PROGRAMME

MONDAY 15 MAY 2023 (09:45 – 18:45 CEST)

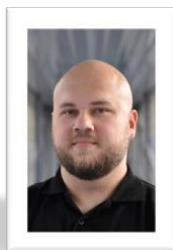**09:45 – 10:00**   **Welcome & Introduction**

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

Moderated by Ievgen Kostiukevych

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.

10:00 – 10:30   **Creativity meets emerging Tech - Nvidia generative AI for virtual production and hosting infrastructures**
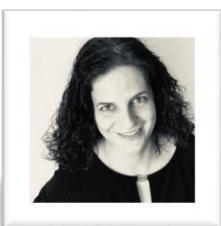
Richard Hastie currently is a Senior Business Development Director for NVIDIA (previously Mellanox which was acquired) specializing in Video, Cloud and Edge use-cases. Richard has worked across Information Technology for over 25 years in a variety of different verticals including Telecommunications, 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 an 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.

10:30 – 11:00   **Azure Open AI: Empowering the Future of Intelligent Applications**

Dive into the exciting journey of Azure Open AI and discover how it's revolutionizing the way we build intelligent applications. Learn how Azure Open AI is empowering developers to create smarter, more efficient applications that can transform the way we live and work.

Liviana Zürcher has started her career as Technical Sales Consultant for Business Intelligence and Data Warehouse at Oracle. Then, she has been working a few years as a Big Data Warehouse and Business Intelligence consultant and trainer, having projects around the globe. Finally, she has joined Microsoft Switzerland team as Senior Cloud Solution Architect for Data and Artificial Intelligence at Microsoft, where she is currently working since 2018.

Susanna Pepe is a Microsoft Data & AI Specialist with project management skills in both tech and luxury industries, also focused on sustainable and responsible AI. Susanna holds a double master's degree in Marketing Management from the University of St.Gallen and Management from Università Bocconi and she is recognized as a top student for Marketing & Sales.
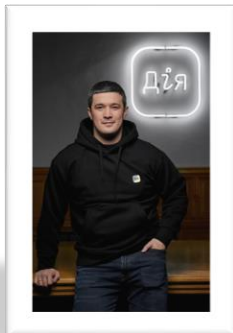
11:00 – 11:30   **Ukraine Digital Transformation experience: prior & during the war**

Mykhailo Fedorov — Vice Prime Minister for Innovations, Development of Education, Science and Technologies — Minister of Digital Transformation of Ukraine

Mykhailo Fedorov became Vice Prime Minister, the Minister of Digital Transformation of Ukraine, on August 29, 2019. He is the youngest minister in the history of Ukrainian politics. Graduated from the Faculty of Sociology and Management of Zaporizhzhia University.

In March 2023, Mykhailo Fedorov was appointed Vice Prime Minister for Innovations, Development of Education, Science and Technologies — Minister of Digital Transformation of Ukraine.

Before working in the government, he ran a business in the digital marketing sphere. In December 2019 he was appointed as Head of the Digital for Volodymyr Zelenskyy Presidential campaign.

Mykhailo Fedorov is an innovator and visioner. With the Ministry of Digital Transformation's team, the main goal is to make Ukraine the most convenient state in terms of receiving public services. In 2020, Diia project has been launched – a one-stop shop for public services & e-documents. As of now, 19 million users use Diia app. It's every second Ukrainian. