

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

BIOS

TUESDAY 26 JANUARY 2021 (08:55 – 17:30 CET)

09:00 **Welcome**



Antonio Arcidiacono is the EBU's Director of Technology & Innovation. He has extensive experience in conceiving, developing and taking new products and services to market. He is an internationally acclaimed expert in digital television, satellite communications, IP-based multimedia services and mobile telecommunications. With strong knowledge of the European market, he has worked closely with the leading players in the fields of Digital TV and Multimedia Services, and with European institutions at a technical, standardization, regulatory and competition level. Antonio was Director of Innovation, and a Member of the Management Committee, at Eutelsat from 2008 -2018 where he was responsible for launching innovative IP based satellite services. He joined Eutelsat in 1990 and took part in key phases of its development from an international organization to privatization in 2001 and to the IPO in 2005. Before working at Eutelsat, Antonio worked for the European Space Agency and started his career working for Telespazio and Selenia Spazio. He has a Doctorate in Electronics & Telecommunications Engineering from the University of Pisa.

Hans Hoffmann (PhD) is EBU Senior Manager and head of unit on media fundamentals and production technologies in the EBU Technology and Innovation department. He has been for 9 years with the Institut fuer Rundfunktechnik (IRT) as research staff in new television technologies until moving to the EBU in 2000. In the EBU he has been leading many activities on media integration, production technologies, technology evaluations, and he established the EBU HDTV testing lab, and work with EBU Members on IT based digital workflows and open innovation strategies. More recently he and his team looked at emerging technologies such as immersive media (UHD, NGA), AI-Data, EU 5G projects, IP and cloud-based media.



Hans is the current president of the SMPTE for 2021-22 ("the global home for media professionals, technologist and engineers"). He has been author of many EBU Technical documents; IEEE papers and is a standing speaker and contributor to international conferences and recipient of the 2020 Richard Theile Medal.

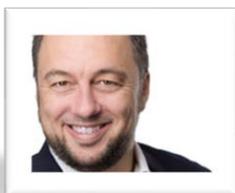
KEYNOTE SESSION

09:10 **Think cloud first**



Cristina Gomila is Sky's Managing Director Content Technology & Innovation.

09:40 **AI for bias detection in news**



Grant Franklin Totten is the Head of Media & Emerging Platforms for Al Jazeera Media Network. He is passionate about empowering newsrooms and journalists to tell more compelling stories to its audiences more efficiently through applying Data Science, Artificial Intelligence & Machine Learning and other emerging technologies in useful ways to radically transform media workflows and provide intelligence across the media lifecycle from contribution to distribution from content creation, curation, Media Asset Management, Production, Distribution and Audience Engagement.

Grant has worked in the Data Science space for over 23 years and has founded and supported multiple startups throughout his career.

Preslav Nakov is a Principal Scientist at the Qatar Computing Research Institute (QCRI), HBKU. He leads the Tanbih mega-project, developed in collaboration with MIT, which aims to limit the effect of "fake news", propaganda and media bias by making users aware of what they are reading, thus promoting media literacy and critical thinking.



PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

10:10 Why 2021 will be the most disruptive year yet for the media industry



Mark Harrison (DPP) is CEO of DPP industry association.

SESSION 2: USER STORIES

11:10 Cardiff – experiences after going Live IP



After nearly 10 years from inception to delivery, the BBC's first IP broadcast centre at Central Square, Cardiff has been completed. This presentation discusses the expected benefits, challenges and realities of deploying the largest SMPTE 2110 installation built to date.

Roger Crothers BSc (Hons) MSc CITP CEng

Roger has worked in Technology for over 30 years in a variety of different industries including Manufacturing, Logistics, Software and Local Government. The last 17 years he has worked for BBC Wales and is currently Senior Head of Engineering & Operations where he is responsible for the specification, delivery and support of technology at all BBC sites in Wales. His main focus is the delivery of BBC Wales' new high tech broadcast centre based in Cardiff, Wales which will be one of the most advanced broadcast centres in the UK. Most of the site is now live and it is believed to be the largest SMPTE 2110 installation built to date. He is currently focusing on re-skilling the engineering team to ensure they are equipped to support an IP broadcast operation.

11:30 Review of 2020 IBC Accelerator Media Innovation Projects



IBC's Accelerator programme featuring eight innovation projects delivered in 2020.

Muki Kulhan is an award-winning Executive XR Producer & Creative/5G Technologist with over two decades creating innovative XR, R&D and executive strategies for broadcasters & brands, including 10 years spearheading MTV's digital platforms in the 00's and producing BBC's first 360VR series for The Voice UK. More recent XR/R&D innovation clients include Bose, Mozilla, The National Gallery and Red Bull. As a global in-demand speaker and chair, Muki also sits on several industry advisory boards and forums, such as SXSW, IBC, Abbey Road Spatial Audio Forum, EU's Horizon2020 XR4ALL, British Screen Forum, CyberXR Coalition, Women in Immersive Tech and more.

Mark Smith has been at the forefront of the digital revolution since the early 1990s, playing an integral role in the establishment and growth of the GSMA, the mobile industry's principle global trade association, over more than two decades. As Marketing Director at the GSMA, he led communications globally to support the roll-out of digital mobile networks from 2G to 5G across and was integral in the acquisition and growth of the mobile sector's flagship global event, the Mobile World Congress (MWC). Mark is currently an advisor on Media, Telecoms and Technology for the International Broadcasting Conference (IBC) where he has created and is leading the development of the IBC Accelerator innovation Programme and is a member of IBC's Technology Innovation Advisory Board. He is also a Consultant to the telecoms association, the TM Forum, a Non-Executive Director at Ofcom's Advisory Committee for England, and is a Board Member and Trustee of the Henley Festival, a music and arts festival that attracts an annual audience of 30,000.



11:50 Flexible workflow learnings from Control Room 42



In 2020, RTBF created Control Room 42. This prototype demonstrate a new way of integrating control rooms, based on software technologies and user-centric agile methods. What did they learn ? What could be a software future for control rooms, in the age of media convergence ? Discover the concept of a Universal Control Room, and what it could bring to live production.

Hugo Ortiz is an Innovation Officer at RTBF focusing on live productions. He strives to reinvent the way broadcasters produce content, whether it's cloud-based or by using new software and ip based control rooms.

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

12:10 Digital assistants' impact on media creation



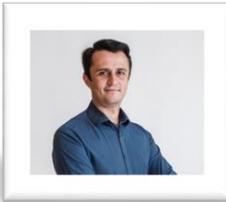
Chris Dix is the Head of Technology Transformation for Audience Products at the BBC. He is a technology leader experienced in technology design, leadership, product development, delivery and strategy. Has a proven track record of operating within enterprise businesses or start-ups within multicultural organisations spread across the globe. He's an innovative thinker engaged in transforming ideas and technologies into next generation solutions. A career spanning over 20 years in the communications, broadcast and media sectors. His specialities lie in the Media and Entertainment industry where he has a proven track record in providing vision and leadership and brings a broader perspective to media and entertainment supported by world-class talent.

SESSION 3: THE BIG CLOUD DEBATE

The big cloud providers will share their vision of how media is produced live in the next FEW year, includes key use cases and a discussion of the needs for interoperability, required standards, new technologies on the horizon, and business models.

13:30 SETTING THE SCENE

The chairs of the EBU Hybrid and Cloud Production group discuss new workflows and value added by the cloud.



Conrad Gouws has been working in broadcast technology for 13 years. Conrad joined RTÉ in 2014 as a broadcast systems engineer, and is currently working as RTÉ's Technical Architect. Along with Markus Ostertag from SWR Conrad chairs the EBU Hybrid and Cloud Based Production group.

Markus Ostertag is a member of the innovation and strategy team of Südwestrundfunk/Germany and has more than 30 years of experience in the broadcasting sector. After his career in broadcasting as a software developer, product marketing and system solution manager, he joined the Südwestrundfunk in 2003 and directed many IT-based projects in



production, archive and program distribution. Together with Conrad Gouws from RTE/Ireland he leads EBU's "Hybrid and Cloud based Production" working group.

13:45 AZURE Approach to Live Production



Microsoft Azure CTO for Media and Entertainment Hanno Basse will present Microsoft's approach to establish a thriving, partner-led ecosystem for content production and distribution in the cloud. We will cover our overall platform vision, share some thoughts about industry standards and discuss some key use cases related to distributing live channels and events on Azure.

Hanno Basse, chief technology officer, Microsoft Azure Media and Entertainment

As CTO for Azure Media and Entertainment Hanno Basse works with customers, partners, industry groups and vendors to bring Microsoft's cloud, edge and AI technologies to bear on today's problems and tomorrow's opportunities. His current focus is on content production and post-production workflows for Studios and their surrounding ecosystems.

