managing editor  
**Shawn Liew**, shawn@editecintl.com  
online editor  
**Millette Burgos**, millette@editecintl.com  
contributing editor (technology)  
**Karl K Rossiter**, karl@editecintl.com  
contributing editor  
**Shirish Nadkarni**, shinads@yahoo.co.uk  
senior reporter  
**Josephine Tan**, josephine@editecintl.com

## CORRESPONDENTS

■ India  
**Shirish Nadkarni**, shinads@yahoo.co.uk  
■ USA  
**Mike Feazel**, mfeazel@gmail.com

## PRODUCTION

production editor  
**Zuraini Ridzwan**, zuraini@editecintl.com  
sub-editor  
**Genevieve Chan**, genevieve@editecintl.com  
senior multimedia designer  
**Raymund Jaudian**, raymund@editecintl.com  
multimedia designer  
**Waldomar Zuniga**, waldomar@editecintl.com  
ad/office administrator  
**Irene Lok**, irene@editecintl.com  
accounts manager  
**Tan Hui Min**, huimin@editecintl.com

## MARKETING

director - sales & marketing  
**Jessie Tan**, jessie@editecintl.com  
manager - sales & marketing  
**Lynn Chee**, lynn@editecintl.com

## CIRCULATION & PROMOTIONS

**Lynn Chee**, lynn@editecintl.com

## PUBLISHING

publisher/editorial director  
**Andrew Yeo**, andrew@editecintl.com

## MEDIA REPRESENTATIVES

■ China  
**Yang Ou**  
BEIJING BUNCH EXHIBITION SERVICES LTD  
Room 501/B1, Thunis Development Building, No. 11 Huixin East Street, Chaoyang District, Beijing 100029  
Tel: +86-10-6482 3808-106  
Fax: +86-10-6482 3670  
E-mail: yangou@bbes.com.cn

## ■ Japan

**Mikio Tsuchiya**  
WORLD MEDIA SERVICES INC  
3-35-1-302, Hongodai, Sakae-Ku, Yokohama 247-0008  
Tel/Fax: +81-45-891-1852  
E-mail: mikio.tsuchiya@worldmedia.jp

## ■ USA & Canada

**Gary L Rhodes**  
SEADOR MEDIA INC  
775 Park Avenue, Suite 255, Huntington, NY 11743, USA  
Tel: 1-631-274-9530  
Fax: 1-631-667-2871  
E-mail: sedorusa@optonline.net

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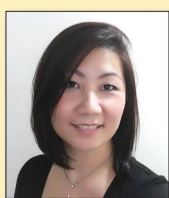
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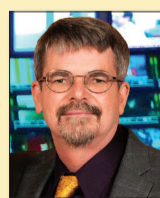
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# contents

September 2017 (volume 34 issue 7)



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## News & Views

- 6 VIEW FROM THE TOP: Moving to IP production: The JT-NM roadmap**  
Willem Vermost, Network IP Media Technology architect, European Broadcasting Union (EBU), provides an update on the JT-NM roadmap.
- 10 PROMPTINGS: Fox rolls out plus-sized service over the top**  
Prakash Ramchandani, senior VP, SVoD digital, Fox Networks Group Asia, explains how the new Fox+ service is complementing Fox Networks Group Asia's OTT strategy.
- 12 EVENTS: Preview of IBC2017 and Calendar of Events 2017.**

## Creation

- 20 FEATURE: Virtual broadcast sets bring new possibilities**  
In the increasingly challenging quest to win viewer ratings, creativity and cost-efficiency are arguably two key attributes that will provide broadcasters with a competitive advantage. Virtual broadcast sets, while a relatively new concept, may well allow broadcasters to unleash their creativity and find more cost-effective ways of creating content
- 22 Catering VR to audiences key to long-term success**  
The BBC examines consumer reaction to virtual reality (VR), and details how broadcasters can make the technology work for them.

## Management

- 26 FEATURE: Digital age calls for multi-pronged approach to content security**  
Digital media assets are the lifeblood of broadcasters and pay-TV operators, particularly as multi-screen, multi-device viewing becomes more pervasive. How can operators prevent these key assets from being compromised by cyberattacks and digital piracy?
- 29 Charting TV's evolution: From television (TV) to total video (TV)**  
Nick Burfitt, managing director, APAC, Kantar Media, explains why the demands placed upon TV audience measurement are changing in accordance to the change in TV viewing.

## Distribution

- 30 FEATURE: IP-equipped OB vans ready to hit the road live**  
With IP technology being increasingly adopted in outside broadcast (OB) vans, the live broadcast set-ups demand new approaches in terms of workflows and design.
- 33 IHSE's Draco tera KVM switch connects broadcast facilities in Asia**  
IHSE's KVM solutions are supporting broadcast operations in both China and Japan.

## X-Platform

- 34 FEATURE: TV Everywhere addresses demand for more personalised viewing experience**  
In some of the most developed and connected countries in the world, there are probably more mobile devices than TV sets in a household. And as viewers continue to embrace multiple devices for content consumption, how does the concept of TV Everywhere enable broadcasters to deliver their content from screen to screen?

## PostScript

- 38 PostScript: Surfing the OTT wave**  
DVB chairman Peter MacAvock examines how -broadcasters can better surf the OTT wave.



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# Moving to IP production: The JT-NM roadmap

BY WILLEM VERMOST

The use of IP-based networks has long ago infiltrated the broadcast environment. As more bandwidth became available, more broadcast services were moved to this common technology.

What once was a technology to move files around, or to control the state of equipment, has moved step-by-step into the very core of the production process. The last piece of the workflow puzzle (live production) still uses a specialised niche technology known as SDI. What slowly started as a rebellious slogan during IBC2013, "SDI must die!", is becoming reality. IP-based production has become a widely adopted industry goal in the past 12 months and European broadcasters have added several new projects to the growing list of IP-based facilities to be built. There is even a completely up-and-running facility as we speak, using a full IP backbone.

The momentum to deliver with IP is huge. How can we be reassured that all the flexibility that is made possible with IP networks will converge into real, working, interoperable systems using open standards?

**VIEW FROM THE TOP**

## The JT-NM roadmap update

The JT-NM Roadmap of Networked Media Open Interoperability shows which standards and specifications enable the JT-NM Reference Architecture, how the range of underlying technologies is expected to evolve, and when it is expected that an interoperable multi-vendor system can be built around standards and specifications. The roadmap is updated bi-annually to reflect the currently known present state and to adapt the forward-looking assumptions with the latest industry insights.

The update prior to IBC2017 will bring some clarification to layer IV (dematerialised facilities). The *Oxford*

**“IP-based production has become a widely adopted industry goal in the past 12 months and European broadcasters have added several new projects to the growing list of IP-based facilities to be built.”**

*Dictionary* defines this intriguing verb, 'dematerialize', as: "become free of physical substance". If we think about it, this is nothing new. A recent article I saw put it this way: "It is not about what is coming, it is about what is fading away".

To give a tangible example, sending a letter from A to B is demonstrably dematerialised. When was the last time you had to ink paper in the form of a letter, fold it into an envelope and go to a post box or office? Nowadays, email has replaced most paper-based communication.

Another example of dematerialisation is the way we deal with money; now, it is merely about some numbers on an account and a small piece of plastic called a credit card.

What has happened to other industries will happen to our industry as well. Increasingly, physical and dedicated boxes with knobs and tons of interconnecting cables will disappear and run as a piece of software on a server or even somewhere on a public cloud.

Public media services want to benefit from rapid deployment, the economies of scale and the instant scalability to accommodate peak moments as and when they arrive, for example, in the case of big events. Cloud technology is all about optimally sharing resources and being able to accommodate peak moments.

I think we can all agree on the fact that there is a big gap between what can be controlled on a physical server in your own data centre, a local cloud, Infrastructure as a Service (IaaS), Platform as a Service (PaaS) or even Software as a Service (SaaS).

The further the solutions are pushed towards service providers, the less industry-specific the solution can be. The challenge is to use common or non-media-specific technologies in combination with the capabilities provided by most of the current cloud providers.

The JT-NM will have a hard task to define what exactly dematerialisation implies in our industry. It probably will not be a simple black or white answer; it is much more likely to be a greyscale!

We are looking forward to the update, as this roadmap has proven to be effective in guiding and driving our industry towards the current reality of IP-based production and beyond. The new version will be shown during IBC2017 at the IP showcase.

## The IP Showcase

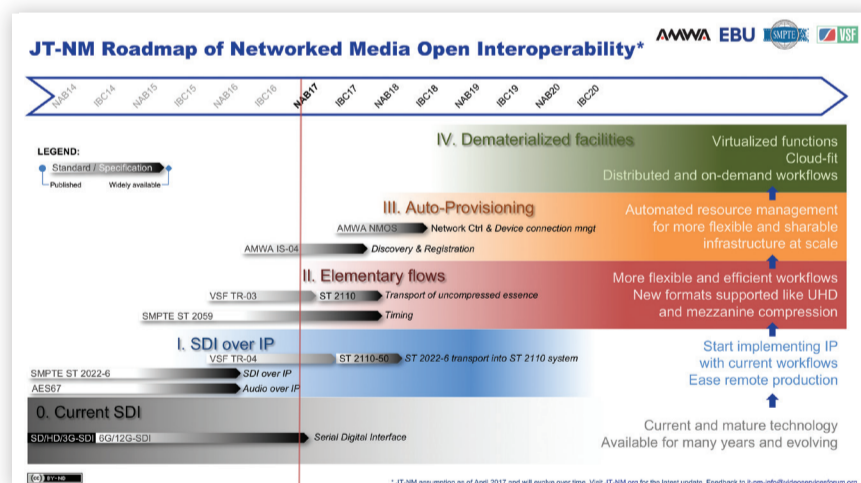
IBC is building on last year's highly appreciated IP Interoperability Zone with

a new 'IP Showcase' for the 2017 show, set to take place from September 14-19 at the RAI Amsterdam.

More than 50 vendors will work together to demonstrate real-world IP interoperability based on the "to be" SMPTE ST 2110 standard suite and AMWA NMOS specifications — a single set of common IP inter-op standards and specifications that are enabling the flexibility and efficiency of IP in real-time media. With more companies demonstrating their IP-based products, and great progress having been made in formalising and universally adopting the SMPTE ST 2110 suite, the IP Showcase is set to be a major destination for visitors to IBC2017.

The integrated IP Showcase theatre, curated by IABM, will be running a non-stop series of presentations covering the full range of knowledge for real-time live IP production. This demonstration is brought to you by: AES, AIMS, AMWA,

EBU, IABM, MNA, SMPTE and VSF. Visitors will be able to learn a great deal about the current state of implementations, real existing deployments of live IP production facilities and talk to the experts. What is really exciting to know is the fact that a demonstration like this is well prepared up front. All manufacturers are working together to get their latest products and demonstrations up and running. If you are about to make an investment in your broadcast facility, the IP showcase is a must see at IBC2017. **APB**



The JT-NM Roadmap of Networked Media Open Interoperability has proven to be effective in guiding and driving our industry towards the current reality of IP-based production and beyond, says the European Broadcasting Union.

Willem Vermost is Network IP Media Technology Architect at European Broadcasting Union (EBU).

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Following up on IBC2016's IP Interoperability Zone, IBC2017 is featuring the IP Showcase, where more than 50 vendors will work together to demonstrate real-world IP interoperability based on the SMPTE ST 2110 standard suite and AMWA NMOS specifications.



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**Stagebox**

**Scalable media network** (1)

**On-screen display** (5)

**Delay measurement** (8)

**IP compatibility**

**Quadsplit** (6)

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**NEW** MediorNet MultiViewer

# Asian OTT players secure over US\$240m from global investors

**HONG KONG** – PCCW Media, the media arm of Hong Kong-headquartered PCCW, has welcomed Chinese investment firm Hony Capital, Taiwanese electronics manufacturer Foxconn and Singaporean state fund Temasek, as investors of PCCW OTT.

According to PCCW Media, the three companies will invest a total of US\$110 million for a stake of around 18% in PCCW OTT, the over-the-top (OTT) media service provider behind video streaming services Viu and Vuclip, as well as music streaming service MOOV.

Janice Lee, managing director of PCCW Media Group, outlined the objective of this strategic investment: "Bringing these reputable partners in the business will support our current plans, and strengthen our lead in the market with the introduction of more locally relevant and original content, and technology to support innovative production development — all of which are beneficial to our ecosystem comprising users, advertisers and business partners."

As of June this year, Viu has more than 12 million users in 15 countries across Asia and the Middle East. The service, launched in October 2015, operates on a dual-model of an ad-supported tier of service and a premium subscription tier of service. Moreover, Viu offers original production series under the "Viu Original" initiative.

Vuclip, which joined the PCCW family in May 2015, provides

Web-based and short-form content video services. It is available in 19 markets, including India, South-east Asia, the Middle East and Africa.

Besides PCCW Media, another OTT service provider who has secured additional funding is Malaysia-headquartered iflix. The company has recently completed a \$133-million funding round, totalling up to \$220 million raised this year.

Led by US media company Hearst, the new round of funding has attracted EDBI, the corporate investment arm of the Singapore Economic Development Board, and DBS Bank, a multinational banking and financial services corporation based in Singapore.

Mark Britt, co-founder and group CEO of iflix, concluded: "These new funds will allow us to further execute our local content strategy, and expand our technology and development teams so we can continue to rapidly evolve the iflix service to meet the challenges of emerging markets."

iflix has debuted its first original production *Oi Jaga Mulut* in Malaysia, and has partnered TVOne for the streaming of Indonesian football league GO-JEK Traveloka Liga 1 and Liga 2 matches.

Over the past 12 months, iflix has expanded from four to 19 markets across Asia, the Middle East and Africa. The company has also established partnerships with 27 telcos to bundle the service with consumers' mobile data subscriptions.

## Service providers must adequately protect assets

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The challenge is the "significantly wider" attack surface broadcasters are subjected to, compared to other industries. "The infrastructure that broadcasters depend upon to deliver their service spans many telecommunications mediums, including electromagnetic, webcasting, cable and satellite transmissions," said Brown.

There is a worrying trend that cybercriminals are several steps ahead of the broadcast industry, suggested Richard Welsh, CEO of Sundog Media Toolkit and VP of Education at SMPTE.

He said: "With a move to far more connected/remote services, it's becoming increasingly hard to 'air gap' the production network from the outside world.

"This approach is also proving to be ineffective as large quantities of data are still literally walking out the door on physical media.

"So, what appears on face value to be a cyberattack is often physical theft, but the distribution method thereafter is online."

As the financial and operational imperative to provide more connected services for production and distribution increases the attack surface, theft — physical and online — is likely to increase in the near term, Welsh warned.

Both Welsh and Brown were speakers at a webinar hosted by IBC365 in July. Titled *Broadcast under attack: Protecting content and defending infrastructure*, the webinar served as a prequel to the C-Tech Forum: Cybersecurity that will be held on Friday, September 15, at IBC2017.

According to Welsh, broadcast organisations need to consider two key issues — protecting their assets from theft, and protecting their operations from service outage.

For instance, he cited the example of content analysis using artificial intelligence for analytics and

metadata, which may require accessing multiple cloud services with the same asset moving to each for processing. "This could mean assets are pushed, pulled or most likely, a combination of both," Welsh said. "In this scenario, it is incumbent on service providers to adequately protect those assets at every stage with robust encryption, good key management and layered access control."

Ransomware, as a form of cyberattack, represents a much broader challenge, because such attacks are often indiscriminate and exploit newly discovered weaknesses in widely used software or protocols.

While Welsh acknowledged that keeping software, operating systems and critical system firmware up-to-date can be costly and disruptive, he urged the consideration of the alternative cost if broadcast operations are compromised because of successful attacks.

Strengthen the resiliency of your staff so as to endure and eliminate threats that have penetrated perimeter defences, advised Brown. "Given that the workforce is the first line of defence, broadcasters must engender more effective channels of coordination and collaboration when responding to security incidents.

"Regularly exercising business continuity plans and conducting crisis management training are vital components to empower staff and business units."

Broadcasters should also continue to keep pace with the latest threats to their users, data and systems, Brown added, by putting in practices such as prioritising asset management; leveraging intrusion detection and prevention systems to help monitor networks and mainframes; and combining firewalls and IP filtering to limit access to networks and address



**Cyber defence adviser Cameron Brown:** "Given that the workforce is the first line of defence, broadcasters must engender more effective channels of coordination and collaboration when responding to security incidents."



**Richard Welsh, CEO of Sundog Media Toolkit and VP of Education at SMPTE:** "With a move to far more connected/remote services, it's becoming increasingly hard to 'air gap' the production network from the outside world."

attacks from the inside.

It is no longer a question of *if*, but *when*, a cyberattack will strike, predicted Song Boon Kok, lead for Enterprise IT Cybersecurity Incident Management, Mediacorp. "The convergence of traditional analogue broadcast devices with IP has posed a new breed of cyber risks to broadcasters," he elaborated. "The need to have such devices connected to the Internet for fast and rich content delivery has indirectly put broadcasters in a new cyber ecosystem — and this has substantially increased the threat level in this domain."

Having recently completed a move to the new Mediacorp Campus, a 12-storey state-of-the-art production and digital broadcast facility, Mediacorp has also implemented a new security-perimeter design and workflow to mitigate against cyberattacks, Song revealed.

He illustrated: "All media entering the broadcast network for on-air and production need to go through a sanitising process to ensure that they are free from any potential cyber threat in a staging environment.

"To mitigate threats, Mediacorp defends the network perimeter and continuously monitor the entire IT environment to quickly detect, contain and remediate breaches.

"Regularly performed cybersecurity incident response exercise/training also exposes gaps and flaws in documented response processes, and helps to develop the capabilities of our response team."

## BBC: Cater to consumers seeking out quality, impartial journalism

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that already reflects their existing views and prejudices," Egan explained.

This, however, should be seen as an opportunity to strengthen the traditional news institution that provides "trusted and reputable" sources of news, he said, pointing out how the BBC's global audience figures have grown from 108 million per week to 121 million per week in the past one year.

One major contributing factor to this success, Egan believes, is how the BBC is catering to consumers who are increasingly seeking

out quality, impartial journalism in the 'post-truth' era.

He said: "Rather than abandoning long-standing editorial principles, there is a greater need than ever for trusted, transparent news and for news providers, who report the facts, host the argument and interrogate the participants."

And while more people are receiving news on social media platforms, the BBC has found that TV remains the most popular platform for staying up-to-date with international news, and alongside social media, are the joint number one go-to sources for discovering breaking news.

"For those using social media, international news channels are the top alternate source for fact-checking," Egan added.

Where journalism is concerned, the tried and tested, such as the BBC's journalistic principles of accuracy, balance and impartiality, continue to form the bedrock of trust in the news. However, he cautioned: "The collapse of trust in news media plays a big role in what is happening around the world, [and] it is time to bring those principles into a contemporary context.

"We need to be more confident about what journalists are good at, which is exploding myths, calling

people out, and holding individuals and claims, to account.

"Our skills are now more necessary than ever."

While keen to retain the key elements that have established the BBC as one of the most trusted media organisations in the world, Egan was also keen to highlight how embracing new platforms is also an imperative.

The BBC news can be accessed on multiple platforms; and syndication of its content takes place in collaboration with partners such as Hulu Japan. Last year, the BBC Player, an authenticated subscription video-on-demand (SVoD)

service, was also made available in Asia.

A big mandate for the BBC in 2017 will be digital innovation. Egan revealed: "We aim to constantly push the boundaries when it comes to reporting the news in new and innovative ways, whether that's by launching vertical video for mobile on the app or doing Facebook Lives.

"We are building news analysis within our mobile and online content ... In addition, you'll see us leading the way on data journalism, by making it a core element of the BBC's expertise in visual journalism."



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# Fox rolls out plus-sized service over the top



PROMPTINGS

*Making its debut in Asia in March this year, Fox+ is a subscription-based over-the-top (OTT) platform developed by pay-TV operator Fox Networks Group Asia (FNG). Besides offering Hollywood blockbusters and*

*TV series, Fox+ also streams several sports tournaments around the globe to viewers live, allowing subscribers to watch wherever the action kicks off.*

**APB** prompts Prakash Ramchandani, senior vice-president, SVoD digital, Fox Networks Group Asia, for more details.

Since May this year, viewers in Singapore have been able to browse more than 11,000 hours of programming across multiple genres — including TV series, Hollywood blockbusters, Chinese series and movies, live sports, and documentaries — on Fox+, the subscription video-on-demand (SVoD) streaming service from Fox Networks Group Asia (FNG).

The Singapore launch follows on the heels of Fox+'s Asian debut in March, when it was made available in the Philippines. With competition already intense due to the presence of the likes of Netflix and Amazon Prime Video, FNG has designed its SVoD service to provide viewers with "specially curated content for an extensive and upgraded viewing experience, anytime and anywhere".

Prakash Ramchandani, senior vice-president, SVoD digital, Fox Networks Group Asia, tells **APB**: "The media industry has been seeing a rapid adoption of over-the-top (OTT) consumption. Content-wise, there is more emphasis on producing specific curated shows, as well as trying new formats to suit various segments.

"Although OTT is still in its early stages, the content experience is more lean-forward via

mobile, which is more relevant to Asian markets, whereas the lean-back experience, whereby viewers consume content via TV sets, has a higher penetration in the US. However, with more services being launched, and existing players complementing their products by bundling revenue opportunities, there are more options for the end-user."

Fox+ features blockbuster movies such as *Deadpool*, *X-Men: Apocalypse*, *Kung Fu Panda 3*, and *The Revenant*, as well as American dramas, such as *The Walking Dead*, *Homeland*, *The Young Pope* and *24 Legacy*, for subscribers to binge-watch at their convenience.

For subscribers in Asia, Fox+ is also presenting its extensive content library comprising Chinese and Asian movies, variety and drama series including *Heartfall Arises*, *S Storm*, *Ip Man 3*, *Train to Busan*, and *Stylish Man the Chef*.

Ramchandani adds: "As consumers become increasingly Internet-savvy, and as they watch their shows on-the-go on their mobile devices, we believe that the next step forward for Fox would be to integrate our strong content offerings and database across our various channels, and look at how

else we can offer this to enhance the consumer experience through Internet streaming.

"This is how Fox+ came about — to offer consumers an upgrade to a personalised entertainment experience so that they can use it to their convenience. Storytelling lies at the heart of Fox, and we have enhanced our skills to continuously adopt new technologies while serving the best content to our viewers."

FNG has also added its sports programming division — Fox Sports — into the SVoD service, providing sports fans front row seats to some of the biggest games and sporting action live. For instance, Fox+ live streamed the Formula One Spanish Grand Prix racing tournament in May, and The 2017 Wimbledon Championships tennis tournament in July.

Declaring that users of Fox+ see "great value" in live sports, Ramchandani reveals that at the Grand Slam tennis tournament, "the concurrent streams jumped four times during the men's single final, compared to a typical week". He continues: "The platform provided a complete combination of SVoD and live content, and all live content can also be consumed via



**"Storytelling lies at the heart of Fox, and we have enhanced our skills to continuously adopt new technologies while serving the best content to our viewers."**

**— Prakash Ramchandani,  
Senior Vice-President, SVoD digital,  
Fox Networks Group Asia**

playback VoD, including multi-camera, extra court feeds and in dual-language audio, where applicable."

As a pay-TV operator managing its linear business for many years, FNG collaborated with its affiliate partners for the launch of Fox+ in both the Philippines and Singapore. For instance, FNG partnered Singapore telco Singtel for the launch of the SVoD service in the republic. Available via Singtel's Cast OTT video app platform, Fox+ serves as a complementary service, which existing pay-TV subscribers can bundle into their existing packages, says Ramchandani.

He elaborates: "Fox+ lends itself to a multi-device offering in each market, complementing pay-TV services to serve all individuals within the households, thus growing the existing ecosystem. Furthermore, Fox+ also allows new opportunities with telcos and broadband providers to serve data and mobile bundled options."

Besides Fox+, FNG has also expanded its digital offering with the introduction of the National Geographic mobile app. The app debuted in Australia in July, and is launched in collaboration

with FNG's telco partner, Optus, a subsidiary of Singtel.

The National Geographic app brings together a treasure trove of videos, images and print articles, including the work of its explorers, photographers, filmmakers, scientists and conservationists. Alongside the two live TV channels — National Geographic and Nat Geo Wild — available on the app, viewers can also access more than 7,000 short- and long-form videos, including 1,500 TV show episodes, and over 28,000 photos and galleries by some of National Geographic's photographers.



**Besides Hollywood blockbusters and TV series, the Fox+ content library also consists of Asian and Chinese content catering to Asia-Pacific viewers, live sports from its sport programming division Fox Sports, and documentaries from National Geographic.**

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**What's on Screen**



Join celebrity judges Gary Mehigan, Matt Preston and George Calombaris in the ninth season of *MasterChef Australia*.

**Lifetime claims top GE ratings with *MasterChef Australia S9***

**SINGAPORE** – Driven by the ninth edition of *MasterChef Australia*, Lifetime, a female-focused entertainment TV channel by A+E Networks Asia, has recorded top average primetime English general entertainment (GE) ratings in Singapore and Malaysia.

According to Lifetime, *MasterChef Australia S9* enjoyed the highest average primetime ratings across 12 reported English GE channels in StarHub TV's entertainment pack in Singapore. In Malaysia, the culinary competition reality series also claimed the No.1 spot in average primetime ratings across the six channels of Astro's Variety Pack.

The 63-part *MasterChef Australia* features 24 new home cooks from different walks of life, and viewers can catch the culinary challenges presided by celebrity judges Gary Mehigan, Matt Preston and George Calombaris.

**VIMN partners Solar Entertainment to launch MTVph**

**PHILIPPINES** – Viacom International Media Networks (VIMN), a division of Viacom, and Solar Entertainment, a Philippine content provider and TV network, has launched a new local MTV channel — MTVph. Starting last month, the 24-hour youth entertainment network is delivered in the Philippines through an MTV Asia feed.

Paras Sharma, SVP and general manager, South-east Asia, VIMN, said: "We are thrilled to work with Solar Entertainment to not only bring a brand-new MTVph into the Philippines, but also expand MTV's reach across platforms."

Under the deal, the channel will progressively present more localised MTV content that will introduce and feature Filipino acts to local viewers.

**Viu expands Asian content library with new tie-ups**

**HONG KONG** – PCCW Media Group's over-the-top (OTT) video service, Viu, has expanded its library of Asian content, following new collaborations with *tvN Movies* and *Now Baogu Movies on Demand*.

Viu subscribers can now enjoy South Korean movies across different genres from *tvN Movies*, and a wide selection of Asian movies from China, Hong Kong and Taiwan from *Now Baogu Movies on Demand*, a joint initiative among Now TV, Edko Films

and Huayi Brothers.

Some of the South Korean titles Viu subscribers can look forward to include hit action movies *Confident Assignment*, *The Prison* and *Fabricated City*, as well as zombie apocalypse action thriller *Train to Busan*.

**Starring Gong Yoo, *Train to Busan* premiered in the midnight screenings section of the 2016 Cannes Film Festival, and is now available on Viu.**



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G&D AT IBC STAND 1.B10

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## Data privacy can build consumer trust & competitive differentiation



*When it comes to data, video service providers need to go beyond simply keeping it safe*

The data-privacy landscape is changing in terms of consumer expectations, legislative frameworks, and regulatory enforcement. Worldwide, there are now more than 100 countries with data privacy laws, but even in regions where they do not yet exist, it needs to be a priority for video service providers to build trust with customers through self-enforcement of clear data privacy practices.

That was the consensus among an audience of video service providers and industry experts during an interactive panel event Verimatrix hosted in conjunction with CommunicAsia2017 in May. The discussion put a spotlight on how big data will transform the video experience and took a deep dive into how video analytics and data privacy best practices can provide video service operators with a competitive edge.

Beyond regulatory and technical dimensions of data stewardship, the audience reaction places a heavy emphasis on ethical considerations for data privacy, suggesting that ethical approaches to protecting subscribers' personal data should be deemed appropriate, or even demanded, in instances where formal regulations have yet to be put into motion.

As video service providers continue to depend more and more on insights gained from customer data, it is becoming clear that this concept of "good data stewardship" is going to be a key source of differentiation. Savvy organisations have a window of opportunity to create a competitive advantage by adopting a customer-centric view, designing appropriate privacy controls and practices into their services, and building and maintaining trust with their customers.

**Privacy will inevitably become part of every video service provider's brand; therefore, it will be the organisations that recognise this early on that will have the competitive advantage.**



**Steve Christian,**  
SVP  
Marketing,  
Verimatrix

This is a clear takeaway from a recent survey report Verimatrix commissioned from Castlebridge and TechPolis entitled, *Reality Check: A Look at Today's Data Privacy Practices of Video Service Providers*. This follow-up piece to our white paper, *Best Practices in Data Privacy for Video Service Providers — The Five Core Elements*, reveals how actual best practices of video service providers stack up, and fall short, to the five core elements of data policy best practices.

Key findings from the paper indicate the following: a gap in approaches to transparency in how data about consumers is processed; a lack of focus on communicating with consumers how their data is used; a low level of maturity in the governance of data among video service providers, limited subscriber control over how data is processed; and a bias towards protecting the organisation when assessing risk involved with processing personal data.

So, it would seem that despite being increasingly aware of a growing need to secure and respect the personal data privacy of their subscribers, video service providers are leaving treacherous gaps between their current processes and the recommended best practices.

The bottom line is that privacy will inevitably become part of every video service provider's brand; therefore, it will be the organisations that recognise this early on that will have the competitive advantage.

Verimatrix, as a long-standing guardian of revenue from video services, is now well positioned as a specialist in the integrity of personal data collection and the associated data warehouse. Visit us at IBC2017 booth 5.A59 to learn more and download our latest paper today at [www.verimatrix.com/dataprivacysurvey](http://www.verimatrix.com/dataprivacysurvey). □

# IBC celebrates 50th anniversary by maintaining proud traditions

**AMSTERDAM** – In 1967, the first International Broadcasting Convention (IBC) was held at the Royal Lancaster Hotel in London, featuring just 32 exhibitors and 500 conference delegates.

Back then, the founders identified three key strands that will make IBC a success: a comprehensive exhibition, a visionary conference and the networking opportunities to share ideas.

As IBC2017 prepares to welcome 55,000 visitors to the Amsterdam RAI Exhibition and Convention Centre, these beliefs have continued to hold true, even as IBC continues to evolve. Michael Crimp, CEO, IBC, says: "IBC has evolved along with the industry, or rather, IBC has strived to identify the key trends which will transform the industry, and ensure that we are ahead of the curve."

And even in today's digital age, trade shows such as IBC will continue to play a key role by providing opportunities for visitors to get hands-on with technology, and to ask "awkward questions" of vendors, Crimp suggests, adding: "With the whole industry in one place, it is also the chance to bring technology partners together, to talk through the details of interactivity and interoperability. IBC is the best place to do this because we work hard to deliver the best experience for visitors."

Besides the show floor, where some 1,700 exhibitors are highlighting the latest broadcast technologies, Crimp also urges visitors to find time to attend the IBC Conference, which comes with the theme of *Truth, Trust and Transformation*.

Featuring five tracks running over five days, session topics range from the "deeply technical", such as new codec design, to fake

news and alternative facts. "There is not just something for everyone — there is a lot for everyone," Crimp says. "The industry is so much broader than it once was. Consumers used to watch TV, because that was all the that the technology could achieve. Today, they expect to choose what they want to watch, when and where they want to watch it, and on the device and platform which happen to be convenient at the time."

Besides applying to the IBC Conference, *Truth, Trust and Transformation* is also the over-arching theme for IBC2017, because it is hard to ignore the rapid proliferation of terms such as 'fake news' and 'alternative facts' over the past year, Crimp explains. He asks: "Broadcasters have traditionally been the trusted brand for news: Is the era of social media and universal Internet access changing that?"

Crimp also identifies one of the challenges of the transition to IP connectivity — the risk that the media industry will become a major target for malware and hackers. "As the transport platform becomes more open, the more we need to focus on cybersecurity and the intrinsic design of safe, secure systems," he says.

Such is the attention that IBC2017 is paying to cybersecurity, that a day has been devoted to the topic at the new C-Tech Forum, which features two days of specialist presentations and debate. The main conference will also feature a session on cybersecurity on Friday, September 15, where experts from around the world will debate what can, and should, be done to protect content and operations.

Other highlights of IBC2017 include an emphasis on virtual reality (VR) and augmented reality (AR), which are asking



IBC celebrates its 50th anniversary this year by welcoming 55,000 visitors to the Amsterdam RAI Exhibition and Convention Centre.



many questions. Crimp offers: "We know what VR can do, but how can we tell stories with it? How can we monetise it?"

For those who like the outdoors, outside broadcast (OB) trucks and drones will continue to be a key attraction at the outdoor exhibition areas and as Crimp is keen to highlight, he believes every single visitor will find the answers to their own particular questions — or questions shared by most, as the convergence of media industries continues.

Crimp explains: "Whereas once there might be specialist sessions, or even a separate event, for the presentation industry, or digital signage, or local TV

infrastructures, now they have all become part of one open, connected media world.

"There is no difference, for example, between a broadcast monitor wall and a large-scale digital signage system or an industrial control centre. They all depend upon IP connectivity and intelligent processing to put multiple virtual screens on a single high-resolution display. That same IP connectivity might connect a broadcast facility or an AV centre."

The IBC2017 Conference is held from September 14-18, while the exhibition takes place from September 15-19. For more on what you can expect on the exhibition floors, turn to pages 14-18.

**"IBC has evolved along with the industry, or rather, IBC has strived to identify the key trends which will transform the industry, and ensure that we are ahead of the curve."**

— Michael Crimp, CEO, International Broadcasting Convention (IBC)



## Verizon Digital Media Services plays it smart



Verizon Digital Media Services is offering Smartplay, a one-to-one session-management system that enables content owners to realise greater insights and create more effective monetisation strategies for their content.

At **booth 7.C11**, Verizon Digital Media Services is highlighting how Smartplay offers users smarter delivery, insights, advertising, programming, discovery and protection by generating dynamic manifests for each user.

It is designed to eliminate the complex systems and poor visibility associated with reliance on "loosely stitched together" supply chain providers, says Verizon Digital Media Services. Smartplay also eliminates additional costs and delays in preparing content for different platforms and monetisation strategies. As a result, the service makes it easier and more economical for content providers to launch and operate successful over-the-top (OTT) services while maintaining a high quality of service, the company adds.

Visitors can also check out the Volicon Media Intelligence Service, which enables broadcasters to use video capture, archive, compliance monitoring and automated clip-creation technology to bring high-quality content to viewers quickly via OTT-based delivery.

Verizon Digital Media Services is demonstrating how Volicon Media Intelligence Service unites digital media transformation workflows from the worlds of traditional broadcasting and OTT delivery, in turn reducing the cost and complexity of multi-platform delivery.

The service records broadcast content across interfaces — including SDI, transport stream and analogue — for the purposes of monitoring, compliance and review. Integration of the service with the Slicer application, part of Verizon Digital Media Services' Uplink Video Streaming service, puts compliance, monitoring and OTT delivery in a single footprint within a broadcaster's facility.

The Slicer application gives broadcasters the ability to ingest video, encode it into multiple bitrate profiles, encrypt it and distribute it via OTT or video-on-demand (VoD) services, as well as through Web and social media sharing platforms.



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## G&D highlighting new KVM systems

Guntermann and Drunck (G&D) is displaying new keyboard, video and mouse (KVM) solutions for the extension of high-resolution 4K/Ultra HD (UHD) and 8K video signals.

One of these next-generation solutions is the KVM extender DP1.2-VisionXG, which transmits up to 8K resolutions at 60Hz — uncompressed, loss-less and without any latency, says G&D.

The KVM system consists of a computer and a user module, and allows operators to benefit from uncompressed transmission of high-resolution DisplayPort videos over distances up to 10,000m.

The device is available in variants with up to four video channels and because of the source synchronicity of the video chan-

nels, even video resolutions up to 8K can be extended over long distances. The DP1.2-VisionXG uses optical fibres for the dedicated transmission of signals, thus providing enough bandwidth for uncompressed, high-resolution DisplayPort 1.2 video signals, keyboard/mouse, RS232, USB2.0 and audio.

Another highlight at **booth 1.B10** is the demonstration of the new DP1.2-Vision extender generation, which is fully compatible with G&D's digital matrix switches and allows the extension, switching and distribution of 4K/UHD video through these matrix systems. The KVM extender system provides "pixel-perfect" images and uses G&D's in-house HDIP compression technology in the latest development stage, Level 3. This compres-



G&D's DP1.2-VisionXG KVM extender transmits up to 8K resolutions at 60Hz.

sion mode allows the loss-less transmission of video signals with a resolution of 4K/UHD at 60Hz. The systems thus require less bandwidth to transmit signals, while providing "crystal-clear images" and latency-free operation, G&D adds.

## Dejero demos new connectivity and video transport solutions

Dejero is demonstrating its latest innovations in the field of IP network blending and how it can support newsgathering and remote broadcasting as the industry transitions towards IP.

A key highlight at **booth 12.B42** is the Dejero Gateway in-vehicle mobile connectivity solution, which allows crews working on location to send and receive large files and access their newsroom or media asset management (MAM) systems, as well as cloud services used for collaboration. With Dejero providing access to the public Internet and private networks using high-bandwidth blended network technology,



reporters can complete stories on location by securely accessing systems, searching and download-

**The Dejero Gateway in-vehicle mobile connectivity solution allows crews working on location to send and receive large files and access their newsroom or media asset management (MAM) systems.**

ing archived footage, editing their stories and uploading completed packages ready for air, without having to return to the station.

Making an IBC debut is Dejero's EnGo Vehicle Mount Kit with integrated signal booster. The kit enhances the RF performance of the Dejero EnGo mobile transmitter by providing a mounting option inside a newsgathering or production vehicle that connects to roof-mounted high-gain antennas placed for optimal performance.

According to Dejero, the kit essentially converts the Dejero EnGo into a rack-mounted encoder found in cellular, satellite or multi-transmission path vehicles. It can then be quickly disconnected and placed in a backpack, or mounted directly on a camera, to give crews maximum mobility when on the scene of breaking news and live events.

Visitors can also check out a HEVC/H.265 implementation from Dejero that is designed to "greatly improve" picture quality in low bitrate environments, especially when combined with real-time adaptive bitrate control and Dejero's auto transport technology.

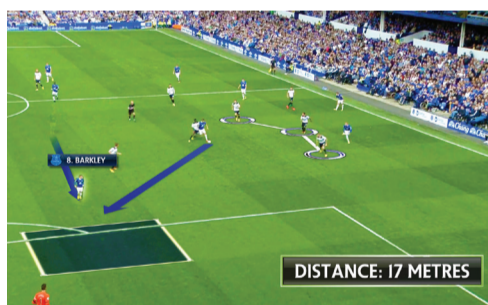
## ChyronHego enables all-software production workflows

ChyronHego is showcasing its latest product innovations that enable end-to-end, all-software workflows for both news and sports production.

These include the CAMIO 4.3, the company's latest update of its graphic asset management server. With this version, CAMIO brings new editing, file distribution and virtualisation capabilities to the CAMIO Universe, ChyronHego's software-based newsroom production ecosystem.

CAMIO 4.3 also includes new graphic scheduling capabilities for LUCI5, the company's HTML5-based, modular user interface for newsroom producers. With LUCI5, producers are now able to browse, create and order images and video assets from CAMIO, and then schedule graphic playback for their automation systems.

Making a European debut is the VPX Virtual



**ChyronHego's Paint telestration and analysis solution is designed to meet the specific requirements of sports broadcasters.**

Production Server, a virtual server platform for hosting end-to-end live production workflows. By enabling broadcast news operations to run entire content creation and playout workflows in a virtualised, IT-based environment, VPX is

said to power highly efficient, cost-effective and easy-to-manage production operations for news, sports and other programmes.

At **booth 7.D11**, ChyronHego is also highlighting a number of sports production solutions, including the latest version of PRIME, its resolution-agnostic, software-based rendering engine that leverages advanced 64-bit GPU- and CPU-based technologies for maximum power in rendering graphics and effects.

To meet the specific requirements of sports broadcasters, ChyronHego is introducing the latest version of its Paint telestration and analysis solution. Using Paint's telestration tools, producers can visually analyse game play for virtually any sports by graphically enhancing and highlighting video clips created from live footage, or files stored elsewhere.

## ARRIS showing off connected, immersive and personal entertainment solutions

ARRIS is demonstrating how the set-top device is evolving to support tomorrow's video services, including the delivery of 4K/Ultra HD (UHD) video to and around the home. ARRIS is also discussing how it can guide operators through the migration to IP video.

Highlights at **booth 1.B19** include:

- **The Wi-Fi connected home:** Enabling optimum in-home wireless connectivity with "robust and reliable" Wi-Fi solutions that enable the streaming of 4K/UHD video. ARRIS is discussing how it can help reduce support costs using auto-configuring network extenders, self-optimising networks, remote management and consumer self-help apps.

- **Broadband and video devices:** Delivering the latest broadband and video experiences, ARRIS' devices are built on next-generation platforms, such as Android, RDK and set-top virtualisation.

- **Taking 4K/UHD HDR to the next level:** ARRIS is demonstrating 4K/UHD set-top devices that support all the common high dynamic range (HDR) formats, as well as 4K/UHD primary distribution, transcoding to multiple formats and high-density encoding.

- **Video in a DAA world:** As cable networks transition to Distributed Access Architectures (DAA), ARRIS is outlining options for delivering adaptive bitrate (ABR) and quadrature amplitude modulation (QAM) video over the Remote-PHY technique.

- **IP video and over-the-top (OTT) streaming:** ARRIS is highlighting solutions that optimise the video headend for content delivery to every screen, including content protection, nDVR, advertising, personalised content and so forth.