Prior to joining Microsoft, Hanno was the chief technology officer (CTO) of 20th Century Fox Film Corp. At Fox, Hanno and his team of engineers worked on next generation entertainment technologies like High Dynamic Range and Ultra-HD as well as Virtual/Augmented Reality, innovative production technologies and workflows and were involved with other industry initiatives, including Content Protection, Immersive Audio etc. He earlier spent more than 14 years at DIRECTV, ultimately as senior vice president of broadcast systems engineering, with accomplishments including the 2005 successful launch of the largest HD channel rollout at that time and the 2009 implementation of DIRECTV's video-on-demand infrastructure. Hanno began his career in 1991 as a scientist-engineer at the Institut für Rundfunktechnik (IRT) in Munich, Germany, and worked as a systems engineer at ProSieben Media AG, also in Germany.

Hanno is a board director of Live Planet Inc. and serves on the advisory board of Vionlabs, AB. In early 2019, he was appointed chairman of the Infinity Festival. From 2015 – 2017, Hanno served as the first president and chairman of the board of the UHD Alliance. He also formerly served as chairman of the board of directors of the Entertainment Technology Center at the University of Southern California.

He has been awarded 28 patents and was named a Fellow of the Society of Motion Picture and Television Engineers in 2014. Hanno is a member of the Academy of Motion Pictures Arts and Sciences.

14:05 AWS Approach to Live Production



Claire will take us through her experiences of (a) why customers are coming to AWS to ask about live production, (b) an example cloud architecture that AWS customers are using today for live production, and (c) a short demo of live production running on AWS

Claire Southey is a Solutions Architect with Amazon Web Services. She works with global media customers migrating complex broadcast workloads to cloud.

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

14:25 NVIDIA Approach to Live Production



Rich Hastie currently is a Senior Business Development Director for NVIDIA (previously Mellanox which was acquired) specializing in Video, Cloud and Edge use-cases.

Richard has worked across Information Technology for over 25 years in a variety of different verticals including Telecommunications, Financial Services, Cloud Services and Media and Entertainment. He currently focuses on Media use-cases across the cloud, on-premise and edge landscapes. He has worked in and around the broadcast production industry for nearly 10 years. During this time he has been at the forefront of the digital transition to IP-based networking, playing a key role in the establishment and growth of Studio Video over IP.

His main focus is supporting customers and partners deploying leading video and edge solutions for all markets. He has a strong passion for reducing customer costs and improving business agility. He sees software-defined broadcast as the future and operating agnostically across on-premise, hybrid and cloud infrastructures as being the key to optimising and democratising the future of broadcast and content creation.

He represents NVIDIA in several bodies including SMPTE, AMWA, VSF, AIMS with the goal of driving and accelerating the adoption of software-defined broadcast ecosystems.

In a prior life, Richard was a keen skydiver and has had the honor of parachuting into Manchester United's stadium...

14:45 GOOGLE Approach to Live Production



Buzz Hays is one of the world's leading experts on advanced imaging production and technology in the media and entertainment industry. Buzz and his team are responsible for Google Cloud's Content Creation Solutions development in the Media and Entertainment Vertical. He works closely with the top M&E customers of Google Cloud to tailor and build solutions to transform traditional methodologies into cloud native workflows from production to post-production to archive migration. Buzz has been involved in technology for media and entertainment for over 30 years with Google, Lytro, Sony, and Lucasfilm THX. He has produced numerous film and television projects for Disney, Paramount Pictures, Sony Pictures and Warner Bros. He is a member of SMPTE, he is the founding Chairman of the Advanced Imaging Society, and he is a member of the Academy of Motion Picture Arts and Sciences where he serves on the Science and Technology Council.

16:20 Deploying Technology - Why Choose Standards?



In the cloud based era - why are the cloud vendors proposing new standards? A mini technology documentary.

Bruce Devlin is the SMPTE Standards Vice President, founder of Mr MXF and has enjoyed C-level positions at media companies over the years. He literally wrote the book on MXF and is a recognised world expert in media files and formats. Checkout his free Bruce's Shorts video series to improve your skills in the business of file based technology.

16:40 Security in the cloud – do we have to worry?



An overview of cybersecurity risks and best practices, when using Cloud service

Lucille Verbaere joined EBU as Senior Project Manager, coordinating Media Cybersecurity activities. She has 20y-experience in Cybersecurity, Telecommunications, Air Transport and Semiconductor industries: she started as an R&D engineer at ST Microelectronics, doing research on wireless telecom systems (Today's IoT domain). Then Lucille joined SITA as program and product manager for infrastructure and cloud-based data management services to airports and airlines worldwide. In her last position at ID Quantique in Geneva, Lucille was responsible for a portfolio of cybersecurity products, based on quantum physics.