# Shaping the future of media

Take a joyride with us at IBC booth 1.B40





## Enter the 4K/Ultra HD market with Apantac

Apantac, a provider of multi-viewers, video walls, extenders and signal processing solutions, is displaying two new models in its HDMI 2.0 UHD multi-viewer series.

The MiniDE-4-UHD and the MiniDE-4-UHD-K are designed to display up to four sources on a single 4K/Ultra HD (UHD) monitor or projector. It also allows users to mix input resolutions and sources all the way up to 4K/UHD on a single display.

The HDMI 2.0 UHD family, according to Apantac, offers "affordable and high-performance" entry into 4K/UHD multi-image



display for a variety of broadcast and ProAV visual environments, including control rooms and digital signage. At **booth 8.E37**, a demonstration sees four computers connected, with keyboard, video and mouse (KVM) functionality in a multi-viewer display environment.

The MiniDE-4-UHD accepts 4x HDMI inputs, 1x VGA input, 1x DisplayPort input, 1x analogue audio input, 1x HDMI output and 1x DisplayPort output as well as an



Apantac is displaying the MiniDE-4-UHD (above) and the MiniDE-4-UHD-K of the HDMI 2.0 UHD family.

analogue audio output.

The MiniDE-4-UHD-K, on the other hand, displays up to four HDMI computer inputs with keyboard and mouse functions on the same screen. Both multi-viewers accept SD, HD and 4K/UHD at 60Hz input resolutions.

The output resolution can be set for 1280x720p at 60Hz, 1920x1080p at 60Hz or

3840x2160p at 30Hz/60Hz — all with 4:4:4 colour sampling. There are six pre-defined and eight customised possible screen layouts, while PIP (picture-in-picture) and POP (picture-outside-picture) modes are also supported. Control and configuration is handled through a Web interface, Ethernet and RS232.

## Smart home service solutions from ABOX42

Through its show offerings, ABOX42 aims to show how operators can differentiate themselves from the competition and increase revenue streams.

One solution the company is keen to highlight is the M35 Series high-end, smart set-top boxes (STBs) for the global operator market. Offering an upgrade path to 4K/Ultra HD (UHD) TV, ABOX42 says that the M35 STB is ideal for operators who want to support an HD and 4K/UHD platform, side-by-side, in a user deployment without requiring any changes to the software or service. The company adds that the M35 Series also offers premium content security, allowing operators to meet the stringent requirements of 4K/UHD Hollywood content.

ABOX42 is also demonstrating advanced MPEG-DASH playout, with support for live TV, local recording, restart TV, cloud recording and time-shift TV.

Through MPEG-DASH and the adaptive streaming standard, operators can provide a complete television experience delivered over over-the-top (OTT) and managed IP networks. ABOX42's MPEG-DASH-based TV solution includes multi-audio, teletext, subtitle and HbbTV support to ensure a "superior viewing and listening experience" for end-customers.

Also lined up is ABOX42's dotIO end-to-end operator smart home solution, which provides operators with all of the essential hardware, cloud and mobile components they need to offer compelling services to end-users. With dotIO, operators can quickly roll out innovative smart home services as an extension of their existing service offerings and multi-service bundles, to generate additional revenue streams within the customer base, acquire new subscribers and reduce churn.

Find out more at **booth 14.C17**.



ABOX42's M35 set-top box allows operators to support both HD and 4K/Ultra HD content.

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The AdderLink Infinity is an IP-based KVM extender or matrix that improves workflows and allows for a flexible infrastructure through its ability to scale in response to the user's needs.

## Adder Technology featuring IP-based KVM technology

IP and keyboard, video and mouse (KVM) technology are two "extremely hot topics" within broadcasting today, says Adder Technology, who is looking to explain to visitors the benefits that IP-based KVM technology can deliver to their applications.

Specifically, Adder is demonstrating how its range of IP-based KVM switching, matrix and extension solutions are enabling broadcasters to streamline workflows, increase ROI and maximise productivity across different facilities.

Whether in a studio control room or a post-production suite, KVM technology can deliver value and performance in any broadcast environment, including those in which 4K/Ultra HD (UHD) and HDR10 video extension are required, says Adder.

Visitors to **booth 7.C30** can check out AdderLink Infinity, an IP-based KVM extender or matrix that improves workflows and allows for a flexible infrastructure through

its ability to scale in response to the user's needs. Redundant network operation capabilities offer failover assurance, while "pixel-perfect" technology ensures better-than-HD resolutions.

Adder CCS-PRO8 is a command and control switch that enables users to control up to eight different machines across eight displays using just one mouse or keyboard. With support for multiple monitors that combine audio and independently route USB connections, the CCS-PRO8 adds ergonomic and efficiency value with some additional features.

The AdderLink XDIP is a high-resolution, "ultra-low latency" digital KVM extender that is geared specifically towards small and medium-sized applications. It offers flexible application and ease-of-use for A/V professionals in all industry sectors, and allows users to maintain control at all time, whether from a single facility or from multiple locations.

## VSN introducing you to a new PAM

Headlining VSN's show exhibit is a new and advanced production asset management (PAM) tool designed to provide project visibility and streamline the management of workflows and material.

Integrated within VSNE Explorer, VSN's flagship media and business process management platform, this latest version of VSNE Explorer PAM software gives production teams continuous control of on-going projects from a single screen, enabling production departments to become more efficient and collaborative, VSN says.

The company adds that the easy-to-use intuitive tool delivers a range of capabilities designed for today's time-constrained production teams. These include: Browsing and discovery of metadata and assets through a hierarchical tree view; custom at-a-glance management of all tasks, whether completed or in progress; user-permission management for more effective visibility, control and collaboration; and asset creation within the interface.



WEDIT is a Web-based editing tool that allows journalists and editors to edit videos and prepare them for broadcast from a single and unique interface.

At **booth 7.D25**, VSN is also highlighting WEDIT, a Web-based editing tool integrated within VSNE Explorer. Developed in HTML5, this quick-and-easy tool allows journalists and editors to edit videos and prepare them for broadcast from a single and unique interface, without having to switch to another system.

Within the VSNE Explorer interface and integrated with a full-featured media asset management, WEDIT users can work on footage and clips located in deep archived, near-line or online storage. In effect, WEDIT is a "cloud content editor", because it allows users to access and edit files on the cloud, a capability that can boost collaboration between editors and departments.

## Shotoku's Graphica camera crane makes European debut

Shotoku Broadcast Systems is introducing Graphica, its new series of manual virtual/augmented reality (VR/AR) tracked camera cranes.

Graphica, produced in collaboration with crane manufacturer CamMate, is a range of VR/AR tracked camera cranes offering tracking capabilities in a portable package that is scalable, stable and repeatable. Graphica calculates positional data output from embedded physical rotary encoders specifically designed for VR applications, and processes data via an SPI interface to provide real-time data output, in the studio or on-location.

Shotoku is also showcasing its SmartPed robotic pedestal, a fully robotic XY pedestal designed to address the creative and commercial demands of on-air

environments. The three-wheel, smooth-steer pedestal features a new height column that does not require pneumatic balancing, and is equipped with multi-zone collision avoidance and detection systems.

Other highlights at **booth 12.E42** include the SmartTrack ceiling-mounted rail track camera system. Having been deployed in Sky News UK's "Glass Box" studio, Shotoku is demonstrating the camera control that can be achieved with a ceiling-mounted track/elevation system.

Also on show is the Free-d2 Absolute tracking system, a next-generation tracking system that does not require physical encoders attached to the camera support's moving axes.

Particularly suitable for VR/

AR news, sports and current affairs live studio productions, Free-d2 uses advanced video processing algorithms and simple ceiling markers to precisely determine the exact position and orientation of the studio camera. This, says Shotoku, provides highly accurate and constantly referenced position tracking.

Shotoku Broadcast Systems is presenting Graphica, its new series of manual virtual/augmented reality (VR/AR) tracked camera cranes, for the first time in Europe.

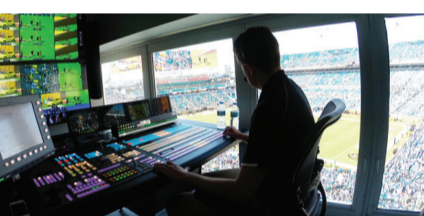


## Ross Video showing 'smart production' solutions

Ross Video, which has installed more than 235,000 assets across eight vertical markets including news, sports, entertainment, corporate, government and education, promises to present the "widest smart production portfolio in the video industry".

These include Ross Video's broadcast and stadium solutions, 3D graphics, AR, virtual sets and media asset management solutions, which are tailored to help broadcasters keep sports fans engaged and captivated.

For instance, the company's Graphite, all-in-one production system is now shipping with Ross Rocket Surgery Graphics packages



Ross Video is continuing its Smart Production theme at IBC2017, where a range of the company's sports solutions are on show.

for studio, news and sports applications. The Rocket Surgery packages, says Ross Video, showcase the smart production power of Graphite, which integrates Ross XPression real-time motion graphics with the Ross Carbonite processing engine.

Ross Video is also using IBC2017 to reinforce its commitment to the broadcast/IP convergence and

industry interoperability. In recent times, the company has been extensively involved with several IP standards bodies, including active participation with the likes of SMPTE, AIMS, AMWA and VSF.

David Ross, CEO of Ross Video, says: "With our acquisition of Covelo last year, Ross added over 30 Video

Networking design experts to our engineering team. The results of that acquisition are now becoming very visible with our participation in numerous IP standards bodies and our interoperability testing efforts around the world."

Head to **booth 11.C10** to find out more about Ross Video's IP initiatives.

## GatesAir pushes on with liquid-cooled transmitter efficiency

As the global digital TV transition moves forward, GatesAir is continuing to advance the possibilities of power and efficiency in UHF transmission.

This year, the company is unveiling the latest innovations behind its Maxiva ULXTE, a new product family of liquid-cooled, IP-enabled UHF TV transmitters. The ULXTE incorporates the latest LD MOS RF devices, which are responsible for the efficiency and power gains the product line offers.

According to GatesAir, it has raised overall ULXTE transmitter efficiency up to 45%, and improved transmitter power by 20%. The latter, the company adds, offers a significant operational benefit by allowing broadcasters to get more power out of a smaller transmitter, substantially improving cost per watt.

The ULXTE also integrates GatesAir's latest-generation Maxiva XTE exciter. Featuring a software-defined modulator,

the XTE includes native IP inputs and eliminates the need to retrofit transmitters with additional gear to enable network connectivity for DVB-T2, DVB-T2 Lite, DVB-T, ISDB-T, ATSC 3.0 and other standards. It provides broadcasters an out-of-the-box solution to simplify the input and output of multimedia services via a local- or wide-area IP network.

The XTE-driven modulation reduces costs and power consumption by lowering DC power requirements at the amplification stage while improving signal quality parameters.

The Maxiva ULXTE liquid transmitter joins the Maxiva UAXTE air-cooled transmitter to give broadcasters two design options. The ULXTE is available in power levels from 1.2kW to 150kW on all modulations, while the UAXTE is available in power levels from 20W to 20kW on all modulations.

GatesAir is at **booth 8.C30**.



The Maxiva ULXTE is a new product family of liquid-cooled, IP-enabled UHF TV transmitters offered by GatesAir.



## Monitor media content with R&S PRISMON

Rohde & Schwarz (R&S) is presenting R&S PRISMON, a single-device solution for automatic, convergent monitoring of broadcast and streaming media content transported in networks.

It supports the SDI, SMPTE 2022-1/2, SMPTE 2022-6, AIMS/SMPTE 2110, ASPEN, HLS and DASH transport standards, as well as media formats such as MPEG 2/4, HEVC/H.265 and TICO. Future new standards and media formats can also be added via software upgrades.

R&S PRISMON automatically detects and signals dropouts and content errors in real time, using sophisticated monitoring functions such as video freeze with white-listing and video content compare. A large

**ib** number of channels, including those in 4K/Ultra HD (UHD) quality, can be monitored in parallel with R&S PRISMON and visualised in a straightforward manner on a multi-viewer video wall.

Also on display at **booth 7.E25** is VirtuWall, a cloud-based supplementary service to R&S PRISMON from Rohde & Schwarz subsidiary, GMIT. Using a mobile app, the optional VirtuWall

service transmits monitoring data collected from geographically distributed R&S PRISMON probes via a secure connection to mobile user equipment and displays it in condensed form.

As a result, off-site technicians can "for the first time" quickly identify and assess the sources and effects of errors via remote access, eliminating the need for on-site visits to the place of installation of monitoring and multi-viewer probes.



R&S PRISMON is a single-device solution for automatic, convergent monitoring of broadcast and streaming media content transported in networks.

## Vitec Group's premium brands presenting new products

A number of brands from the Vitec Group are showcasing an extensive range of premium-branded products and services for broadcast, film and photographic professionals.

Delivering an additional 2kg of maximum payload capacity compared to the original Ace L, the new Sachtler Ace XL fluid head is recommended for digital cine-style cameras, such as the Blackmagic URSA Mini Pro, Canon C200 and C300 Mark 2, Panasonic GH5, Sony FS7, and the new Panasonic EVA1. Its professional drag, intuitive operation and illuminated spirit level make the Ace XL a versatile, professional, lightweight camera support for completely jerk-free camera movements and maximum stability, says Sachtler.

Vinten's award-winning Vantage is a compact and lightweight robotic camera head that is said to offer "unmatched" flexibility and broadcast-quality movement and control at the same price point as a traditional pan-tilt-zoom (PTZ) camera head. The Vantage enables customers to choose the camera and lens that meet their requirements, supporting a wide range of pro-video camcorders from a variety of manufacturers, including Canon and Sony, as well as both full-servo and manual lens types.

Litepanels is highlighting its next-generation Astra 3X and 6X LED lights. Building on the quality of the Astra 1 x 1 panel, the next-generation panels now feature a 50% increase in output with reduced power consumption for longer battery runtime. This means the new Astra 3X is three times brighter, while the Astra 6X is six times brighter than the original 1 x 1 version.

Both models are available in either daylight or tuneable bi-colour models, and like all Astra panels, both feature high CRI (colour rendering index) and TLCI (television lighting consistency index) for "exceptional colour reproduction".

Find out more at **booth 12.E65**.

Compared to the original Ace L, the new Sachtler Ace XL fluid head delivers an additional 2kg of maximum payload capacity.



### LDX 82 3G/HD & HDR

You only get one chance to capture the moment. With Grass Valley's LDX 82 Series Cameras, you'll be ready for anything. The LDX 82 gives you complete flexibility in all HD formats, including 1080p, and comes in four models with the ability to upgrade daily, weekly or perpetually through the camera range — so you decide the functionality you need when you need it, even HDR in 3G and HD.

And when you need a smaller form factor with the same functionality, the LDX C82 Compact Series supports advanced 1080p formats, including wide color gamut and optional HDR operation, to perfectly match images between compact and system cameras.

Learn more by visiting [grassvalley.com/cameras](http://grassvalley.com/cameras)

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## TSL Products simplifies and empowers IP transition



Visitors to IBC2017 can look forward to a new release of TSL Products' Tallyman advanced broadcast control system.

To support the industry transition to software-centric, IP-connected technology, TSL Products has updated a number of its control, audio monitoring and power management solutions to simplify SDI/IP workflows and streamline operations supporting customers during the transition to IP.

TSL Products' wide-ranging catalogue of audio monitoring solutions provide practical functionality for various broadcast applications, from critical level-metering to integrity-monitoring of surround sound for TV channels on transmission.

IBC2017 sees updates to its MPA1 Dante confidence monitoring series to now include support for AES-67 (and thereby further support for Ravenna and Hydra2 networks) — which defines the IP audio transport layer in SMPTE 2110.

TSL Products' PAM-IP audio monitoring devices, which feature twin Ethernet ports, can also now be used either in Dante or AES-67 modes, making them ideal for use

across the SDI to IP infrastructure transition, as the installation moves towards a unified SMPTE solution.

Both ranges also now feature SNMP (simple network monitoring protocol) monitoring and control, which means they can be managed remotely by TSL Products' TallyMan or other SNMP management systems for the first time. Existing users of the MPA1 can install the improved functionality as a free download.

Visitors to **booth 10.B41** can also check out FlashBoard, a new addition to the TSL Products command and control range. A screen-based information distribution and display system, FlashBoard can be integrated with Tallyman or other third-party control systems.

FlashBoard drives multiple displays, each with a "unique" combination of data, clocks and timers, on-air and cue lights, and production details. Screens are designed quickly, using the drag and drop functionality in the TallyMan virtual panel software for display in monitor walls, or distributed wirelessly to tablets.

## Lynx Technik supports 4K/UHD with 12G-SDI portfolio

Because 4K/Ultra HD (UHD) requires a system that can transfer data at a rate of 12Gbps, over a single coaxial cable or optical fibre, Lynx Technik is showcasing its 12G-SDI portfolio, which the company says is optimised for 4K/UHD broadcast applications and video processing.

Highlighting the 12G line-up is greenMachine titan, a new member of the app-based solutions from Lynx Technik. For 4K/UHD applications, titan accepts either 4x 3G-SDI (quad link) or 12G-SDI (single link) inputs. In addition, conversion between single link and quad link 12G-SDI signals is possible using greenMachine apps.

Titan also offers an optional 12G-SDI fibre I/O. Apps for greenMachine titan that support 4K/UHD include frame synchronisation, embedding/de-embedding, up/down conversion and more.

A new universal 12G-SDI reclocking distribution amplifier (model: DVD 1417) for the yellow series is suitable for SDI video up to 12G for carrying 4K/UHD video on a single cable. The DVD 1417 auto-detects an SDI input up to 12G and passes it directly to seven outputs.

The third product is a new dual-channel 12G reclocking distribution amplifier (model: DVD 1423), which accepts a single input and offers three outputs (per channel). This

compact, general-purpose, dual-channel reclocking SDI distribution amplifier is suitable for any SDI/HD-SDI video signal up to 12G for 4K/UHD applications.

These three new products, says Lynx Technik, expand its existing 12G-SDI technology platform, which includes fibre transmitters, receivers and transceivers. With its entire 12G portfolio, the company aims to help broadcasters provide end-users with a more immersive TV viewing experience.

Lynx Technik is at **booth 8.C70**.



## Pebble Beach Systems spotlights Orca

DMC, a European media gateway, recently announced the launch of a full-IP, virtualised playout platform, based around Pebble Beach Systems' Orca virtualised playout solution.

At **booth 8.B68**, Pebble Beach Systems is detailing how DMC's fully virtualised, software-defined 'private broadcast cloud' provides a "step-change" in industry innovation and enables its customers to benefit from the agility and flexibility of an all-IP world.

Orca, which runs under Pebble Beach Systems' Marina automation control system, provides users with the ability to deploy new channels in a matter of minutes, and at low cost. This makes Orca, a public cloud solution, particularly suited to pop-up, event-based channels, disaster recovery applications, and any instance where deployment agility is required, says Pebble Beach Systems.

The company is also highlighting Lighthouse, a Web-based remote management and monitoring dashboard that extends Marina's functionality to business users, operational staff and engineers, both inside and outside the broadcast facility. As Pebble Beach



Pebble Beach Systems' Orca virtualised playout solution has been chosen by DMC for its new full-IP, virtualised playout platform.

Systems' product portfolio expands into the virtual world, Lighthouse offers a series of interfaces which deliver configuration and deployment functionality for Orca virtual channels.

Using the new design and deployment tools, Lighthouse users can quickly and easily design, edit, launch and decommission virtual IP channels on-the-fly.

Developed in partnership with Blue Lucy, Beluga is a new workflow engine content management and video processing solution that integrates closely with the Marina automation system. It offers targeted file delivery, content preparation, and integrated QC workflows without the need to deploy an enterprise MAM solution.



### White Paper @ [www.apb-news.com](http://www.apb-news.com)

#### ❖ Caught on tape, now keep it secure

What does LTO tape and LTFs offer the video surveillance industry which is facing demands for increased need for storage?

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This white paper from IHS Markit discusses the benefits and best practices of LTO technology in the digital video surveillance (DVS) industry, drawing attention to a number of key market trends.



2017

## Calendar of Events

### SEPTEMBER

September 15 - 19  
**IBC2017**  
RAI Amsterdam,  
The Netherlands  
[www.ibc.org](http://www.ibc.org)

### OCTOBER

October 10 - 12  
**APSCC 2017**  
Intercontinental Tokyo Bay,  
Japan  
[www.apsc.or.kr/sub3.asp](http://www.apsc.or.kr/sub3.asp)

October 10 - 12  
**IEEE BROADCAST SYMPOSIUM (BTS)**  
Keybridge Marriott Arlington,  
VA, USA  
[www.bts.ieee.org/](http://www.bts.ieee.org/)

October 12 - 14  
**BROADCAST INDIA 2017**  
Bombay Exhibition  
Centre Goregaon,  
Mumbai, India  
[www.broadcastindia.show.com](http://www.broadcastindia.show.com)

October 25 - 27  
**BROADCAST INDONESIA 2017**  
The Jakarta International  
Expo, Kemayoran, Indonesia  
[www.broadcast-indonesia.com/](http://www.broadcast-indonesia.com/)

### NOVEMBER

November 6 - 9  
**CASBAA CONVENTION 2017**  
Macau Studio City  
[www.casbaa.com](http://www.casbaa.com)

November 15 - 17  
**INTER BEE 2017**  
Makuhari Messe, Tokyo,  
Japan  
[www.inter-bee.com](http://www.inter-bee.com)

November 30 - December 1  
**IABM ANNUAL INTERNATIONAL BUSINESS CONFERENCE & AWARDS 2017**  
Radisson Blu Edwardian  
Hotel, Heathrow, London, UK  
[www.theiabm.org](http://www.theiabm.org)

### 2018

#### JANUARY

January 14 - 15  
**CABSAT 2018**  
Dubai World Trade Center  
[www.cabsat.com](http://www.cabsat.com)

#### FEBRUARY

February 27 - March 1  
**BVE 2018**  
Excel London, UK  
[www.bvexpo.com](http://www.bvexpo.com)

#### MARCH

March 5 - 8  
**ABU DIGITAL BROADCASTING SYMPOSIUM 2018**  
Malaysia  
[www.abu.org.my](http://www.abu.org.my)

#### APRIL

April 5 - 7  
**VIBA (VIETNAM INT'L BROADCAST & AC SHOW 2018)**  
Hanoi International Exhibition  
Center, Vietnam  
[www.vibashow.com](http://www.vibashow.com)

April 7 - 12  
**NAB SHOW 2018**  
Las Vegas, Nevada, USA  
[www.nabshow.com](http://www.nabshow.com)

#### MAY

May 15 - 18  
**KOBA 2018**  
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Seoul, South Korea  
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# APB CREATION

## Calrec Summa supports FIM coverage



A Calrec Summa console is supporting audio coverage in UM21, a new 4K/Ultra HD (UHD) OB vehicle by Spanish

production company VAV Compañía de Producciones. Dorna Sports, the official rights holder for the Fédération Internationale de Motocyclisme (FIM) World Championship Grand Prix of motorcycle road racing, is using UM 21 for its HD coverage of the FIM CEV Moto2 European championship series, currently under way in Europe. According to Israel Perez, CTO of VAV, Summa features that are especially valuable for motorcycle race coverage include its auto-fader functionality, and its large number of faders and layers, with dual inputs for every channel.

## Ikegami, SAM announce reseller partnership

Ikegami and Snell Advanced Media (SAM) have agreed on a reseller partnership that will see the availability of selected SAM solutions with the Ikegami UHK-430 4K/Ultra HD (UHD) camera system. The agreement covers the Americas, APAC, the CIS, EMEA and most Asian countries, say the companies, and will include SAM's 12G-SDI, IP connectivity and routing products. SAM's range of production switchers will also be available from Ikegami, including the Kahuna enterprise-level series and Kula 1-3M/E range.

**Next Month @ Creation**  
**Colour Correction Systems**

## PANELLISTS



**Dr Ahmad Zaki Mohd Salleh**  
Group GM, Engineering  
Media Prima



**Phan Tien Dung**  
CTO  
Vietnam Digital Television



**Bernard Anthony**  
CEO  
Cambodian Broadcasting  
Services

# Virtual broadcast sets bring new possibilities

In the increasingly challenging quest to win viewer ratings, creativity and cost-efficiency are arguably two key attributes that will provide broadcasters with a competitive advantage. Virtual broadcast sets, while a relatively new concept, may well allow broadcasters to unleash their creativity and find more cost-effective ways of creating content. **Shawn Liew** reports.

# W

hen German public broadcaster Norddeutscher Rundfunk, or Northern German Broadcasting (NDR), decided that it needed to work with larger images that can better appeal to viewers and get them immediately involved in the topic, a key decision was made to convert its TV Studio 1 to a virtual production environment.

Because it is difficult to show large background images with different shots and perspectives, a large green box was an obvious solution, according to Matthias Rach, head of production of NDR radio and TV. "We then considered what technology we would need, and very quickly arrived at a virtual approach," he adds.

The decision was also made to deploy camera robotics and a sensor system from Shotoku, alongside virtual technology from Avid. An essential difference between a virtual studio and a conventional green screen, the latter describes, is the camera tracking, which makes it possible to combine camera motions exactly with a graphics computer. This allows the virtually generated studio set to reproduce all of the camera motions and regardless of whether zooms, pans or tilting of the camera are involved, the graphics processor obtains position data that is as exact as possible, so that the graphics segment can be calculated precisely.

In NDR's new virtual studio, there are four Sony HDC-2400 studio cameras, each with three 2/3-inch CCDs (charged-coupled device), and equipped with Fujinon's DigiPower box lenses, 6.5 to 180mm, 1:1.5. A special feature of the virtual studio is that the cameras are mounted on mobile Vinten pedestals which, however, are locked in place. The camera supports are not moved, and the position of the cameras is changed only with regard to height, panning, tilt and zoom.

In this instance, the cameras and the graphics system must work together precisely, and the camera position data must be transmitted accurately. Norbert Sieben,

video engineer at NDR, explains: "If the values no longer correspond, this can be seen in the images. The background then begins to float behind the background."

During the system installation, a base calibration was carried out, where the cameras are aligned with fixed measured points, in approximately 10 different positions, to determine the exact location of the cameras. The robotics sensor from Shotoku captured the position data, which are then transmitted to the Avid system. Four Orad (an Avid company) HDVG+ render engines combine the real and virtual image content, with each engine responsible for one of the four cameras.

A tracking system processes the position data for the respective camera, transmitted by the Shotoku system via a network. For this, a render engine calculates the image segment and combines the real foreground with the virtual background. For this to succeed, a key or mask is also required, which NDR created with by using an Infuse keyer integrated into the HDVG+ system. "The keyer must always be exactly right," says Sieben. "For example, shading can be seen here on the image, if the key is not set perfectly."

The diffused green lighting of the studio background also presents a challenge, as he explains: "Due to the comparatively small distances from the green screen, a relatively large amount of green light from the background is reflected on the news desk and presenters."

Painting the extensive walls of the studio set green is "far from sufficient" to achieve a clean chroma key, NDR notes, adding that uniform illumination of the entire area is necessary — this is because the mask is generated for a particular colour tone at a defined intensity. Maria Lindinger, lighting engineer, NDR, adds: "We illuminate the studio background with approximately 20 area lamps, each with three compartments."

For background or studio graphics, they are fed in via the Avid Maestro Media Engine. The complete broadcast workflow is transmitted from the Annova OpenMedia editing system, via specially configured software interface, to the Maestro graphics system.

Editors develop the entire broadcast workflow in the OpenMedia system where, by means of an Avid plug-in, they can insert the broadcast graphics. These are then transmitted to the Maestro system, together with their exact position data.

The Maestro software runs on a control computer, which controls two other Avid HDVG2 graphics platforms. Each of these has two playout channels, creating a total of four channels. Jannis Redmer, graphics operator, NDR, explains: "I have two insert channels and two full-screen channels, which I can record independently. The background graphics and text inserts for the studio presentations are combined in the HDVG+ systems."

While acknowledging that virtual production requires a higher level of concentration and better communication, NDR also lauds the operational possibilities it affords, including the integration of large images, and the introduction of a duo-presenter format. This, NDR elaborates, allows different perspectives between presenters on a topic to be divided.

Rach, head of production at NDR, summarises: "With the large-format images, we are also taking into account changed viewing habits that have developed due to tablets and smartphones. One objective was to improve the visibility of the broadcast on these mobile devices."

And while the jury is still out on final viewer ratings, Rach optimistically concludes: "The trend is that, in comparison to last year, we have an increase in audience share of approximately 3%."

As viewer expectations increase, and system costs and complexities decrease, media content providers, regardless of





German broadcaster NDR's new virtual studio, powered by Avid's virtual technology, allows a duo-presenter format to be introduced.



Ross Video believes virtual sets and augmented reality can lower operational cost, and bring more operational efficiencies."

size or type, will begin to embrace virtual sets and augmented reality (AR), predicts Andrew Tan, director of sales, APAC, Ross Video.

He tells APB: "Virtual sets can actually lower operational costs, depending on the application. For instance, 'blended' environments combine the best of traditional physical design and virtual design to eliminate the need for video walls and on-set monitors.

"Not only can virtual sets be deployed at substantially less cost than traditional physical sets but multiple sets can be used in the same space. Virtual solutions are also enable to be operated and deployed in small spaces that require

substantially less facility costs, and use less storage space due to needing fewer physical set pieces."

If you are visiting IBC2017 this month, Tan invites you to visit **booth 11.C10** to check out solutions such as the UX software application. Providing integration with tracking systems, keying products and real-time 3D rendering engines such as Ross Video's XPression and Frontier, UX comes installed on a touch-screen PC for virtual set camera calibration, scene manipulation, media replacement, event triggering, animation control, robotic camera move control, and more.

XPression is a motion graph-

ics platform Ross Video offers in sports studios, broadcast and venue control rooms, as well as OB vans and other mobile environments. "This advanced platform produces complex multi-layered 3D graphics for both SDI and IP infrastructures, and offers a wide range of capabilities such as virtual set, AR, clip server and transcoder with various workflow tools and software applications," Tan describes.

The same creation and rendering platform is also the basis for Ross Video's Tessera system, which is used to deliver graphics to any number of displays of various sizes in sports venues; and Ross Video's

Trackless Studio system, which provides a cost-effective virtual set using a stationary camera that works effectively in small spaces.

While XPression is "very well suited" for virtual sets, some studio facilities desire even more realistic backgrounds, Tan points out. Thus, Ross Video designed XPression, in tandem with Frontier — based on a video game engine technology optimised by Ross Video — to work in virtual studio environments that renders hyper-realistic imagery. "Even the most complex graphical elements, from rain drops and fire to live shadows, lens flares and dynamic highlights, can be created quickly,

easily and with unprecedented realism," Tan says.

What truly makes virtual sets and AR an attractive proposition, he adds, is the ability to offer more visually arresting looks for viewers, on top of more variety. XPression, for instance, integrates with dynamic data sources to deliver up-to-the-second, on-screen updates.

Using the same space, multiple virtual sets can be designed by combining physical and virtual elements, and be quickly changed for different shows. "Systems such as Tessera, XPression and Trackless Studio are utilised in stadiums and other venues to embellish the whole fan experience at the event," Tan highlights.

And while he concedes that using virtual solutions require changes in workflows, skill sets and domain knowledge, there is also a monetisation opportunity to be explored. "Virtual solutions can provide new income sources through sponsorship of specific virtual elements," Tan explains. "Advertising and sponsorships can be applied in the same manner for a variety of programming such as weather, traffic, sports, talk and variety on an annual, daily, or show-by-show basis." **APB**

## Vitec Group outfits Formosa TV's new studios

Formosa TV, a Taiwanese free-to-air (FTA) broadcaster, operates four TV channels in New Taipei City, Taiwan, and has been a user of Vitec Group's products for several years.

To equip new studios and a newsroom, Formosa TV decided to install the Autoscript E.P.I.C. 19-inch prompter from Autoscript, and Vinten's Vector 750 and Vision 250 pan-and-tilt heads, alongside the Quartz One, Quattro-SL and Osprey Elite pedestals from Vinten.

Combining a LED-prompting screen with

an integrated 19-inch HD-SDI on-air monitor, the lightweight E.P.I.C. prompter, when used as a combined system, utilises less power than other prompting solutions, according to Vitec Group. Furthermore, camera operators are able to perform a full camera tilt without restrictions, as the teleprompter eliminates the need for an extra mounting bracket.

For Vinten's support systems, Formosa TV found the Vinten Quattro-SL pedestal particularly effective as it easily tracks in confined spaces, and installation was easy

due to its compact construction and design, said Formosa TV. The Quattro-SL can also be paired with the Vectro 750 pan-and-tilt head — which provides a counterbalance mechanism and TF drag system — to allow operators to make adjustments for better control and more consistent movement.

Tsai Shen-Tien, chief of photography for Formosa TV, concluded: "The easy operation, precise tuning, local service, quality and reliability — these products are the complete package. Our technicians and camera



Taiwanese broadcaster Formosa TV has equipped new studios and a newsroom with Vinten support solutions and Autoscript teleprompters.

operators trust these brands so we were keen to keep using Vinten and Autoscript products when we built the new newsroom and studios."

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# Catering VR to audiences key to long-term success

Audiences have indicated an initial interest in virtual reality (VR); the challenge, however, is to sustain this interest and encourage mass adoption in the long term, recent research from the BBC has concluded.

As part of the research, the BBC recruited teens and adults across the UK who were interested in VR but had little experience with it. Each was given a mid-range mobile VR headset for three months, where in the first few weeks, they were asked to play with the hardware every day to discover VR experiences. For the following 12

weeks, the participants were left with the hardware, as the BBC observed how VR would fit into their daily lives in the long term.

Broadly, the participants were left "enthralled and delighted", reported the BBC, who observed that their initial and fairly low expectations of VR were "far outstripped" in terms of the quality of experience and the very nature of being immersed in VR.

However, this in itself presents a nuanced marketing challenge, pointed out Tim Fiennes, senior market analyst, audiences, BBC. "The industry has difficulty communicating what VR experiences are actually like," he explained. "Given the wide variety of technology which can determine the nature and quality of experience, setting the right level of expectation for audiences such that they don't come away underwhelmed is tricky."

Content, perhaps not surprisingly, will play a key role in building the VR experience. As Fiennes pointed out, if content can just as easily be consumed on a TV screen, how do you make the viewer take the effort of watching it immersively?

Adrenaline-fuelled VR experiences may be a good starting point, although the novelty can dissipate fast, the BBC cautioned. Thus, content with a clear narrative that thinks about the audiences' experience is crucial, as Fiennes described: "Lead the audience on a journey is crucial — experiences without a narrative or goal tended to fall flat. Experiences with good story-telling or clear objectives worked well."

The risk of cognitive overload also needs to be recognised, he added. "Audiences need time to process and understand what is happening around them before being able to follow a narrative. When and where to draw their attention is also fundamentally important."

For trusted brands that take into account the different usage occasions, the different types of content audiences need and the goal of expanding VR beyond novelty experiences, the technology provides opportunities for intelligent content curation, the BBC suggested.

In the interim, sub-par VR experiences flooding the market threatens to turn audiences off



PHOTO CREDIT: ISTOCK BY GETTY IMAGES

While audiences have indicated an initial interest for VR, more needs to be done to sustain interest and encourage mass adoption in the long term, a recent BBC study has found.

the idea of VR altogether. Much of the VR content currently available, the BBC found, is not adding any value over and above consuming the same content on a normal TV screen.

Fiennes continued: "For VR to be successful, it needs simple, intuitive and consistent interfaces, better curation and content discovery, and a higher supply of quality content which is 'worth the effort'."

Simplify and create consistency between the currently fragmented hardware and software experiences. This will enable a more frictionless user experience for all audiences, he said, adding:

"Consistency and open standards will also provide greater certainty for content creators to produce a breadth of content which is not limited to a small set of costly closed devices."

Equally important, perhaps, is placing the audience, and not the technology, at the heart of content creators' thinking. This, the BBC believes, will provide a better understanding of audience perceptions, needs, usage occasions and how best to curate. "In turn, this will enable us to produce more relevant, impactful and memorable content that fits into real people's lives," Fiennes concluded.



## Calrec teams up with Net Insight to enhance remote production

Calrec Audio has entered into a strategic partnership with Net Insight to simplify the challenges broadcasters are facing in deploying remote live productions. Under the agreement, Net Insight's Nimbra platform will be integrated with Calrec's RP1 Remote Production unit to provide connectivity, transport and control of audio mixes from any location.

Dave Letson, vice-president of sales at Calrec, said: "Remote broadcasting using Calrec's RP1 and Net Insight's Nimbra means

fewer resources are needed on-site, and controlling audio from a remote console saves money on set-up time, crew, logistics and equipment. Production can be up and running quickly, thanks to the plug-and-play union of just two boxes, and operation does not require high-level technical expertise, providing audio processing from any venue to any production base."

The RP1 is a broadcast mixing system packed in a 2RU rack-mount box to provide a variety of interface formats, including SDI and AES67,

which can be transported alongside control data across the Nimbra platform. This integration, according to the companies, leads to workflow efficiency advantages for Net Insight customers in the field, and will be offered as a turnkey solution for new customers.

The two companies have previously collaborated in optimising Calrec's Hydra2 audio and control protocols using the Nimbra platform to enable connectivity on-site.

Fredrik Tumegård, CEO of Net Insight, concluded: "Most of the



Calrec Audio has partnered Net Insight to integrate the latter's Nimbra platform into its RP1 broadcast mixing system.

focus on remote production in the industry to date has been on the video side, but it is audio that is much more complicated to manage. Setting up different interfaces on-site is time-consuming, takes greater resource and means there

are more points in the chain where faults can occur.

"The integration of Net Insight's Nimbra portfolio with Calrec's RP1 takes away all this pain. This is another key step to unlocking the full potential of remote production."



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# SkyPanel lights up RTL City studios

As part of RTL Group, Luxembourg-based Broadcasting Centre Europe (BCE) provides media services, systems integration and software development for the media market, particularly in Europe.

In April this year, BCE inaugurated its new headquarters in RTL City, which comes with three state-of-the-art studios lighted up by ARRI LED fixtures.

Studio 1, with a grid construction, is a multifunctional production studio, mainly used for magazine programming with live audiences. In this studio, ARRI deployed the first "real" Cyclorama application of its SkyPanels with the SkyBender. The SkyBender is an asymmetrical reflector that produces a uniform intensity light field over the length of any surface, transforming the beam by sliding into the front of the fixture. This accessory can be deployed for lighting a green screen, cyclorama, translight or backdrop while creating colour wall washes.

The second studio, or the news studio, also utilises a grid construction and contains three sets for live shows, while the TV or virtual studio is the third studio at the new BCE headquarters.

PHOTO CREDIT: RTL GROUP



Following the move to its new headquarters in RTL City, Broadcasting Centre Europe (BCE) has installed ARRI's SkyPanel LED soft lights across its three new studios housed in the new complex.

but the light output is good enough to handle most situations in the studios, even at greater distances. Another big advantage with LEDs is the possibility to adjust colour temperatures via remote. With respect to these issues, LED lighting was mandatory, and we wanted to use them in all the studios."

Combining a technical infrastructure to support the production of more than 30 TV channels and various radio stations, BCE also decided to minimise its carbon footprint by equipping the three new studios with LED lighting. This, according to BCE, reduces the cooling infrastructure and keep the background noise to a minimum during shows.

Andreas Fleuter, manager special projects at BCE, added: "With LED fixtures, heat dissipation is low

As to why ARRI lights were chosen, he explained that they provided BCE with a large colour spectrum that covered the company's needs for various types of productions. "Standard production nowadays prefers daylight colour temperature," Fleuter said. "However, the flexible colour control we have for atmospheric lights, as well as show lights, is impressive. With ARRI lights, it is even possible to use a green key on a white curtain background."

## RMG runs AoIP throughout its radio and TV facilities

Headquartered in Moscow, media conglomerate Russian Media Group (RMG) runs five radio stations and two TV stations, including RUTV.

For the past six years, RUTV has been adopting Livewire+ AES67 audio-over-IP (AoIP) infrastructure within its TV facility, having successfully utilised Livewire+ for its radio stations.

At the heart of RUTV's Livewire+ AES67 AoIP infrastructure is the Axia xNode console, which is capable of connecting the TV studio

to the master control mixer via a single CAT 5 network cable to deliver up to eight audio pairs. Studio microphones, IFB (interruptible foldback) studio talk back and cue can also be managed using a single network cable.

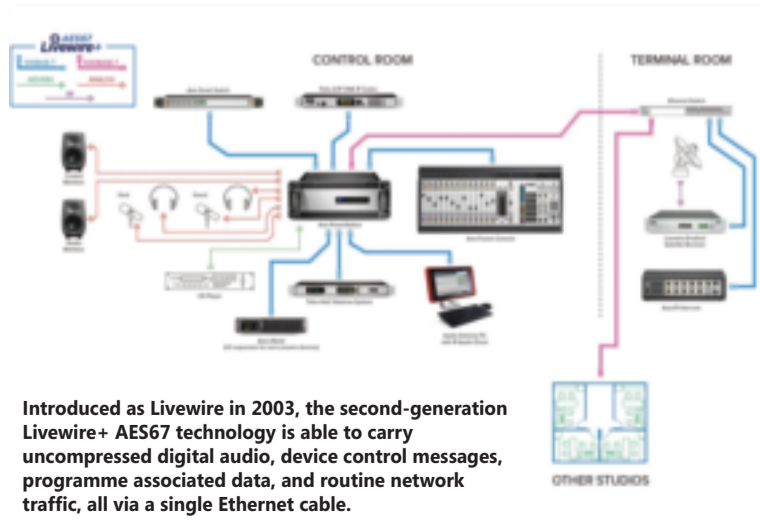
In addition, RUTV has installed an SDI de-embedder/re-embedder, which allows audio from a new clip server to be controlled on the mixer, as well as a six-line studio telephone system, talent microphones and feeds from outside broadcast (OB) trucks.