17:00 Federated digital infrastructure – GAIA-X



Towards a European GAIA-X Hub for media

Jesse Robbers is at present Sr. Business Consultant at the Dutch independent research organization TNO. With specialism in the field of Digital Infrastructure, Media, Internet and Cloud. Jesse is coordinating the GAIA-X (Hub) Developments in the Dutch market. Besides his activities in Digital Infrastructure & Media, he is "Co-Founder & Director" at "Quantum Delta NL". This new institution was recently established by the Dutch quantum ecosystem of companies, knowledge and governmental institutions, to accelerate the leading role of the Netherlands in quantum technology incl. building the first In the past Jesse was CCO at the "Amsterdam Internet Exchange (AMS-IX)" and "Technical Director Benelux" at "Ericsson Broadcast and Media Services (now RedBee Media)". He fulfilled various roles at KPN, focusing on media propositions and internet distribution networks. Jesse has held several (Non-Exec) positions in organizations to stimulate new international and joint industry developments, like "Digital Infrastructure Nederland (DINL)", the "Dutch Media Hub (DMH)" and the "National Agenda Quantum Technology (NAQT)".

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

17:20 Summary of the session and next steps for the EBU



Ievgen Kostiukevych is a member of the EBU Technology & Innovation team. He has gained more than a decade of experience in the broadcasting and sound production industry, including experience in change management, solutions architecture and AoIP integration. He is working on topics of IP networks, media over IP, PTP, networks programmability and automation, etc. Ievgen is a member of SMPTE and AES.

WEDNESDAY 27 JANUARY 2021 (08:55 – 16:10 CET)

KEYNOTE

09:00 The importance of diverse talent



Why is diversity in our sector so important and what do we need to do collectively to ensure the industry changes?

Carrie Wootten is the Managing Director of Rise, an advocacy group for gender diversity within the broadcast technology sector. Its aims are to open up more opportunities for female broadcast professionals through its award winning mentoring programme, 'Rise-Up' – its new outreach education programme, regular networking events, as well as celebrating achievements through the annual Rise Awards, held at IBC. Carrie has worked extensively across the media and broadcast landscape, developing and delivering commercial business strategies, as well as attracting high profile partnerships for educational institutions such as Ravensbourne University, where she spent 7 years within a senior management role.

TUTORIAL

09:30 Hands-on NGA production (EAR Production Suite)



The EAR Production Suite is a set of professional production tools that allows creation of Next Generation Audio content that is compatible with all major NGA systems. The software is free and open-source and uses international standards. It was developed by the EBU Audio Systems group.

Chris Pike is a Lead R&D Engineer at BBC Research & Development, where he works in the Immersive and Interactive Content group. Chris' work focuses on new audio technologies for more immersive and personalised listening, including Next Generation Audio broadcasting and virtual and augmented reality experiences.

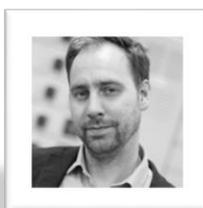
Michael Weitnauer joined IRT as Audio Research Engineer in 2011.

His current activities include the development and introduction of object-based audio as the new audio standard for media production and consumption and the coordination of IRT's 'Next Generation Audio' activities. Besides audio coding algorithms and web audio technologies he is also engaged in spatial audio recording and in the improvement of speech intelligibility for hearing impaired people. He coordinated IRT's activities in multiple EU funded projects like ORPHEUS or ROMEO that dealt with the introduction of object-based audio for the broadcast community in Europe. Michael Weitnauer is also active member and chair of standardization activities from ITU-R, EBU, W3C and DVB subgroups focussing on 'Next Generation Audio'.



SESSION 6: SUSTAINABILITY

10:45 Sustainability Targets & Progress within Daytime



Tim Guilder - Tech Manager for ITV Daytime - which represents four ITV1 daily shows - Good Morning Britain, Lorraine, This Morning & Loose Women.

11:05 Remote production

Emission reports and technology perspectives.