Livewire+ AES67 is the second-generation of Livewire, a technology developed by the Telos Alliance, to convey audio over switched Ethernet. Prior to the implementation of Livewire+ AES67 in the TV facility, RMG has already been using Livewire in its radio stations for over a decade.

Andrey Mamontov, CTO of RMG, explained: "Usage of Livewire offers great flexibility in management of audio signal delivery for any programme. In addition, it greatly speeds up audio workflow for the creative team."

The installation RMG's radio stations comprises Axia AoIP consoles, Telos phone systems and digital hybrids, and Axia xNodes, which are all used as the system core, as well as to extend the Livewire infrastructure to AES (Audio Engineering Society) digital audio and analogue audio.

Livewire is designed to manage general purpose interface (GPI) information; together with the physical GPIs provided on Axia xNodes and Axia consoles, it extends the core infrastructure to support GPI on equipment that is not equipped with Livewire+ AES67 AoIP natively.



Introduced as Livewire in 2003, the second-generation Livewire+ AES67 technology is able to carry uncompressed digital audio, device control messages, programme associated data, and routine network traffic, all via a single Ethernet cable.

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# King of the Hammers races across the terrain in HDR

Insight TV, a producer and broadcaster of adventure travel and extreme sports genres in “true, unscripted 4K/Ultra HD (UHD) high dynamic range (HDR)”, has launched a new high-speed reality show. Named *King of the Hammers*, the new programme is available on Insight TV channels and Insight.TV, the company’s 4K/UHD subscription video-on-demand (SVoD) platform.

Produced in partnership with UK factual independent production company LSPTV, *King of the Hammers* is the first programme that Insight TV has shot in HDR, as it aims to provide its audiences with an enhanced viewing experience.

Rian Bester, CEO of Insight TV, told APB: “HDR is more than just dynamic range. With HDR, bit depth has increased from 8-bit colour to 10-bit colour, signifi-

cantly increasing the picture colour palette and thereby the picture quality.

“For instance, when an HDR picture is placed next to an SDR picture, regardless if that’s on a mobile phone or a 55-inch TV screen, there’s no doubt that there’s a difference and consumers will clearly see that.”

While the increase in picture depth is key, Bester pointed out two additional elements — wide colour gamut (WCG) and high frame rate (HFR) — that are also critical in an HDR ecosystem. He elaborated: “WCG allows more colours to be displayed. In an HDR picture, this can particularly be noticed in the reds, greens and yellows, which display much more vivid colour variations. As for HFR, it provides smoother viewing during fast-motion scenes.

“Hence, when these elements are all combined together in an action-packed programme like *King of the Hammers* in HDR, the picture really pops up and becomes much more realistic and lifelike for the viewers.”

The eight-episode reality show goes behind-the-scenes to follow the 485 drivers who race across the desert and take part in rock crawling, an extreme form of off-road driving over harsh terrain. Filmed against backdrops at eight different US-based races, from the Blue Mountains of Kentucky to the Californian desert, conditions for filming in the hot and dusty terrain were often challenging.

Especially during production, Bester highlighted that a “tiny flaw” might be amplified in the picture, as most of the shots were recorded in raw format. He explained: “Prob-



Produced by Insight TV and LSPTV, *King of the Hammers* is a high-speed reality show that travels across the terrain in the US, and is the first programme that Insight TV has shot in HDR.

lems can arise from the camera — even a speck of dust on the lens during production. Fixing these issues during the production stage becomes more complex, and takes a lot of time and effort.”

While most of the shots were filmed in raw format, the team also shot lower than 10-bit for occasional editorial action shots.

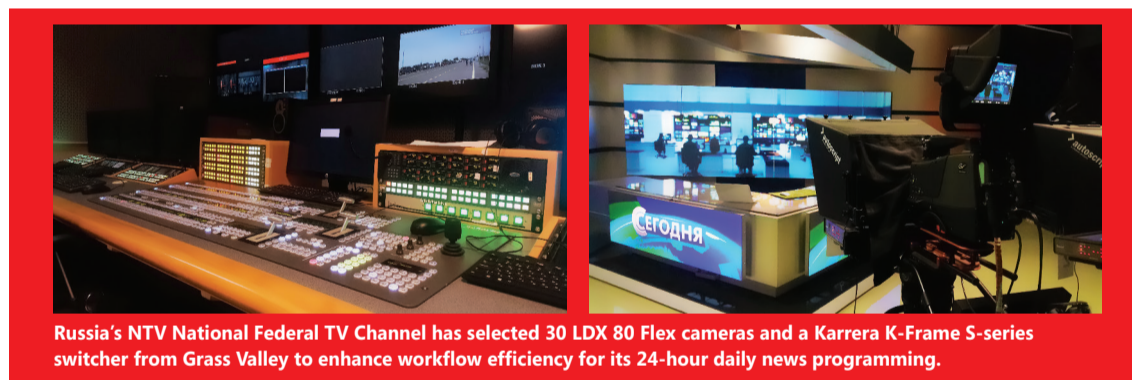
“During post production, these editorial action shots must be placed strategically in the edit to blend with the native 4K/UHD HDR as much as possible,” Bester concluded. “It’s also important to strategically place the use of light and dark shots because the human eye tends to adapt quickly to what it sees.”

## Russia’s NTV runs 24-hour news on Grass Valley’s solutions

With the aim of enhancing the quality and efficiency of its 24-hour daily news programming, Russia’s NTV National Federal TV Channel purchased 30 Grass Valley LDX 80 Flex cameras and a Karrera K-Frame S-series 3M/E video production centre switcher. This purchase, according to Grass Valley, a Belden Brand, is part of NTV’s plan for growing the network, and will facilitate NTV’s move from SD to HD production.

Andrey Drukker, CTO from NTV National Federal TV Channel, added: “As soon as we saw the power and functionality of the Grass Valley solutions, we knew that it would be a smart investment for our future. Productions are very complex, requiring the ability to work with multiple formats and manage a variety of content streams.”

The GV installation has enabled NTV to reuse its existing



Russia’s NTV National Federal TV Channel has selected 30 LDX 80 Flex cameras and a Karrera K-Frame S-series switcher from Grass Valley to enhance workflow efficiency for its 24-hour daily news programming.

triaux infrastructure and integrate a full HD production workflow. For instance, the deployment of the LDX 80 Flex cameras provides NTV with single-format 1080i or 720p video acquisition, enabling the camera operator to capture “stunning imagery combined with high-sensitivity and low-noise performance”.

The 3M/E Karrera K-Frame S-series switcher, meanwhile, com-

plements NTV’s existing 2M/E Karrera K-Frame switcher to provides NTV operators with simplified control of complex productions, with multi-format support including 1080p and 4K/Ultra HD (UHD).

Jan-Pieter van Welsem, VP Sales, EMEA, Grass Valley, concluded: “NTV is a long-time customer of Grass Valley, and we are very happy NTV selected Grass Valley solutions once again for its studio upgrades.

The 30 LDX cameras with the triax infrastructure and low-noise filters, along with the Karrera K-Frame S-series switchers, will enable NTV to greatly improve quality, creativity and operational efficiency.”

In a separate development, Canon has decided to integrate Grass Valley’s Mync, a personal content management tool, into the EOS 6D Mark II DSLR camera.

Mync is available in two differ-

ent levels: Mync Basic is a downloadable application designed to provide format support for media playback and content organisation; and Mync Standard, which adds more functionality to the basic version with storyboard video editing and more advanced content management features designed for digital photographers, Web content creators and novice video editors.

The Canon EOS 6D Mark II will be equipped with Mync Standard, making it easier for users to work with and share video in a “simple but powerful” environment. Katsushi Takeuchi, VP and general manager, EDIUS, Grass Valley, concluded: “Since its introduction in March [this year], Mync has proven very popular in the market by addressing the need for a content management solution that works with all formats and provides a way to easily share.”



Integrated with NDI functionality, the NewTek NDI PTZ camera is able to deliver video to every NDI-enabled video application across a standard network.

## NewTek develops new IP PTZ camera

NewTek has introduced what it calls the “world’s first” PTZ (pan-tilt-zoom) camera, which is integrated with the company’s Network Device Interface (NDI) technology.

This allows the IP video camera to transmit full 3G 1080p 60 video directly to NDI-compatible products across a standard network, and will support a growing industry trend.

Dr Andrew Cross, president and CTO for NewTek, explained: “There have been a few inflection points in the broadcast industry that have delivered profound benefits, such as the transition to non-linear edit-

ing from cutting tape. The move to IP-based production is one of those unique moments in our industry.

“The transition is happening fast because it is being driven by customer demand. Producers recognise this technology simplifies their work while expanding their opportunity to create more and better shows. With the availability of NDI cameras from NewTek, and others that are sure to follow, IP-based production is truly here.”

Once connected to a network, the NewTek NDI PTZ camera delivers video and audio, as well as tally, PTZ control and power, all over a

single Ethernet cable. It also becomes visible to all compatible systems running the latest version of NDI, such as LiveStream Studio, Telestream Wirecast and NewTek TriCaster.

One media production company which has already added the NewTek NDI PTZ cameras into its inventory is US-based Waskul Entertainment. “The NewTek NDI PTZ cameras are a great addition to our IP video workflow. They can be set anywhere in the environment, and through the magic of NDI, they immediately appear on our network, allowing us to access and control remotely,” said Steve Waskul, CEO of Waskul Entertainment.



## Bexel and explore.org thrill nature fans

Bexel, an NEP Broadcast Services Company, is working with philanthropic media organisation explore.org to stream "never-before-seen" live video and audio from some of the world's most remote and exotic locations.

After a successful first deployment in northern Manitoba, Canada, where Bexel's specialty low-light-optimised camera system captured "stunning footage" of the *aurora borealis* at night, Bexel has deployed custom-designed systems at nine other explore.org sites, with another 25 planned for this year.

Designed to be controlled remotely from anywhere in the world, Bexel's camera systems give explore.org's volunteer remote operators the tools they need to provide viewers with an unprecedented glimpse into the natural world, said Bexel.

Given the unique circumstances at each explore.org site, Bexel's custom HD and 4K/Ultra HD (UHD) camera systems ensure that "riveting, clear footage" will be available in even the most extreme conditions, the company added.

# AJA simplifies church's live broadcasts across 16 campuses

Founded in 2001, Church of the Highlands has 16 campuses across Alabama, USA. With an average attendance of 40,000 members for its Sunday service, the church also records an additional 10,000 members tuning in live online.

To reach out to members both in-person and online, Church of the Highlands leverages a robust video workflow to broadcast live worships and enhances live presentations at its main broadcast campus while recording all services at its other campuses throughout the state.

The church's weekend service is shot on three Sony HDC-2400 studio cameras on a tripod, with one on a jib positioned house left, and a Canon XF205 camera placed on a 15ft dolly track positioned house right.

In addition to the 55-inch touchscreen monitor that runs the presentation content on stage, a confidence monitor is set up at the front of the stage for the speaker to refer to notes or lyrics. Each side of the stage is also equipped with

a 24ft screen with rear projection, and a LED wall across the back of the stage to provide scenic backgrounds and video playbacks.

The church's technology infrastructure also comprises a range of AJA equipment, including Ki Pro, Ki Pro Ultra and Ki Pro Rack digital video recorders, FS1 and FS2 framesyncs and converters, KUMO routers, FiDO fibre converters, mini-converters and ROI (region-of-interest) scan converters.

Justin Firesheets, production director for Church of the Highlands, has deployed between 30 and 35 Ki Pro Racks and Ki Pro Ultra recorders system-wide as the primary devices for recording all services, giving each campus the option to playback a pre-recorded service.

The main broadcast campus is equipped with two Ki Pro Ultras



Besides serving members in-person during its weekly Sunday service, Church of the Highlands also serves some of its 10,000 members online, with the support of AJA Video Systems' solutions.

to capture the programme feed, and ISO capture different camera shots and graphics, which are then recorded to six Ki Pro Racks 1RU rack-mounted recorders.

Furthermore, Firesheets has also employed two FS1 and one FS2 to embed multiple channels of audio from the broadcast campus.

Firesheets explained: "At the main campus, we have five services every Sunday plus smaller events throughout the week, and all of those are captured on some combination of Ki Pro Rack/Ultra units. The FS products are really great

for handling signal conversion when we have to manipulate frame rate or format."

Additionally, he has installed multiple KUMO SDI routers to route feeds from different venues to broadcast online and to other campuses, alongside FiDO fibre converters for long cable runs, and the

ROI scan converters to scale output from computers into its graphics systems, as well as dozens of mini-converters to manage signal conversion from SDI to HDMI and vice versa.

Firesheets concluded: "We've always been impressed with the quality, durability and flexibility of AJA gear, which is why we use so much of it. It's easy to use, which is crucial for a live environment. Everyone from staff to volunteers can manage the AJA gear, and we typically don't have to worry about any failure points."

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# APB MANAGEMENT



## Videohouse picks Adder's KVM solutions

Videohouse and Crosspoint has entered a multi-year framework agreement for the supply of Adder Technology's keyboard, video and mouse (KVM) solutions. The deal enables Crosspoint, a distributor for the broadcast and professional A/V industries, to supply the complete range of Adder's KVM products. This includes the AdderLink Infinity, AdderView DDX and the AdderLink XDIP, among others. Videohouse, a provider of creative and technical services covering the entire broadcast production process, has used Adder solutions during the broadcast of global events, including the Eurovision Song Contest.

## Go with the StreamFlow



Telestream has introduced ScreenFlow 7.0, the latest version of the company's video editing and screen

recording software for Macs. ScreenFlow 7.0 adds a variety of new features, including a built-in screen recorder, and the ability to capture live video from a camera. Users can also export videos by simply choosing from higher quality or quicker auto-export options, where StreamFlow 7.0 will automatically pick the best settings for any given project.

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Nielsen

# Digital age calls for approach to con

PHOTO CREDIT: ISTOCK, GETTY IMAGES



**Lock it in: As more and more content is being consumed over multiple devices and networks, are broadcasters and pay-TV operators adequately protecting their content against cyberattacks and illegal distribution?**

suite, a secure source of return path data from individual client devices can be enabled.

This, Oetegenn explains, provides a detailed view of live and on-demand consumption, as well as subscriber/device interactions, for both linear and adaptive bitrate services. When combined with the Verspective server-side data collection — video-on-demand (VoD) servers, content delivery networks (CDNs), as well as security and content management solutions — operators gain access to a deep layer of viewer insights that help reduce subscriber churn and create new revenue streams.

This is important, Oetegenn suggests, because protecting and preserving the security of the personal data of subscribers is increasingly viewed as the bare minimum expected of video service providers.

To win the fight against digital piracy, pay-TV operators providing premium content need to address three key technical requirements, Viaccess-Orca's Berkovich proposes. Begin by selecting "robust" conditional access system (CAS) and digital rights management (DRM) solutions. Pay-TV operators, he notes, have moved on from the time when content is protected by the selection and deployment of four or five card-based solutions in the market.

Berkovich continues: "Today, in a more complex media ecosystem with a greater number and variety of technical requirements, the scope of the CAS options now available includes not only smart card-based systems, but also cardless solutions that allow operators to take a more flexible approach in addressing market demand.

"In addition to providing live content, pay-TV operators today typically offer a wide range of services, including VoD, catch-up TV and start-over TV."

Thus, on top of implementing CAS for live content, operators must also ensure their DRM systems are capable of addressing multiple delivery mechanisms, Viaccess-Orca recommends.

However, deploying services based on the most reliable and complete content protection solutions does not free operators completely from the threats of fraud and piracy, Berkovich cautions. Particularly, the illegal distribution of premium content over the Internet presents a much more complex challenge. "Sports and Hollywood series are two types of content that pirates cherish most, and the audiences of illegal streams number in the

Digital media assets are the lifeblood of broadcasters and pay-TV operators, particularly as multi-screen, multi-device viewing becomes more pervasive. How can operators prevent these key assets from being compromised by cyberattacks and digital piracy?

**Shawn Liew** finds some answers.

**T**he most recent cyberattack on HBO perhaps serves as a sobering reminder to the broadcast and media industry: the threat possessed by digital intrusions and attacks is very real, and possesses the unwelcomed potential of escalating into truly crippling proportions.

As premium video content continues to register high demand, digital piracy is on the rise, says Leonid Berkovich, VP marketing, products and solutions, Viaccess-Orca. "From high-profile sports events to the latest episodes of popular sci-fi or fantasy epics, content is being illegally accessed by a troubling number of viewers," he tells APB. "In some cases, more than four times as many people watch illegally through direct downloads and pirate streaming than watch legally live or via catch-up TV."

In the most recent HBO incident, for instance, the network has confirmed that 1.5TB of data were stolen, including a *Games of Thrones* script, which was subsequently leaked online.

And with more content being consumed over a myriad of connected devices, this exposes a number of new threat surfaces for video operators that can lead to business or regulatory risk, Steve Oetegenn, president of Verimatrix, points out. "Thus, video service operators need



**Steve Oetegenn, president, Verimatrix: Where security is concerned, there is perhaps one golden rule — there will always be some new or previously unappreciated points of weakness that might be the source of a new exploit.**

proper insight into the health of every application and transaction in order to keep up with the pace of change and deliver outstanding customer service," he adds.

To help operators with this endeavour, Verimatrix recently announced the acquisition of the MiriMON technology and development team from Genius Digital, a provider of audience analytics for TV. With this client data collection technology now featured within Verimatrix's Verspective Operator Analytics solution



# multi-pronged tent security

dozens of millions,” he says. “Both content producers and service providers suffer significantly from the loss of legal viewers and the corresponding loss of subscriber fees and advertising revenues — strong, efficient security and anti-piracy services are essential.”

Also as important, future-proof your content protection, in order to keep up with the new security requirements arising from the expansion of TV viewing into 4K/Ultra HD (UHD) and high dynamic range (HDR). Lamenting that service providers are often reluctant to adopt new approaches to content protection, Berkovich says: “The rapid evolution of content creation and delivery makes it critical that they be ready for change and are willing to choose the most flexible technologies for preserving the integrity of their service offerings.”

One operator looking to buffer its IPTV ecosystem is ZTE Corporation, who has adopted Conax’s Connected Access IPTV security client. Fang Hui, VP, ZTE Corporation, highlights: “As we aim to tap the broad opportunities forecasted in the coming year for the IPTV market, ZTE sees strong synergies in partnering with Conax to provide their leading security technology for our global IPTV offering.”

Connected Access is a security client catering for multiple uses, including IPTV and over-the-top (OTT), for connected set-top boxes (STBs). Through a security client, operators can securely deliver video content over both IPTV multicast and OTT adaptive streaming, irrespective of the streaming protocol used. This, according to Tor Helge Kristiansen, EVP, principal architect, Conax,

“significantly simplifies” the key management processes and ensures consistency in the business rules and enforcement of content restrictions across any distribution platform. “For ZTE, this means they can focus on building the best services with the best user experience and be rest assured that the Connected Access solution will handle the security in the best possible way,” he adds.

Kristiansen also observes how tougher security challenges are not only becoming more visible, but also growing at an “alarming rate”. Of these, traditional pay-TV piracy, in which pirates sell illegal access to operators’ TV services, remains a major threat. “Selecting a good CAS/DRM solution and STB chipset equipped with a sound security design is the best countermeasure towards these types of attacks,” he offers, while identifying the growing trend of illegal re-streaming of content over the Internet.



**Tor Helge Kristiansen, EVP, principal architect, Conax: Traditional pay-TV piracy, in which pirates sell illegal access to operators’ TV services, remains a major threat.**

Manifested as individual movies provided through bit torrent sites, or as live streaming of complete TV services, these types of attacks can be difficult to prevent. Kristiansen elaborates: “In these instances, the security of the HDMI port is known to be broken, making it easy for pirates to get hold of the content in a format suitable for re-streaming.

“To fight these types of attacks, the best countermeasure is forensic watermarking solutions combined with advanced anti-piracy services. This enables operators and content owners to locate and shut down the sources of illegal redistribution.”

Perhaps, there is one threat that is most disturbing, Kristiansen cautions — hackers who are increasingly launching sophisticated cyberattacks targeting large ransom payments to restore stolen or locked-down information.

A homogenous population of hybrid STBs, he adds, can be considered an ideal target for such attacks as they are effectively advanced computers that may be less protected than a home PC. “The security challenges to be overcome by a modern STB include catering for attacks aimed at getting access to the content itself, as well as the ability to use the STBs to launch ransom attacks or even DDoS (distributed denial of service) attacks on critical infrastructure or businesses.”

To mitigate this threat and prevent attacks, operators need to protect their platforms and their subscribers by ensuring that they introduce only STBs that have been designed and evaluated to the highest security standards, Kristiansen concludes.

Where security is concerned,



“The rapid evolution of content creation and delivery makes it critical that they be ready for change and are willing to choose the most flexible technologies for preserving the

integrity of their service offerings.”

— **Leonid Berkovich, VP marketing, products and solutions, Viaccess-Orca**

there is perhaps one golden rule — there will always be some new or previously unappreciated points of weakness that might be the source of a new exploit, Verimatrix’s Oetegenn expresses. “That’s why pay-TV revenue protection specialists like Verimatrix are already deploying machine learning and artificial intelligence (AI) to protect customers’ video services and are extending these to the Internet of Things (IoT), both for proactive monitoring and post-attack response,” he explains.

Going further, Verimatrix has identified a number of core elements relating to IoT security lifecycle management:

- Device integrity, which implies that measures have been taken to detect and prevent attempts to hijack devices. This would be achieved firstly by ensuring the integrity of the bootstrap process by which devices obtain information to allow them to be authenticated for operation within an IoT domain, and secondly by ensuring integrity of the devices’ updating processes to prevent subsequent attacks.

- Authentication and secure communication, which serve to ensure that only devices explicitly identifiable are allowed to join a

given IoT network, and that communications are protected from interception or alteration during transit.

- Proactive threat monitoring, which serves to maintain the security of data collected by a connected device over its lifecycle. As monitoring becomes more sophisticated, it will be more likely to pick up attacks early or even sniff them out before they occur.

And as OTT proliferation shows no sign of abating, the sheer visibility of OTT networks presents a much more viable target for attacks. These threats, says Oetegenn, are also moving beyond just content theft. “Devices are now much more susceptible to hacking, and pirates can even turn them into platforms for launching cyberattacks,” he details. “This became evident by a recent DDoS attack that exploited DVRs, among many types of personal IoT devices, including baby monitors and home surveillance cameras.”

“It has become evident that security measures should no longer be confined to using encryption to prevent unauthorised access of distributed content — there is now an urgent need for security at the headend, and protecting the device as a whole.” **APB**

**To prevent attacks, operators need to introduce only STBs that have been designed and evaluated to the highest security standards.**

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# Masstech Innovations draws on established strengths to deliver new synergies

**Can you give us an update on the merger of Masstech and SGL, and how the new entity is drawing on the strengths of both companies to provide a more unified and integrated proposition for the broadcast and media industry?**

**Joe French:** The merger was conceived to take advantage of several key strengths of each organisation. Masstech provides a 24x7x365, broadcast engineer support call centre operated out of Europe. SGL clients will now have access to that support as part of their annual support contracts.

Masstech's MassStore products provided a more complete solution base, with transcoding and powerful search tools that spanned not only structured but also unstructured data, a highly complex and complete workflow engine and a powerful simple UI for a complete media asset management (MAM) experience. This product will continue to provide a useful solution to the enterprise market.

SGL's strength was always in how complete it has integrated to world-class solution providers such as Avid, Belden, Vizrt, Dalet and others for their hierarchical storage management (HSM) solutions. This tight integration allowed those providers to offer a highly integrated solution within their unique market niches.

Masstech will continue to build upon those strengths — the end-

Earlier this year, Masstech and SGL merged to form Masstech Innovations, which aims to be the broadcast and media industry's largest provider of solutions for managing the lifecycle of valuable media assets. As Masstech Innovations makes an IBC debut this month, its president and CEO, Joe French, reveals more to **APB**.

“The end-result of the merger [of Masstech and SGL] is the largest broadcast support organisation, as well as the largest engineering organisation in this sector of the broadcast marketplace.”

— Joe French,  
President and CEO,  
Masstech Innovations



result of the merger is the largest broadcast support organisation, as well as the largest engineering organisation in this sector of the broadcast marketplace. The Masstech-SGL merger will continue to focus on quality of products and support services.

**One of the key goals of Masstech Innovations is to provide better management of key media assets and workflows for its customers. In today's multi-screen, multi-format environment, what do you think are some of the key challenges facing broadcasters**

**and media operators?**

**French:** Efficient usage of storage will always be key and being able to take advantage of preferences is a goal. If a broadcaster wants to hold everything on-premise using tiered storage, or if he chooses to use a private or public cloud, these

choices should be easy to deploy and use, and not be a limitation of the solution supplier.

Re-purposing content for distribution will also be a key element; therefore, integration of transcoding is a fundamental component for any solution provider in this space. This integration will make for more efficient movement and deployment of content, in conjunction with a powerful workflow engine that addresses the complexities of any broadcast operation.

Masstech has all of these components integrated into an easy-to-use interface with a powerful search component that addresses structured, as well as unstructured, data as the essentials for a broadcaster moving into the future and facing the challenges you have outlined above.

**IBC2017 will also be the first time the companies will be exhibiting as Masstech Innovations. What are some of the key highlights visitors can expect?**

**French:** Both companies have been providing solutions in the broadcast marketplace for more than 15 years, and we have the largest installed base of archived solutions in the world. At IBC2017 booth 7.J15T, we hope to show to both the SGL and Masstech client base expanded feature capabilities while emphasising our commitment to support and address the growing interest in the cloud and complete solutions.

## Flash and tape – a perfect pairing of storage technologies

The need to have data at the fingertips of corporate managers, producers and consumers is increasing. Decisions must be made in a timely manner, which has led to the growing adoption of flash disk storage also known as Solid State Drives (SSD). This type of storage is utilised for *hot data* — data that requires rapid access. However, over time this type of data cools and needs a low cost and secure place to rest in case it is recalled. That place is LTO tape technology.

Here, we discuss what makes SSD hot, what makes LTO tape perfect for cool and cold data, and how these two technologies make the perfect storage pair.

### What makes SSD tick?

SSDs are a non-volatile storage device using integrated circuit assemblies as memory to store data persistently on solid state flash memory. SSDs are not hard drives

in the traditional sense, as there are no moving parts involved. A traditional hard disk drive (HDD) consists of a spinning disk with a read/write head on a mechanical arm called an actuator. An SSD, on the other hand, has an array of semiconductor memory organised as a disk drive using integrated circuits.

An SSD may also be referred to as a Solid State Disk. SSD can provide rapid input and output performance compared to HDDs. SSDs can be utilised as the primary target for very high performance jobs with HDDs and tape as alternate targets, and flash SSD has the ability to read data directly and immediately from a specific cell location.

High-performance servers, laptops, desktops or any applications that need to deliver information in real time or near real time can benefit from SSD technology.

Eventually, this data needs secure, low-cost, long-term preservation, which is where LTO technology comes in.

### What makes LTO tape the ideal SSD storage partner?

There is constant demand for fast data computation and retrieval. As hot data cools, it is less frequently accessed, but still needs to be retained in a safe, secure and economical way.

LTO-7 tape technology has the attributes that makes it an ideal storage tier to pair with primary tier SSDs. These include:

- Up to 15TBs of secure storage per cartridge compressed (6TB native) — that is equivalent to over 2,000 DVDs and more than twice the capacity of LTO-6 technology.
- Up to 750Mbps of blazing backup speed per drive compressed (300MB/second native).
- Support for tape drive hard-

ware encryption and WORM (write-once-read-many) tape to address security matters.

■ Previous generation compatibility — can read and write LTO-6 cartridges and read LTO-5 cartridges to protect investments.

■ Support for Linear Tape File System (LTFS), which helps make LTO tape easy to use in a manner like using disk, that is, simply drag and drop files to and from the tape.

■ In a 10-year Total Cost of Ownership (TCO) study by ESG Research, the annual TCO for an LTO tape scenario was estimated to have an 85% savings, compared with a disk system scenario.

### LTO-7 specifications – a closer look

How are LTO tape's secure, high-performance and low-cost storage attributes and specifications made possible?

LTO-7 technology employs a

32-track head instead of 16 tracks as in previous generations and has an advanced servo format with an improved error correction code (ECC).

The enhanced ECC allows for more tracks and increased linear density, which allows more bits per inch. These enhancements help improve performance, capacity and the bit error rate from the existing and notable 10E17 to the 10E19 for improved data integrity.

The pairing of flash SSD and LTO technology as part of your overall tiered storage strategy can help organisations make timely decisions, as well as preserve data economically and safely for the long haul.

■ This article is from the LTO Program. Linear Tape Open (LTO) technology offers data storage solutions with high capacity, performance and protection. To learn more about the LTO Program, visit [lto.org](http://lto.org).



# Charting TV's evolution: From television (TV) to total video (TV)

BY NICK BURFITT

Nearly 100 years on from the invention of the television by John Logie Baird, TV is now a fusion of audio-visual experiences, delivered to Internet-connected PCs, laptops, smartphones, tablets, games consoles, set-top boxes, DVRs and, yes, not forgetting, TV sets. It delivers linear, time-shifted, place-shifted, catch-up and on-demand experiences.

As the world of TV viewing transforms, the demands placed upon TV audience measurement are also changing, where it is now important to have a holistic view of audience behaviour. Measurement techniques have evolved, from measuring the TV set to measuring TV as a cross-device, cross-platform medium.

Here is a look at the key changes and how TV measurement is responding:

## The boom in broadcaster video-on-demand (VoD)

Over recent years, broadcasters have embraced online services as an extended means of distributing content. Online video services enable broadcasters to extend viewing across devices and give consumers access to content whenever and wherever they choose. Far from being a threat to TV, the Internet has liberated TV content — and the advertising that sits alongside it — to be available anytime and anywhere.

TV measurement currency services have responded to this shift by capturing census data from tagged online players, which is then combined with panel data to provide people-level insights into audiences' online consumption. In other words, sophisticated data integration has become critical. Today, it is all about a hybrid approach to measurement, integrating census and panel data to ensure a complete view of the total audience.

A regional example of a market which has embraced this approach is Hong Kong, where all viewing on the TV set, including content transmitted via over-the-top (OTT) media boxes, will soon be measured.

## Social is amplifying the power of TV

Social media platforms have emerged as a complementary part of the broadcast experience and are playing a rapidly growing role in how the value of TV extends within and beyond the broadcast window.

Marketers are now able to leverage the engagement opportunities that span from broadcast across social channels. By understanding the social media patterns around specific programmes, broadcasters can extend viewer engagement beyond the TV broadcast itself. Brands can therefore enhance their targeting to more socially engaged viewers.

In the Philippines, there is high engagement on Twitter around sporting events. A recent volleyball championship match triggered nearly 100,000 Tweets, with the audience showing brand affinity to particular brands in the food and beauty categories. This data can be leveraged for greater audience understanding, and targeting.

## The potential of programmatic

Programmatic's uptake in the broadcast sector, while slow, is steadily gaining traction as a new mechanism to trade advertising.

As the volume of user data available and number of channels and services on offer grow, we can expect the application of programmatic advertising methods in the broadcast space to increase.

For marketers, the benefits of real-time measurement could present a huge opportunity. Latin America has pioneered this form of measurement, with the industry receiving information on their audience in real-time throughout every minute of the broadcasting window in multiple markets, including Brazil.

## Niche becoming normal

Whether offering regional linear broadcast content or providing interest-based short form content via YouTube, niche TV and video channels have proliferated in recent years. This is driven by greater bandwidth on cable channels, the transition to digital

TV and lower barriers to entry for online only platforms.

Hulu, Amazon, Sony Pictures, Vimeo and Roku are examples of platforms that distribute online niche channels. Sony Pictures, for instance, has differentiated itself with its AXN channel, which regularly churns out Asian reality TV series based on foreign originals. Think *The Amazing Race Asia* and *Asia's Got Talent*.

This is a golden opportunity for marketers to reach a readily engaged audience in a targeted and focused way, and measurement is rising to the challenge of capturing niche viewing by integrating census-level data and return path data, or set meter panel data with traditional currency panels.

However, the new, more complicated and nuanced world of TV measurement requires more active participation from both broadcasters and media platforms. In order to achieve a truly unified industry currency, content owners will need to provide better metadata, and online video players will need to join broadcasters by ensuring they have transparent and auditable measurement systems in place.

Ultimately, TV is still the king of content — whether it is watched on the TV set from

the comfort of home, or on a smartphone from the beach — and the opportunities it offers to marketers and brands are second to none.

However, the transition from TV to total video means the industry continues to challenge itself to budget, plan, execute and measure brand campaigns to understand an audience holistically, regardless of how, when and where they are consuming content.



Nick Burfitt is managing director, APAC, Kantar Media



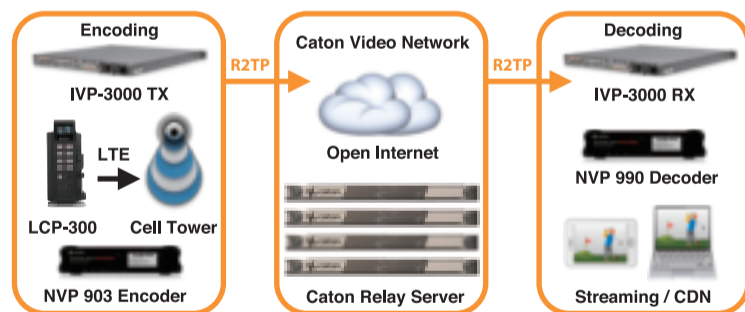
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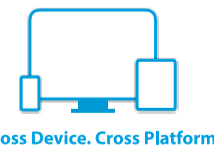
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## ZoneTV partners Ooyala and Microsoft to bring AI into linear TV

ZoneTV, a new digital entertainment network for pay-TV operators, has teamed up with Ooyala and Microsoft to develop a customisable suite of linear TV channels.

ZoneTV has licensed 6,000 hours of digital content, which the company has curated into specialised channels delivered to pay-TV subscribers. Although these channels will initially appear like any traditional linear channel, ZoneTV's service enables consumers to combine linear, on-demand, and customisable choices into a new offering called ZoneTV Dynamic Channels.

The content in these specialised channels will be presented to viewers through the ZoneTV Programming Studio — integrated with Ooyala's Flex CMS media logistics platform and Microsoft Cognitive Services' Video Indexer which builds upon media AI (artificial intelligence) technologies to make it easier to extract insights from videos — to curate fine-tuned, specialised channels.

ZoneTV will also adopt Ooyala's Flex Platform for its end-to-end video workflow for both new specialised channels and its video-on-demand (VoD) assets. Flex, which runs on Microsoft Azure Media Services, is able to distribute video assets onto devices with Ooyala's video platform, where it automates transcoding, packaging and syndication.



# APB

## DISTRIBUTION



### Argosy expands power management portfolio

Argosy has expanded its portfolio of power management solutions following the signing of an agreement with IPE to distribute the latter's eMU power distribution units (PDUs) into Europe, the Middle East and Africa (EMEA). All IPE's eMU units can be daisy-chained together to provide up to 48 outputs via a single IP connection, allowing users to install the power distribution solution in educational facilities, houses of worship, pre- and post-production facilities, as well as outside broadcasting (OB) vehicles.

### Timecode Systems offers UltraSync One

Timecode Systems has introduced UltraSync One, the latest addition to its range of timecode generators and transceivers. Measuring 55mm x 44mm x 17mm, UltraSync One weighs 39g and offers a battery life of more than 25 hours, in order to provide "hassle-free" sync even on the longest shooting days, according to Timecode Systems. The company added that UltraSync One is the "only product in the world" of its size and price point to have a genlock and world clock sync output, in addition to timecode.

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# IP-equipped OB vans ready to hit the road live

With IP technology being increasingly adopted in outside broadcast (OB) vans, the live broadcast set-ups demand new approaches in terms of workflows and design. **Josephine Tan** discovers how OBs have evolved following the implementation of IP-based solutions.

**A**n outside broadcast (OB) van is fundamentally a mobile broadcast studio. Housing all the equipment needed to produce and deliver a live event — such as cameras, routers, switchers and multiviewers — within a vehicle, OB vans continue to act as a valuable tool for broadcasters in ensuring the coverage of local and on-set productions.

In OB 4, the latest addition to the fleet of OB vans operated by Italian production company NVP, the triple-expanding truck has enabled the company to accommodate multi-format productions in SD, HD, 4K/Ultra HD (UHD), standard dynamic range (SDR) and high dynamic range (HDR).

At the heart of OB 4's audio system are a pair of Lawo's mc<sup>2</sup>56 production consoles, a Nova router and DALLIS interfaces. Completing the features needed in the broadcast production workflow is Lawo's virtual studio manager (VSM) and the V\_pro8 eight-channel video processing units, which are fitted in a compact 1RU housing.

Together, the audio consoles and VSM have empowered NVP to manage multi-format operation across a variety of productions. This includes Italy's *Serie A* football league matches produced in 4K/UHD, concerts and musical events. The OB van has also been deployed for conference coverage, including the G7 Summit 2017 in Taormina, Sicily, Italy, in May when NVP was the host broadcasting company.

"Lawo's solutions provided power and versatility, opening the infrastructure to any interaction by simplifying complex operations, and establishing interconnections that support complex remote production capabilities," says Ivan Pintabona, technical manager at NVP. "VSM works perfectly with other products of the same range. I am pleased with my choice, and I am deploying new solutions and function-

alities using Lawo's products daily."

Additionally, OB 4 is equipped with Grass Valley's cameras, including 20 4K LDX86N and eight LDX82 WorldCam, all with HDR functionality and capable of simultaneous operation, alongside Dolby E, 12 replay stations and six producer positions. With two dedicated video and audio control rooms, all sources can be managed separately to supply any type of production, host signal and national integration on-board.

To enable multi-format simulcast 4K/UHD HDR, HD 1080p HDR, and HD 1080i SDI productions, NVP required an enabling control system, which is one reason for the deployment of the VSM control system. The system is capable of controlling all equipment in OB 4, including overall labelling and tally. Moreover, VSM runs on an IP-backbone and is future-proof for further developments and productions of OB 4 in an increasingly IP world.

The proliferation of IP technology in broadcast infrastructures will significantly change the role of OB vans, declares Gregor Erlitz, head of sales, Asia-Pacific, Lawo.

He tells *APB*: "Implementing remote production workflows reduces the need for having fully equipped large production OB vans on-site. We will see the design of traditional OB vans being replaced by smarter layouts that still could be operated as standalone production trucks, but in parallel, act as a front-end for remote

production set-ups that provide additional mixing, processing and storage resources from a networked production facility, whenever needed.

"Production staff then can reside inside the OB van, or at other distant facilities, to operate equipment that is not necessarily housed in the same OB van anymore."

While the move to IP-based infrastructures may be fuelled by 4K/UHD investments, Erlitz points out that an inherent advantage of IP is its ability to manage different types of media and production formats within the same infrastructure. He elaborates: "The integration of audio, video and control within the same network, and having them accessible via a unified operating interface, enhances production configuration and reduces set-up time dramatically. Another aspect with IP is that the staff and the equipment location become potentially independent, resulting in better utilisation of resources."

Hiroyuki Takahama, assistant general manager, content creation solutions marketing, professional solutions company (PSAP), Sony Corporation of Hong Kong, agrees with Erlitz's points on staffing efficiencies and better allocation of resources brought forth by IP. He adds: "Apart from satellite uplinks, broadcasters now are able to explore more possibilities with the availability of new network connections.

"There is an increase in the adoption of IP-based workflows in OB vans which is proving to be intrinsically beneficial, as



Italian production company NVP has equipped its OB 4 with solutions from Lawo, including mc<sup>2</sup>56 production consoles, a Nova router, and DALLIS interfaces, alongside the VSM control system and the V\_pro8 video processing units.





it provides scalability and flexibility while supporting cloud-based and service-based operating models. Furthermore, the increase in the numbers of OB vans currently deployed in the broadcast scene that are equipped with a certain degree of IP capabilities has shown that the technology is ready for live production.”

Sony is now offering its IP Live technology, which is designed to create a single, unified IP network that aims at lowering equipment costs and replacing dedicated SDI routing with commercial off-the-shelf (COTS) switches. Calling the IP Live technology a “substantial step forward” in OB van workflows, Takahama explains that compared to IP Live, conventional 3G-SDI cabling requires high cost, more weight and high storage volume, thus impacting the transition to 4K/UHD programme production.

He continues: “For instance, each 4K/UHD 50p connection requires four 3G-SDI cables. With compression enabled, IP Live is capable of carrying two 4K/UHD 50p signals on a single-fibre interconnect. Our calculations for a sample eight-camera truck revealed 75% reduction in the number of cables, and 85% savings in cable weight. The savings in size and weight are major advantages when configuring the OB van.”

In Australia, NEP is one of the country’s largest OB and studio facilities, providing broadcast infrastructure for sports and studio productions locally and internationally. The company has chosen several equipment from Sony — including the HDC-4300 cameras, XVS-6000 and XVS-8000 IP-capable switchers, as well as a wide range of OLED and LCD monitors — for its new IP-based remote production solution.

The systems are installed in NEP’s new Andrews Hubs, which connect 29 sports venues via a new high-bandwidth network. Four new all-IP OB vans and seven legacy SDI trucks, enhanced with new IP layers, will complement the two production hubs, which are located in Sydney and Melbourne.