Cédric Lejeune (Workflowers)

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

SESSION 7: AI FOR PRODUCTION

11:25 MCMA: Building complex workflows to transform your media



Loic Barbou (Bloomberg) is the chief architect for Bloomberg Media. He is a renown pioneer in the media world and has led to the creation of new industry standards and concepts. His activities include designing new media technologies to optimize media production and distribution, or to create media platforms expanding market type and reach. Prior as the founder and leader of the Triskel organization, he has assembled a consulting group composed of the best experts in the field of media technology services. A technologist at heart, he has mentored and made best of breed system implementation accessible to teams across many organizations. His background spans several area including AI, system architecture, software design and implementation.



Joost Rovers (Rovers) Experienced Senior Software Engineer with a demonstrated history of working in the broadcast media industry. Strong engineering professional skilled on various platforms and computer languages, nowadays mainly focused on serverless computing.

Evan Verney-Fink (Triskel) 10+ years providing consulting services and products for media companies.

Alexandre Rouxel is a Data Scientist and Project Coordinator at the EBU in the Technology and Innovation department. At the EBU, he is coordinating projects on metadata, cloud computing and machine learning for media applications. Before joining the EBU, he cumulated 20 years' experience as

algorithms and systems design engineer acquired within successful Nasdaq listed companies. He has extensive experience in developing standards and innovative products from research to market.



11:45 Future of AI in live streaming

What AI can do for the broadcast industry now and in the future.



Mark Andrews (Mobile View Point) Over twelve years working for innovative technology companies and start-up's in the broadcast and production space.

Michel Bais has built up Mobile Viewpoint from a single project 10 years ago into a company selling mobile cellular encoders to a global network of broadcast and production companies for their live streaming needs. Both Michel and Mark have a huge amount of experience in the live production and broadcast market, and are now setting their professional goals on using

AI to allow live streaming of productions that were previously not possible due to lack of budget and resource.



13:00 MeMAD project

An overview of the findings from the EU Horizon2020 MeMAD project on the use of A.I. technologies in media production, including for subtitling, content retrieval and content annotation.

Dieter Van Rijsselbergen is co-founder and CTO at Limecraft. After obtaining his Master's degree in Computer Science, Dieter joined IMEC/MMLab. As a PhD researcher, he specialised metadata-based automation of audiovisual production workflows. More specifically, he had a first hand in a range of ground-breaking innovations that eventually lead to the incorporation of Limecraft. Now, as Limecraft's CTO, he deals with architectural decisions, research & development, and technology choices to drive Limecraft's platform product and stand-alone applications. Together with their clients, Dieter designs and builds practical solutions and workflows using Limecraft technology to help them produce better content more efficiently.

13:20 AI in Media Production



The AI in Media Production project is researching ways that AI and Machine Learning will impact the future of production.

Stephen Jolly leads the AI in Media Production workstream at BBC R&D. He has worked for the BBC since 2004, in areas as diverse as digital radio, the Internet of Things and image quality advances.

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

13:40 Synthetic Media



Jouni Frilander (YLE) studied computer science at the Commercial Institute of Helsinki and graduated on 1994. He has developed broadcast related IT systems since early 1990's. His experience includes metadata management, information retrieval, digital archiving, computer aided radio, workflow automation and video production. He has worked in various roles including System Analyst, Systems Manager, and Development Manager. Currently he works as Development Manager at Finnish Broadcasting Company's Operations Division

14:00 AI-driven live feed recomposition from TV 16:9 to Mobile 9:16



Learn how Wildmoka uses AI/ML to transform live video from landscape to portrait mode.

Thomas Menguy is the CTO and co-founder of Wildmoka, a leading cloud video production and distribution platform for digital created in 2013. Prior to Wildmoka, Thomas has held a number of senior management positions in various software companies in the mobile industry (Texas Instrument, Openplug, Cadence) and in the telecom industry (Alcatel-Lucent).

SESSION 8: RADIO PRODUCTION (PROUD TO PRESENT)

14:50 Future of radio apps: Merging Real-time metadata with personalized cloud streams.



Music streaming services pose a challenge for radio, and SWR have been working on a solution to bring radio into the digital age.

Daniel Freytag (SWR)

Christian Hufnagel (Südwestrundfunk, Germany) With a strong background in radio and voice, Christian Hufnagel is working at the SWR Audio Lab since 2015 as a radio production & technology consultant. He is in charge of the coordination of future radio projects and leading the development on smart speakers and voice



interactions across the ARD Network in Germany. Christian is project lead for the new SWR radio app platform for radio, live and on-demand, music streaming and podcasts and is specialized in distribution, UX, strategy and content.

15:10 Yellow Jacket protest in Object Based Audio



New storytelling formats using object-based audio.

Hervé Dejardin is project manager in the audio innovation department of Radio France. Since 2012, he has been working on the development of multi-channel, binaural and object-oriented sound. He has contributed to various research consortia including BiLi (Binaural Listening), in which Radio France was a partner.

He is one of the actors at the origin of the "Hyperradio NouvOson" website which displays more than 300 immersive audio contents. Most of this content can be listened to in binaural with headphones or in 5.1

He has worked on immersive audio productions of VR 360 content. Co-produced with Radio France and Arte and is now working with the composer Molécule for the Acousmatic 360 tour. First tour by an artist of the electronic scene with a 360° sound system. For this tour, he developed a software solution that allows to animate the sounds in real time. He is currently working with musician Jean Michel Jarre on an immersive project soon to be available on FIP radio and an expert in the field of spatialized audio.

Hyperradio website <https://hyperradio.radiofrance.com/son-3d/>

15:30 LIVA & Touchdesigner for radio production



Using the Touchdesigner software for large stage shows, interactive art installations, and innovative experiments in media.

With a strong background in radio, **Floris Daelemans** is working on innovative radio solutions at VRT. Starting out as an enthusiast by building his own FM transmitter when he was eleven, radio and technology always were a perfect match for him. After many years of both producing and hosting national broadcast radio shows, Floris chose to finally do something on the other side of his spectrum. Today he is an innovator who works hard on defining the future of radio, enhancing the many strong aspects of broadcast radio with the new opportunities of the Internet.

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

15:50 Cloud-based radio production, contributing and delivering



What moving from legacy radio production to cloudbased systems means for production and studio environments.

Mikko Nevalainen (YLE) 22 years of broadcasting experience with Yle. In the beginning more on the mediaproduction and the last 15 years on the IT.side of the audio&radioproduction systems.

THURSDAY 28 JANUARY 2021 (08:55 – 13:35 CET)

KEYNOTE

09.00 Virtual production workflows – the "Ripple Effect" Film



A behind-the-scenes look at the virtual production workflows implemented on the short R&D film "Ripple Effect."

Erik Weaver is a specialist focused on the intersection of cloud and the M&E industry, and is currently running Virtual & Adaptive production projects for the Entertainment Technology Center@the University of Southern California (ETC). Recently, he led Global M&E Strategy for Western Digital. Prior work at ETC includes spearheading the Production in the Cloud project, which encompassed many aspects of the cloud, including transport, security, metadata, long-term storage, and the creation of an agnostic framework that unites key vendors and studios.



Kathryn Brillhart is a cinematographer and producer who leverages volumetric capture, visualization techniques, and supervising visual effects to enhance projects. For the past decade, she has helped to redefine best practices and standards in virtual production and has advocated for diversity in the film industry through her role on the Global Board of Directors for the Visual Effects Society. Kathryn is a member of the Virtual Production Committee within the ASC Motion Imaging and Technology Council.

SESSION 10: CONVERGING WORLDS

09:30 Broadcast: turning your gaming area into a home studio



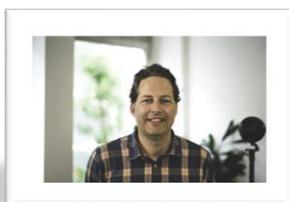
The eSports arena and game streaming sites have created a new generation of gamers and content creators that have become tech enthusiasts. High end gaming PCs now have an unprecedented level of compute power, enabling the ability to create content and live broadcasts at professional levels of quality. In this session, you'll learn more about the trends and opportunities in this part of the market, as well as some of the consumer tech driving up the quality bar for enthusiasts and pros alike.

Rick Champagne leads Global Media & Entertainment Industry Management for NVIDIA. In this role, Rick works closely with customers and industry partners in the Film, TV, and Broadcast industries to promote the advancement and adoption of new technologies. With a long history of managing products such as the Autodesk 3ds Max and Maya Entertainment Creation Suites, Softimage, Mudbox, and Painter, Rick has been in the service of Artists and Technologists for over two decades. Rick maintains

close ties to industry as a member of the Visual Effects Society, HPA, Royal Television Society, serves on the Board of Governors of the Advance Imaging Society, and as a committee member of ASWF. Rick holds a Master's in Business Administration.

09:50 Game engines in broadcasting

How a game engine can empower the next generation broadcast studio and enrich new ways of storytelling.