NEP’s Andrews Hubs will also enable multiple, simultaneous OB productions. Hence, despite the HDC-4300 cameras being located at different venues, the event production teams will be based at the production hubs. The SMPTE 2110 signals from these cameras will be transmitted to the production hubs, where the production switching will be performed on Sony’s XVS series of vision switchers.

Marc Segar, director of technology at NEP Australia, explains: “NEP is committed

to an all-IP ecosystem at the Andrews Hubs and our new trucks at the beginning of this project. We are therefore very pleased to be partnering with Sony on switcher and camera technologies that complement the rest of our fleet. The new HDC-4300 cameras will join the 48 in our current inventory.”

Additionally, NEP Australia has equipped its 4K/UHD-HD-capable OB vans with IHSE’s Draco tera KVM (keyboard, video and mouse) switch. Draco tera is connected to a range of on-board equipment via control interfaces, enabling operators to connect all computers and devices throughout the OB van to their individual workstation using keyboard commands.

As for Tencent, a Chinese Internet platform, it has tasked systems integrator (SI) Ideal Systems to design and build a 4K/UHD HDR OB van equipped with IP infrastructure. The IP infrastructure is designed based on the SMPTE 2022-6 and SMPTE 2022-7 standards, with the ability to upgrade to SMPTE 2110. Developed by the Society of Motion Picture and Television Engineers (SMPTE), SMPTE 2110 is a set of standards — pending ratification — that specifies the carriage, synchronisation and description of separate elementary essence streams over IP.

Tencent’s OB van is fitted with Grass Valley’s 4K LDX86N cameras. As part of the LDX86 series, the LDX86N camera features native 4K/UHD (3840x2160) and native 3G/HD (1920x1080) image capture, using three 3840x2160p 4K/UHD XensiumHAWK CMOS imagers with DPMUltra (dynamic pixel management) functionality.

Feeds from the cameras will be transmitted via IP to GV Node, an IP processing and routing platform. Designed to manage “accurate” switching within IP workflows, GV Node is integrated with the support for SMPTE 2022-6 IP inputs and outputs, as well as TICO visually loss-less compression, to enable the delivery of 4K/UHD applications. GV Node also supports the extensive range of Densité signal-processing modules, including integrated Kaleido multiviewer to deliver monitoring for live production.

Li Hua, head of engineering, Ideal Systems China, concludes: “It’s a natural progression to see video developing from SD to HD, and to 4K/UHD, or even 8K. Under this circumstance, IP will have a clear advantage over high-bandwidth transmission. Although some manufacturers and organisations have different approaches towards IP standardisation, which has yet to be unified, we look forward to the TR-03 and TR-04 standards



PHOTO CREDIT: TIMELINE

Above: Timeline Television’s UHD2 is an IP 4K/UHD HDR OB van, and is fitted with Hitomi’s MatchBox 4K to measure audio and video alignment.

Left: The IP infrastructure installed by Ideal Systems for Chinese Internet giant Tencent’s OB van is designed based on the SMPTE 2022-6 and SMPTE 2022-7 standards, with the ability to upgrade to SMPTE 2110.

from Video Services Forum (VSF) to provide an overall solution while achieving IP interoperability.”

And when watching the broadcast of a live event, it is extremely distracting to the viewers if lip-sync error occurs as it is instantly visible. To accurately measure audio and video alignment, London-headquartered video production company Timeline Television has equipped its OB van with Hitomi’s MatchBox 4K.

Dubbed UHD2, the IP 4K/UHD HDR OB van is designed based on the SMPTE 2110 standard, enabling both audio and video to be processed in the IP stream. The 1U Hitomi MatchBox provides test signals generation and comparison of video and

audio delays, enabling operators to measure and monitor the delays, ensuring delays are precisely matched.

Lee Wright, senior broadcast engineer at Timeline, concludes: “With 4K/UHD transmissions, there is a relatively high video processing delay to audio. The only way to measure the discrepancy out of the HEVC/H.265 encoder is by using a MatchBox as it provides an actual measurement of delay in milliseconds, allowing the engineer to manually add the correct delay in the audio to match the video exactly. Every pair of AES audio channels are checked, and once the delay is added, it is great seeing a zero-difference reading on the analyser.” **APB**

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# KBZ Gateway boosts connectivity services with AsiaSat

KBZ Gateway (KBZ), a subsidiary of The Kanbawza Group of Companies based in Myanmar, has reaffirmed its partnership with AsiaSat Satellite Telecommunications (AsiaSat) to expand very small aperture terminal (VSAT) broadband services to its clients across the country.

The alliance allows KBZ to offer advanced broadband services that support up to 100Mbps of throughput. The expanded capacity, said KBZ, will also allow it to extend its footprint into the hospitality sector.

Prior to the signing of this new agreement, KBZ has already expanded its C-band and Ku-band capacity on the *AsiaSat 4* and *AsiaSat 7* satellites to meet the growing demands from its clients in other verticals.

U Naing Tun Kyaw, managing director of KBZ Gateway, commented: "AsiaSat has matched the requirements of our service portfolio that allow our services to be delivered to customers with high uptimes on Ku-band, even in the rain. With the launch of *AsiaSat 9* later this year, our clients will be able to further benefit from its increased power and enhanced coverage, enjoying higher uptime and faster speed for our data networks across Myanmar."

The *AsiaSat 9* satellite is planned to replace *AsiaSat 4* at the 122° East orbital location, and is scheduled for launch later this year. Equipped with a dedicated Ku-band Myanmar beam, *AsiaSat 9* is capable of providing a downlink power up to 55dBW that allows for



KBZ Gateway is working with AsiaSat to expand very small aperture terminal (VSAT) broadband services to its clients across Myanmar.

smaller and "less costly" antennas for VSAT broadband and direct-to-home (DTH) services across the country. This is in addition to a C-band global beam that offers enhanced power and coverage across Asia-Pacific, according to AsiaSat.

Barrie Woolston, CCO at AsiaSat, concluded: "Myanmar remains a key focus for growth in the Asia-Pacific region, and we are delighted to be contributing to the growth of the Myanmar economy through our partnership with KBZ."

# MV International reaches out to Laos via *Thaicom 8*

Thai broadcaster and direct-to-home (DTH) platform operator MV International (MVI) has partnered Thaicom to establish a pay-TV platform in Laos. Under the multi-year transponder leasing agreement, MVI will utilise Ku-band capacity on the *Thaicom 8* satellite.

Chaiyuth Tavipvordech, president of MVI, commented: "Thaicom and its *Thaicom 8* satellite enable us to establish a pay-TV platform in Laos to deliver high-quality broadcasting services and programming. Thaicom's premium satellite communication services present MVI the opportunity to expand our business into new media and broadcast service segments of the South-east Asian market."

*Thaicom 8* is a Ku-band satellite, which was launched in May last year, and is co-located with the *Thaicom 5* and *Thaicom 6* satellites at the 78.5° East orbital location. The satellite's payload includes 24 transponders that deliver a full range of broadcast and data



MV International has procured the Ku-band capacity on the *Thaicom 8* satellite, enabling the company to establish a pay-TV platform in Laos.

services designed to the communication needs of the entertainment and media industries in South Asia, South-east Asia and Africa.

Kuntima Sarika, vice-president, ASEAN market, Thaicom, concluded: "We are pleased to support MVI's development of a pay-TV platform in Laos. The commissioning of *Thaicom 8* in 2016 has helped further consolidate Thaicom's video channel neighbourhood of high-power satellites at the 78.5° East orbital slot, as the point of reference for broadcasting in South-east Asia."

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# IHSE's Draco tera KVM switch connects broadcast facilities in Asia

Chinese broadcaster Zhejiang Radio and TV Group has moved to the new Zhejiang International Film and TV Centre building, which houses studios and production facilities, as well as several departments responsible for online and new media operations.

To facilitate operations, Zhejiang Radio and TV Group chose IHSE's 160-port Draco tera enterprise keyboard, video and mouse (KVM) switch to connect 100 operators to more than 70 source devices via Cat X or fibre cables.

In the newsroom, a multi-segment video wall is also connected to the KVM switch, allowing users

to select the set of source images to be displayed in any situations.

With this KVM installation, users are able to connect the devices they require to undertake their daily tasks and responsibilities. Using simple keyboard shortcuts, each user can switch between all available broadcast systems according to their choice.

Terence Teng, managing director for Asia-Pacific, IHSE, concluded: "The large switch implementation in such a prestigious broadcasting organisation in China shows how important and credible the Draco tera KVM switch is to the industry. It is flexible enough to

adapt to all the original requirements demanded of the system, and can be updated and changed to meet future needs."

Also moving to a new broadcast facility is Japanese broadcaster Chukyo TV (CTV), which has also chosen the Draco tera switch to enhance workflow efficiencies within its new office headquarters.

With plans to locate staff over a large multi-floor building, CTV's engineering teams wanted to house all broadcast technology equipment centrally, and connect individual users throughout the building over copper and fibre cabling.



Zhejiang Radio and TV Group has employed IHSE's Draco tera KVM switch to connect 100 operators to more than 70 source devices via Cat X or fibre cables in its new Zhejiang International Film and TV Centre building.

Working alongside CTV's engineering teams and systems integrator Itochu Cable Systems, IHSE provided its Draco tera KVM switching system to enable signal distribution across every CTV workstation, and to provide CTV operators access to all designated devices.

Users are able to access editing, caption, scheduling and other broadcast tools from their workstation consoles. The system also provides connectivity, switching, and video and audio transmission across the studios, production

floors and other areas within the broadcast facility.

Ryuhei Takahashi, deputy director at CTV Technology, said: "The extensive access control and supervisory capability of the IHSE switches enable us to designate which individual users have access to specific devices in the centre. For example, individual users can be allowed to control playback of video without being able to edit it, or they can be allowed to only access specific SNG (satellite news-gathering) and FPU (floating point unit) devices."

## Quicklink chooses Blackmagic Design for mobile broadcasting and streaming

Blackmagic Design's DeckLink Quad 2 PCIe capture-and-playback solution has been integrated with the Quicklink Remote Communicator, Quicklink Encoder and Quicklink TX video call management system.

The DeckLink Quad 2 puts the power of eight DeckLink cards onto a single circuit board that plugs into a single PCIe slot. Used with the Quicklink systems, the capture-and-playback solution provides the latency and versatility to handle many different mobile broadcast and streaming scenarios, said the companies.

The DeckLink Quad 2 also provides Quicklink with four independent capture-and-playback channels, in addition to four extra



Blackmagic Design's DeckLink Quad 2 PCIe capture and playback solution is being used alongside the Quicklink Remote Communicator, Quicklink Encoder and Quicklink TX video call management system.

channels that can be used for configuring the cards in any combination of up to eight capture or playback channels.

With the DeckLink Quad 2, Quicklink customers can connect to any SDI device, and are afforded the flexibility that comes with the

DeckLink Quad 2's ability to support a wide range of video formats and resolutions.

Richard Rees, CEO of Quicklink, said: "The DeckLink Quad 2 has allowed us to release the groundbreaking ultra-low delay, full duplex Quicklink Remote Communicator solution that is able to support up to 60fps."

The Quicklink Remote Communicator streams and returns video and audio in real time, full duplex with ultra-low delay. It can be used to create ad hoc, ultra-low delay full-duplex video/audio contributions from any device using a Web browser, as well as share high quality return video to a remote users, and integrate ultra-low delay audio commentary.

## More US TV operators trialling 4K/UHD

Another nine cable and IPTV operators in the US have initiated 4K/Ultra HD (UHD) trials on SES' 4K/UHD content delivery platform. The companies include Alliance Communications, Cincinnati Bell, Douglas County Community Network, Hotwire, Midco, Midwest Video Solutions (MVS), Oneida Telephone Exchange, Skitter TV and South Dakota Networks (SDN).

Jonathan Bullock, VP of corporate development and government at Hotwire, announced that the company would be launching new 4K/UHD services later this year, following the trials being conducted on SES' 4K/UHD platform. He added: "The SES 4K/UHD platform is easy and fast to deploy on our all-fibre network, allowing us to provide the best 4K/UHD channel line-up virtually overnight."

SES' 4K/UHD platform combines satellite distribution services, reception gear and a 4K/UHD channel line-up that includes Fashion One 4K, Travelxp 4K, and SES' 4K/UHD

demonstration channel. With the addition of the nine TV operators, SES' 4K/UHD platform now serves a total of 30 pay-TV providers in the US, enabling them to test and deliver 4K/UHD content to a combined audience of more than 10 million subscribers across the country.

Of these, three operators — Marquette-Adams Communications, Highlands Cable Group and EPB Fibre Optics — have already initiated commercial linear 4K/UHD services in subscriber homes via SES' end-to-end solution.



A total of 30 pay-TV providers in the US are using SES' 4K/UHD content delivery platform to test and deliver 4K/UHD content to a combined audience of 10 million across the country.

Steve Corda, VP of business development at SES Video, SES' global media business unit, concluded: "Momentum continues to build as SES accelerates the delivery and commercial availability of 4K/UHD services throughout North America, and we expect more cable and IPTV providers to join the trio of operators who have already launched their commercial 4K/UHD services using our platform."

## Riedel Communications acquires Pidso



Riedel Communications has acquired a majority stake in Austria's Pidso, a manufacturer of antennas and antenna systems.

Riedel Communications has acquired a majority stake in Pidso, a Vienna-based manufacturer of antennas and antenna systems.

According to the companies, the partnership will usher the development of solutions that leverage Pidso's antenna systems with Riedel's family of communication systems while creating synergies between the two companies' R&D operations in Vienna.

Pidso's addition to the Riedel group will also enable Riedel to gain an experienced team and "deep expertise" in custom antenna systems, as well as the access to new markets such as automotive and aircraft, and the growth market of unmanned systems, said Riedel.

Underlining that the partnership will allow both companies to move forward based on "a very sound economic and technological foundation", Thomas Riedel, founder and CEO of Riedel, added: "With its innovative solutions in the field of high-performance antennas, Pidso not only complements our product portfolio, but

also fits right into our company's philosophy. Embracing advanced technology and delivering visionary solutions to real-world challenges have always been part of Riedel's trademark."

Founded in 2006, Pidso offers specialised expertise in the development and manufacture of lightweight antennas, and antenna system that can be integrated into existing building spaces. The company's solutions have already been adopted in the automotive industry, aircraft construction, logistics control systems, as well as video and cinema productions.

Christoph Kienmayer, founder and managing director of Pidso, said: "We have been experiencing solid growth, and our partnership with Riedel will accelerate demand for our solutions, paving the way to an even brighter future. We're honoured to be joining the Riedel brand, and we'll have a perfect environment and ideal conditions in which to take our business to the next level, especially with regard to internationalisation."



# APB

## X-PLATFORM

### DNF builds ST600-KIPRO for AJA users



DNF Controls has introduced the ST600-KIPRO panel, which is designed to provide an IP control option for AJA's Ki Pro Ultra Plus 4K and multi-channel HD recorders.

The ST600-KIPRO is an Ethernet-based tactile control panel that delivers IP-based functionality to AJA's Ki Pro products. It supports up to four AJA units with full IP control over record, play, stop, rewind, fast forward and jog. In addition, ST600-KIPRO is able to create name and record clips, mark and recall cue points, as well as view, select, load and play from a user-specified timecode location.

### VSTV enhances OTT delivery with umbrellaCDN



Vietnam Satellite Digital Television (VSTV) has installed Broadpeak's umbrellaCDN content delivery network (CDN) selector, as a cloud-based solution for the delivery of live over-the-top (OTT) content to its subscribers. Featuring advanced analytics tool that gathers and displays information related to the session requests, the deployment of umbrellaCDN enables VSTV to determine the number of viewers for specific content in a single platform.

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## PANELLISTS



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# TV Everywhere add personalised view

In some of the most developed and connected countries in the world, there are probably more mobile devices than TV sets in a household. And as viewers continue to embrace multiple devices for content consumption, how does the concept of TV Everywhere enable broadcasters to deliver their content from screen to screen? **Josephine Tan** reports.

**M**edia content is no longer restricted to solely being viewed on the TV set. In 2005, YouTube brought video to the Internet at scale, shifting eyeballs from the TV to the computer. With the increase in mobile and Internet penetration, coupled with technological advances, the entire content lifecycle has been transformed — video content now has the ability to not only be distributed anywhere, but also follow viewers everywhere they go.

This is TV Everywhere and, as the name implies, it is a concept describing how linear and on-demand content is consumed using mobile devices, Johan Vanmarcke, managing director, Asia, MediaGeniX, tells *APB*.

Declaring that TV Everywhere is beyond just another distribution channel, Vanmarcke highlights that TV Everywhere empowers media companies — be it broadcasters, pay-TV operators or over-the-top (OTT) service providers — to capture and captivate new pools of viewers with great content.

He elaborates: “Media companies that used to have a stronghold in linear TV will see their market share decreasing year-by-year if they do not offer their content through different distribution channels. While TV will not fade away, as it allows viewers to consume content as a collective activity, media operators have to understand that mobile devices have taken an important role in viewers’ daily lives, and it’s as important as TV and radio used to be.”

To allow broadcasters to better target content to audiences on both linear and on-demand platforms, MediaGeniX developed the WHAT’sOn broadcast management software solution. Designed to manage the flow of the content lifecycle, WHAT’sOn offers integrated modules that addresses the following: Linear



“Media operators have to understand that mobile devices have taken an important role in viewers’ daily lives, and it’s as important as TV and radio used to be.”

— Johan Vanmarcke,  
Managing Director, Asia,  
MediaGeniX

scheduling; promotion and interstitial management; media management; workflow automation; standards integration; content and rights management; analytics and finance; and video-on-demand (VoD).

“TV Everywhere fosters interaction among viewers through social media on the same device, for example, commenting on the content while watching and sharing it on social media,” Vanmarcke says. “Operators can also better understand their audiences, as TV Everywhere requires viewers to authenticate themselves as subscribers in order to use the service.”

Indeed, by using OTT platforms to launch the concept of TV Everywhere, media companies will have the ability to record viewer usage habits. And by employing enhanced content ratings and viewer performance analytics,

operators are able to push relevant content to their users, alongside customised ads to better suit their viewers’ interests and habits, suggests David Blackett, group GM, Magna Systems and Engineering.

As for viewers, he continues, TV Everywhere brings forth a personalised viewing experience with their viewing behaviour being reported on and across multiple platforms, as well as the benefit of accessing the content across the platforms via a single account.

Blackett explains: “Ease-of-use and viewers’ experience are the biggest factors, after content, to drive TV Everywhere. Having the content is important, but being able to find and consume that content quickly and easily is equally crucial.

“For broadcasters, TV Everywhere allows them to have greater reach for their content. Also, being able to push content to more places and people empowers broadcasters to do the same with targeted advertising that is customised and tailored according to viewers’ habits and preferences.

“I feel that TV Everywhere has already caught on but viewers are still very hungry for more. Thus, this trend is not just set to continue, but to grow significantly.”

The success of TV Everywhere is largely attributed to the introduction of smart devices that are small enough to fit in commuters’ pocket, paving the way for content on-the-go. And as consumers are literally expecting TV to be everywhere, one main aspect of TV Everywhere is that the consumer can choose the most relevant content and services they require, Roger Franklin, CEO for Crystal, points out.

By rolling out the concept of TV Everywhere, content providers are offering “a strong service that is exactly what consumers are asking for”, he says. “This offers unending benefits for operators as it provides the opportunities to sell more services through recommendations. Meeting consumers’ demand will also enable the viewers to recognise the brand as one that

**The success of TV Everywhere is largely attributed to the introduction of smart devices that are small enough to fit in commuters’ pocket, paving the way for content on-the-go.**



# resses demand for more ing experience

“Ease-of-use and viewers’ experience are the biggest factors, after content, to drive TV Everywhere. Having the content is important, but being able to find and consume that content quickly and easily is equally crucial.”



— David Blackett, Group GM, Magna Systems and Engineering

is desirable, hence encouraging brand loyalty, which is priceless.”

But when it comes to content, the key in retaining viewers is through personalisation, Franklin stresses. “Targeted content is a worthwhile method to retain viewers to stay with the service. Using metadata, content providers can offer a personalised service. With a service tailored to suit their viewing behaviour, viewers will be more likely to continue to use it as they are pleased with that particular service.”

In addition to content, advertising can also be personalised using big data, to provide more value to the viewers, he suggests. Personalised advertisements, in

turn, result in enhanced brand engagement, and will encourage operators to deliver services that are more likely to be relevant to their consumers.

Franklin concludes: “The bottom line is — all consumers like to feel as though any service they are getting are tailored to their specific needs. It is about time that content providers understand how lucrative meeting this desire is. By providing personalising services, content providers can attract viewers’ attention, and ultimately retain them on the platform.”

While TV Everywhere is set to grow, the biggest challenge for media companies is how to effectively monetise their content, observes

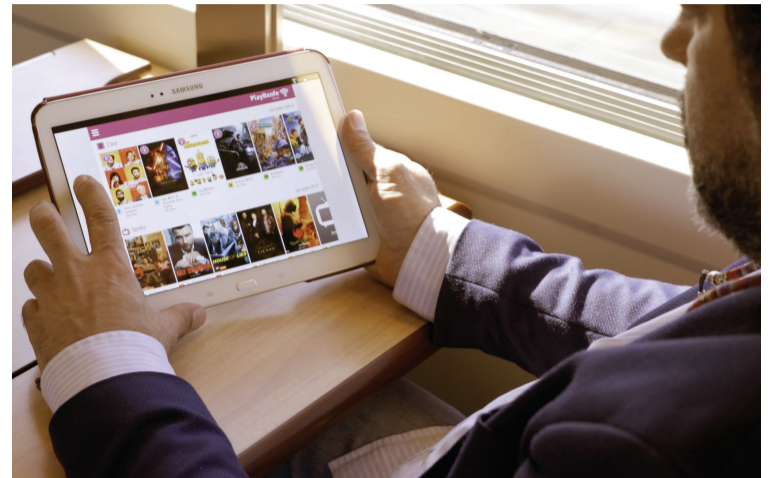
Sushant Sharma, head of consulting services, Asia-Pacific, Accedo.

He elaborates: “There are a few options when it comes to monetisation. If the content is compelling enough, subscription may be an option. Many consumers, however, expect content to be free. Thus, operators may consider offering additional targeted content at a fee or using targeted advertising to monetise the service. Another option is to bundle the content with mobile data packages offered by telcos.”

For instance, Renfe, a Spanish railway operator, has been offering on-board Wi-Fi that allows passengers to connect to the train’s wireless LAN using their own devices. Last month, Renfe expanded the platform by partnering Accedo and Spanish telco Telefonica for the launch of its TV Anywhere service — PlayRenfe.

This collaboration, according to the companies, will allow 19 million Renfe passengers to enjoy video experiences while travelling by train and waiting at stations, without having to tap into their own data bundles.

PlayRenfe entertainment comprises Telefonica’s own productions, films, series, documentaries, programmes, courses, books, games and music. Passengers can switch between five different channels, enabling easy access to live sports events and breaking



Under the collaboration between Spanish railway operator Renfe, Accedo and Spanish telco Telefonica, 19 million Renfe passengers will be able to enjoy PlayRenfe during their journey on Renfe’s trains, and when waiting at the stations, without having to tap into their mobile data.

news at any time. Besides on-demand video programmes and live TV, PlayRenfe also includes other Renfe services such as in-app ticket purchases and loyalty cards.

Sharma continues: “Viewers like to access to content when and where they want it. Being able to watch their show on the train from home to work has become a part of their daily lives.

“As a society, we no longer schedule our lives around the TV programming. Instead, consumers will grab any chance they have to catch up, and content providers will need to have their content ready and on-the-go.”

In response to the shift in consumers’ video consumption habits, several broadcasters and TV networks have launched their own OTT services across the region. These traditional content providers, according to Sharma, are in a unique position to offer premium

content due to their existing relationships with customers. For broadcasters, he adds, these OTT offerings are able to complement their linear feeds, and can either be in the form of an alternate content delivery method or used in a way to deliver niche content.

Sharma concludes: “While some media companies have launched OTT services that are linked to consumers’ pay-TV subscription with an operator, we are increasingly seeing media companies and broadcasters partnering with telcos to either launch their OTT services bundled with data packages or broadband subscriptions, or in some instances, the mobile data is zero-rated.

“Moving forward, we will see telcos providing mobile and fixed broadband as key constituents of the ecosystem in some emerging markets in the Asia-Pacific region.” APB

## Video streaming dominates overall mobile data traffic

By 2022, Asia-Pacific is expected to record the largest global share of mobile data traffic, which is expected to exceed 30 ExaBytes (EB). This, according to Ericsson’s *Mobility Report June 2017*, is due largely to the rapid growth in mobile broadband subscriptions from China — which alone is set to add 495 million mobile broadband subscriptions between the end of 2016 and 2022.

Dominating across all application categories is mobile video traffic, which is forecasted to grow by around 50% annually through to 2022, to account for nearly 75% of all mobile data traffic, the report revealed.

To enable users to access high-quality video outside of homes and on-the-move, 5G is one technology that has the potential to enhance connectivity for the streaming of videos with ultra-low latency, said Ken

Yap, head of media sales, Asia-Pacific, media solutions, Ericsson.

He told APB: “5G is capable of delivering new immersive media experiences such as augmented and virtual reality (AR/VR), and 4K/Ultra HD (UHD) mobile video. It also offers media operators the benefits of advanced service levels such as security and network slicing.

“Additionally, adaptive bitrate (ABR) technology can enable service providers to optimise content delivery, and choose different representations at varying bitrates, depending on individual network capacity. To exploit the technology effectively, service providers need a unified, micro-service-based and software-defined video preparation platform with a dynamic origin that can optimise bandwidth by dynamically switching from unicast to multicast delivery.”



Ericsson’s Ken Yap: Advancements in big data and artificial intelligence will drive further enhancements to the TV Everywhere experience, resulting in the need to reshape future business models.

Particularly in a TV Everywhere ecosystem, where the user experience has to be captivating, he urged broadcasters to have the technology infrastructure — comprising software-defined, cloud orchestrated operation models and analytics-driven technologies — in place in order to “scale effectively with the maximum economic benefits” while driving a new era of “connected and intelligent” consumer experiences.

“TV Everywhere has evolved into a much more enriched, personalised TV experience while maintaining the social element of TV, both physically and virtually, through social media. Advancements in big data and artificial intelligence (AI) will no doubt drive further enhancements to the TV Everywhere experience, which could, once again, reshape future business models,” Yap concluded.



# UEFA trials IP remote production in 4K/Ultra HD

The Union of European Football Associations (UEFA), European football's governing body, has delivered what it calls the "world's first" uncompressed 4K/Ultra HD (UHD) remote production trial.

In collaboration with Snell Advanced Media (SAM) and systems integrator Gearhouse Broadcast, UEFA deployed an IP system for the final match of the 2017 UEFA European Under-21 Championship in June.

The IP system, which replaced a traditional outside broadcast (OB) set-up, delivered live camera signals from the Marshal Józef Piłsudski Stadium in Krakow, Poland, to UEFA, which was located at BT Sport's facility at the Queen Elizabeth Olympic Park in London, around 1,600km away, ready for live edit and playout.

Describing the project as "very successful", Phil Myers, IP product manager, SAM, also stressed the

importance of communication in technology-driven projects where multiple stakeholders are involved. He told APB: "The planning and pre-testing of the network paths proved critical and ensure smooth passage for the IP media flows on the day — something we would strongly recommend to any customer looking to embark on this type of project."

SAM's IP routing and edge devices were deployed for the project, which like any that involves IP, requires a good understanding of the commercial-off-the-shelf (COTS) network switch and its configuration, said Myers.

He continued: "The fundamentals of timing is also not lost, as the use of multiple PTP (Precision Time Protocol) Grandmasters to distribute accurate system timing throughout the network, in order to synchronise devices, was required."

While remote productions have traditionally been constrained by the need for compression to provide connectivity over low-bandwidth infrastructures between the host venue and production facility, SAM was able to remove these constraints by providing UEFA with an uncompressed 4K/UHD IP solution. "This ensured that the UEFA and BT Sport production teams back in London has the highest quality images and audio from Poland, as well as providing a near-live experience due to the IP system's low-latency performance," Myers added.

He also highlighted how the project provided a real-world case study to show that remote production, at the "highest quality" — without compromising system latency or redundancy — is viable today using readily available COTS network switching technology.

André Nel, UEFA's senior broad-



At the final match of the 2017 UEFA European Under-21 Championship held at Piłsudski Stadium in Krakow, Poland, in June, SAM and Gearhouse Broadcast delivered a complete proof-of-concept, IP-based remote production system.

cast engineering manager, said: "This successful test represents a major milestone for UEFA as we continue to innovate and explore remote production solutions ahead of the incredible challenges that future finals and UEFA Euro 2020 — with matches played in 13 different countries — will present."

Over the past 12 months, there have been increased interest and an industry move towards remote

production for major sporting events. This, in turn, is providing a key application area that can be enabled and realised by the use of IP technology, SAM's Myers noted. "This is not only providing significant workflow benefits and better utilisation of resources for our customers, but is also potentially providing greater commercial savings due to these efficiencies," he concluded.

## NEP showcases UEFA Women's Euro 2017 from the cloud



Eurosport engaged NEP to facilitate the delivery of all 31 matches of the UEFA Women's Euro 2017, which took place from July 16 to August 6 in The Netherlands.

Eurosport, a sports TV network operated by Discovery Communications, selected NEP as its facilitating partner for the video distribution of the Union of European Football Associations (UEFA) Women's Euro 2017 football tournament, which took place from July 16 to August 6 in several cities in The Netherlands.

As the host broadcaster of the event, Eurosport adopted NEP's low latency Cloud Production solution to deliver all 31 live matches. Cloud production, according to NEP, represents "sustainable production" as it allows sharing of central resources that can be efficiently deployed in multiple productions and locations, thereby safeguarding the quality of the programmes.

For instance, in the match between Russia and Germany, which kicked off at the Galgenwaard stadium in the Dutch city of Utrecht on July 25, NEP deployed Cloud Production, an IP-based video

production platform where all resources are available from a cloud-based IP infrastructure.

Using its dark fibre network, NEP connected the stadium with the company's cloud network, which comprises a cloud gallery, as well as shading and audio suites, to create a sports programme that can be used for live broadcast.

Simon Farnsworth, EVP, sports and European technology, Discovery Communications, said: "We are excited to be trialling NEP's low-latency Cloud Production infrastructure at these championships. It will increase the efficiency of our live production, allowing us to deliver a premium viewing experience in a more sustainable way than ever before."

To minimise bandwidth requirements, NEP combined its Cloud Production with JPEG2000 and VC2 compression/decompression, which enabled the connectivity between on-site cameras and NEP's

central platform in Hilversum. Feeds from multiple cameras, including a super slow-motion camera behind the goal and two cameras placed on a presentation desk next to the field, were connected to the central platform. NEP also linked commentary in the stadium to the central platform.

Peter Bruggink, CTO at NEP, The Netherlands, added: "For transport layer, our own 100Gbps IP platform is used. In the gallery in Hilversum, the feed was enriched with live graphics and EVS playouts to make a complete programme. Shading takes place from the central shading room in Hilversum. This way, we're making a high-quality and complete live programme, all remotely."

Besides managing cloud production and the full registration of all 31 matches, NEP was also responsible for venue management, commentary positions, dedicated pre- and post-match live positions, as well as international graphics.

## Belden joins SDVoE Alliance to promote AV-over-IP

Throwing its support behind a standardised hardware and software platform for AV-over-IP, Belden has joined the Software Defined Video Over Ethernet (SDVoE) Alliance.

According to Belden, its connectivity solutions take a universal approach to AV and IT signal transmission needs. As the Internet of Things (IoT) and convergence — bringing multiple disparate systems together onto

one network for better communication, mobility, efficiency and safety — become more prevalent, Belden believes its portfolio of audio, video and communication products can help organisations of all kinds integrate the delivery of uncompressed HD signals.

Dave Geon, VP of USA sales, Belden, added: "Years of research and development, spanning multiple levels of the OSI model, put us in a position to support the adoption

of AV-over-IP platforms.

"Belden's deep understanding of AV technology extends beyond cable and connectivity to include the active component brands in our portfolio — including Grass Valley, Thinklogical and Tripwire — which gives us unique insight into AV and IT platforms, and how they can work together."

The mission of the SDVoE Alliance, is to provide the "solid, stable, reliable and cost-

effective" AV-over-IP platform the pro AV market needs to fully realise the benefits of standardised Ethernet infrastructure, Justin Kennington, president of the SDVoE Alliance, described. "We look forward to working with Belden to capitalise on their vast experience in connectivity solutions and lessons learnt during the broadcast industry transition from SDI to IP-based systems," he concluded.



# Imagine Communications delivers cloud-native DR to Zee

Imagine Communications has delivered a cloud-native disaster recovery (DR) solution to global content company Zee Entertainment Enterprises. The business continuity solution utilises the built-in redundancy capabilities of virtualised and geo-dispersed environments to provide Zee with improved protection of its playout operations for "considerably less" than the cost to build and maintain duplicate facilities, said Imagine Communications.

Zee has rolled out a state-of-the-art,

cloud-based business continuity solution in its DR facility in Mumbai, India, using Imagine Communications' Versio playout solution and D-Series automation solution. The backup site supports 15 Zee channels running on HP servers across a virtual platform that mirrors the main site.

This virtualised solution, said Amitabh Kumar, head of broadcasting, Zee Network, provides the main advantage of working on industry standard Dell/HP servers that can be inexpensively added at data centres or

elsewhere. "This makes it possible to run an image of the DR solution at any site worldwide," he told APB. "Secondly, the channels that are a part of DR are available in an IP format, which can emerge anywhere in the world, for example, at an offshore earth station with a simple reconfiguration of the IP links.

"Third, having a virtualisation of automation means that the automation system that is physically used to run the channels at the production site is precisely replicated, including all playlists and content. The DR system is thus always live and playing our channels at all times. However, it can also be isolated and operated independently in case of failure from the production site."

With Imagine Communications' support, it has meant that Zee's live channels stay on air, said Kumar, irregardless of the unforeseen circumstances the network may face during the day-to-day running of their facility."

Versio, a 100% software running on commercial off-the-shelf (COTS) IT platforms, lies at the heart of Zee's remote facility in Mumbai, and works in tandem with the D-Series playout automation system, a highly scalable solution that provides



Imagine Communications' cloud-native business continuity solutions is ensuring that Zee's live channels stay on-air, according to Amitabh Kumar (left), head of broadcasting, Zee Network.

device control for linear playout channels and manages the movement of file-based media to multiple delivery platforms. The D-Series Remote Schedule Synchronization (DRSS) feature enables both the primary and backup Zee sites to run in sync.

Brick Eksten, chief product officer, Imagine Communications, said: "Zee Entertainment Enterprises is one of the most innovative media companies in the region, and among the first to transition operations to a fully software-centric model utilising COTS equipment.

"It is no surprise that ZEEL is one of the first media companies operating in the Indian subcontinent to recognise the cost and efficiency benefits of cloud-native solutions, and to identify business continuity operations as a starting point for the adoption of a next-generation architecture."

PHOTO CREDIT: ISTOCK BY GETTY IMAGES



Nielsen is continuing to help equip media planners with the ability to evaluate VoD opportunities and reallocate their media mix accordingly.

## Nielsen adds VoD Content Ratings into media planning tool

Nielsen has announced that its syndicated Video-on-Demand (VoD) Content Ratings from nine networks, including Turner and Discovery, will be featured as an enhancement to Nielsen Media Impact — a tool designed for media planners to estimate the impact of their plans on audience reach, sales and brand equity before committing investment.

According to Nielsen, the addition of VoD Content Ratings in Nielsen Media Impact will equip media planners with the ability to evaluate the VoD opportunity among participating networks, and appropriately reallocate their media mix based on Nielsen's broad range of advanced behavioural and purchase-based audiences profiles, such as Nielsen MarketBreaks and Nielsen Homescan Segmentation.

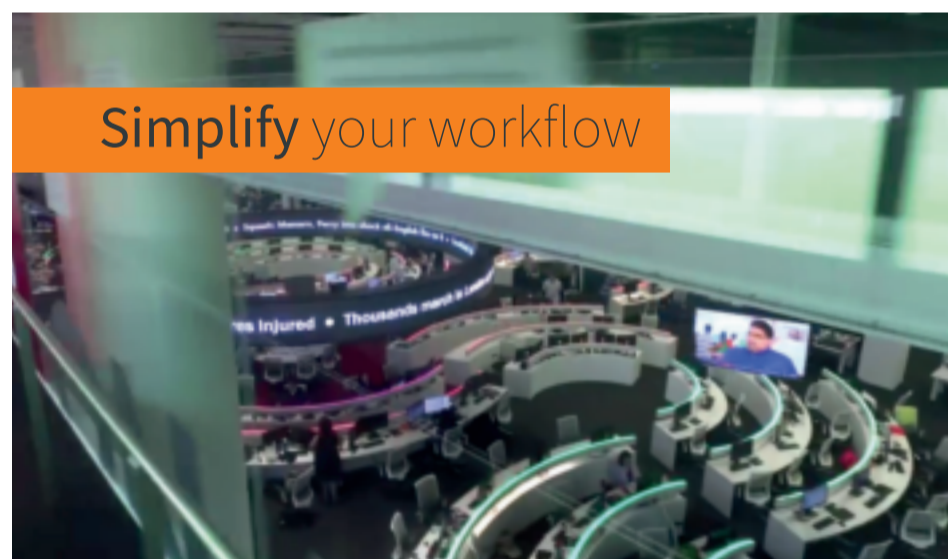
Peter Sedlarcik, EVP, head of insights and analytics, Havas Media Group, said: "As audiences continue to migrate towards on-demand viewing options, third-party measured VoD consumption data in tools like Nielsen Media Impact will give media buyers better insight into how these

potentially valuable audiences could play an effective role in brand communications strategy.

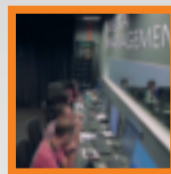
"Each layer of data like this that sheds new light on how we best connect our clients' brands to their target audiences is progress, and we look forward to a broader view of the VoD audience market as more networks make their data available."

Launched in 2006, Nielsen VoD Content Ratings is a key component of Nielsen's total audience measurement strategy, and provides comparable metrics with the same set of characteristics as live and time-shifted TV. This, according to Nielsen, enables media planners to do a direct analytical comparison to linear TV.

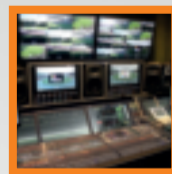
Howard Shimmel, chief research officer at Turner, concluded: "We know that VoD content is valuable, and attracts a different fan than linear TV. Having the ability through Nielsen Media Impact to illustrate the reach and impact of VoD schedules, alone and in combination with linear TV, is an important step."



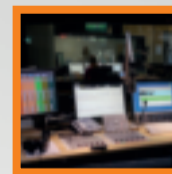
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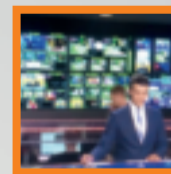
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# Surfing the OTT wave

It is undeniable: consumer viewing patterns are changing all around the world. Once dominated by a TV set in the corner of our living rooms, increasing amounts of media are being consumed on different devices, in different contexts. Nothing new here, you might say.

But how does a modern broadcaster adapt to this trend? All modern broadcasters have over-the-top (OTT) offerings, are active on social media, and target specific consumers with niche services. They generally follow the principle that “if it has a screen, or is connected to one, and can display video, we need to be on it”. What is the solution? Throw money at the problem?

Today’s broadcaster does not typically have the resources to spend extensively to address OTT and streaming requirements, but making this happen in an economically viable manner is far from easy. Broadcast is easy — use DVB: all the systems interoperate; they all fit together. The technology is readily available, and by-and-large reasonably priced.

OTT is quite a different story. Can I encode my content once and make it available on any device? The answer is no. MPEG-DASH helps, but it is not universal across all devices. How do I ensure that my systems will work with the digital rights management (DRM) systems increasingly a pre-requisite for licensing premium content?

These couple of issues are just the start, there are many others.

Interfacing with different network providers is complex, ensuring that you have access to

reasonably priced and reliable content delivery network (CDN) services is another issue. And all this costs a lot of time and money. All this would be easy if OTT services generated lots of revenue. Alas, they do not for most players in the market; not yet at least.

HbbTV tries to help by providing an open, interoperable platform in TV sets for OTT services. But it is not perfect, and has to live in a crowded playing field alongside proprietary offerings. Not all broadcasters have compelling HbbTV offerings, even in markets where it is well established. This is a shame, but the situation is improving.

It has to get easier, does it not? Would it not be great if there were a DVB-like set of solutions for OTT services, where content could be purposed once for the range of devices in a broadcaster’s market, and then there would be a standardised set of interfaces for distribution of that content?

Well, that is what we are trying to do in DVB now. It is a challenging task, but stressing the broadcaster’s interests is what we are good at, so let us start there.

In addition to the technical challenges, there is a growing realisation that the business models that drive broadcasting are changing. The growing need to surf the OTT wave drives the industry to seek better and more interoperable solutions. DVB alone cannot do it, but fostering close relationships with other stakeholders working on solutions like W3C, 3GPP, MPEG, and so on, will help.

DVB is currently working on targeted advertising, adaptive streaming using multicast

and other areas in addition to its more traditional broadcast distribution means. With HbbTV a key stakeholder in DVB’s future, it has fostered a close relationship, and is working jointly, with that organisation in the area of testing and promotion of its specifications.

Will you see DVB logos on the broadband infrastructure in broadcasters going forward? We would like to think so. As with all new initiatives, we need to stay true to our values: have faith in our ability to develop quality solutions that any vendor can implement at reasonable cost, and ensure that all stakeholders are involved in the work.

It is a fun journey already, and we have only just started. □



**PETER  
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