Greg Young is product owner at VRT Innovation and creative producer at VRT Sandbox. He works on Flemish and European research projects and initiates collaborations between startups (SMEs) and VRT brands. At VRT Sandbox, Gregg started several VR and AR projects for Ketnet, Eén, Sporza, VRT NWS, and more. Gregg is a digital pioneer in audiovisual film and television production, with a focus on immersive storytelling and interactive media. Before he started at VRT, Gregg worked as freelance creative producer for different media broadcasters, such as MTV, VIER (SBS), VTM and JIMTV.

10:10 CG animation, virtual production and real-time creative workflows



This session will focus on the use of XR Technology and Real-Time game engines in the production of animated content. The discussion with Sky XR and Cartoon Network/Warner Media will highlight the benefits of adopting this new approach over the more traditional approach, including multi-format output, speed to market, better creative freedom etc, and also showcase their shared success of the IBC Accelerator POC.

Muki Kulhan is an award-winning Executive XR Producer & Creative/5G Technologist with over two decades creating innovative XR, R&D and executive strategies for broadcasters & brands, including 10 years spearheading MTV's digital platforms in the 00's and producing BBC's first 360VR series for The Voice UK. More recent XR/R&D innovation clients include Bose, Mozilla, The National Gallery and Red Bull.

As a global in-demand speaker and chair, Muki also sits on several industry advisory boards and forums, such as SXSW, IBC, Abbey Road Spatial Audio Forum, EU's Horizon2020 XR4ALL, British Screen Forum, CyberXR Coalition, Women in Immersive Tech and more.

Marc Goodchild Marc Goodchild is Head of Digital Content Strategy & Product, Kids, EMEA, WarnerMedia and has been with the company since January 2017. In this role, he is responsible for the overall content strategy and digital content vision for EMEA, working in close collaboration with all regional content and digital teams. He also leads the EMEA Digital Product group for the Kids division and provides support and editorial guidance to the local heads of digital, alongside the central research, commercial, advertising sales, marketing, PR and franchise management teams.

Goodchild is an award-winning television producer and digital executive with a 20-year track record in broadcast, production and the start-up community. He previously worked with UK start-ups where among other achievements he pioneered a new second-screen system for kids shows, and most recently a family app gifting platform. Prior to this, his career includes a mix of senior director, producer and executive roles in TV and Digital at Disney and the BBC, and on commissions for Discovery and Channel 4. He has also consulted for independent production companies including Jamie Oliver, Zodiac Kids and Lion TV.

Goodchild has a BA Hons. in Politics from the University of Nottingham and a post-grad in Broadcast Journalism from City University.

Matthew McCartney Head of Immersive Technology at Sky focusing on VR/AR viewing experiences within broadcast. Oversaw the launch of Sky Worlds for the Oculus Quest in October 2020.



10:30 Broadcaster archives in "games"



A way to reach and engage with young people?

Marco Mazzaglia graduated in 2000 in Computer Science at the University of Turin with a thesis on Artificial Intelligence. After working for 7 years in fleet management for the Italian Police Force and the Ministry of Interior, he was IT Manager and Video Game Evangelist for Milestone from 2008 to 2013, dealing with the design and management of development systems and architectures for online games. In 2015 he worked as IT Manager in Ovosonico. Since 2016 he holds the roles of Business Developer and Video Game Evangelist for Synesthesia and MixedBag, working on original titles such as "forma.8", "Avery" and "Waking Violet" and conversions (multiplatform PC, console and iOS); the last game released was "Secret Oops!", released for Apple Arcade in 2020. In February 2020 he

participated in TED with the talk "Beyond Gaming: the video game as you've never seen it". Today he is Technical Director of the Academy and Video Game Evangelist at Synesthesia and he is an adjunct professor of "Game design and Gamification" at the Polytechnic of Turin in the Master's degree course in Cinema Engineering and Computer Engineering.

SESSION 11: FROM THE MEDIA LABS – WHAT IS HOT IN R&D

11:20 BBC R&D



Andy Conroy the Controller, BBC Research & Development. He leads a 200-strong team of research engineers, scientists, ethnographers, designers and producers based in London and Salford, UK. BBC R&D role is use technology to help the BBC stay relevant over the medium term, say 5-10 years. Andy started his career in radio, progressing from report to producer and then editor. He started working on interactive services in 1997 as a general manager. And he has never really left.

Andy was appointed Chief Operating Officer, BBC Digital Division in 2012. He was responsible for the operational running of the Division, which at the time numbered 1,300 people as well as the BBC's online service, bbc.co.uk. He joined the world-renowned BBC R&D in 2015. Andy is not an engineer and continues to be amazed by their creativity and resilience.

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

11:35 **NHK STRL**



Kohji Mitani joined Japan Broadcasting Corporation (NHK) in 1987. He has been helping develop 8K ultra-high-definition television at Science & Technology Research Laboratories (STRL) since 1995. In particular, he was in charge of developing 8K camera systems. He moved to NHK headquarters in 2010 to develop a practical 8K production and broadcasting system. He was then appointed Deputy Director of STRL in 2016, and he was appointed to his current position, Director of STRL, in 2018. He is currently promoting research and development for future immersive media.

He received a fellow grade of membership from the SMPTE (Society of Motion Picture & Television Engineers) in 2010.

11:50 **RAI CRIT**



The 15' video will describe activities of Rai R&D in three main areas: Artificial Intelligence, Immersive experiences and 5G

Gino ALBERICO joined RAI Research Centre in 1988 where he has been involved in projects ranging from the programme distribution over broadcasting and broadband platforms, to OTT services for connected TVs, accessibility services and personalized services in Digital Hybrid Radio. Since January 2020 he has been appointed Director of RAI R&D and he is also member of the EBU Technical Committee.

12:05 **Fraunhofer IIS**



Harald Fuchs is the head of the Media Systems and Applications department in the Audio and Media Technologies division of Fraunhofer IIS.

He is also product manager for MPEG-H Audio, specifically taking care of enabling MPEG-H as a next-generation audio codec in the complete end-to-end workflow from recording to production, delivery and playback.

Harald Fuchs joined Fraunhofer IIS in 1997 as research engineer and software developer for video codecs and multimedia streaming systems. From 2002 onwards, he concentrated on media system aspects and standardization, contributing to several standardization organizations, including MPEG, DVB, ATSC, DLNA, OMA, OIPF, ISMA and HbbTV.

Since 2011 his main interest is on object-based audio, especially focusing on how media applications can benefit from object-based and next-generation audio. As a Senior Business Development Manager, Audio for TV Broadcast, he has been taken specifically care off enabling MPEG-H Audio in broadcast and streaming systems, like ATSC 3.0 and DVB. From 2013 to 2018 he was group manager semantic audio coding, with the main target of enabling object-based audio for dialogue enhancement and better speech intelligibility in broadcast applications.

12:20 **Fraunhofer HHI**



Ralf Schäfer is Director of the Video Division at Fraunhofer Heinrich Hertz Institute (HHI) in Berlin where he is responsible for 100 researchers and 50 undergraduate students. He studied electrical engineering at the Technical University Berlin (TUB) and joined HHI as a researcher in 1977. In 1984, he received his doctorate at TUB in the area of digital video coding of TV signals. His research interests cover all areas related to images and video, from acquisition to display and from algorithm development to ASIC implementation. Besides his role as Division Director, he is responsible for three technology centers, the "CINIQ Center for Digital Technologies" (<http://www.ciniq.de>), the Innovation Center for Immersive Imaging Technologies - 3IT (<http://www.3it-berlin.de>) and Tomorrow's Immersive Media Experience (TIME) Lab (<http://www.timelab-hhi.com>), where smart digital solutions and immersive technologies are demonstrated.

WRAP-UP

13:05 **Wrap-up**



Andy Quested - 1985 working on many comedy, children's and documentary series, including the "iconic" Keeping Up Appearances! He also worked on the introducing of non-linear editing, stereo and widescreen production. In 1998 he moved to the technology department working on the BBC's first HD programmes including Planet Earth I and the first UHD programme, Planet Earth II.

In October 2020 Andy left the BBC but is still carrying out duties as Chair of ITU-R Working Party 6C which delivers standards for programme production and international exchange including work on Advanced Audio Systems, HDR Television and media accessibility. He also continues to lead the EBU Production Strategic Programme which works on all aspects of Programme Production including the use of AI in broadcasting and all aspects of content-based data applications, data management, archives and cloud production.

PRODUCTION TECHNOLOGY SEMINAR

AN EBU EVENT

NAVIGATING MEDIA CREATION IN THE CLOUD

Andy is a SMPTE Fellow and a member of the Standards Community as well as Co-Chair of the ITU Rapporteur Group studying Media Access Services, an evaluator for the EU “StandICT” programme and part of an accessibility programme running under the European Cooperation in Science & Technology (COST).

Phil Tudor is a Principal Engineer at BBC R&D, leading a team of researchers looking at workflows, platforms and infrastructure for production & archives. He is the chair of the EBU Strategic Programme for Infrastructures & Security and a SMPTE Fellow.

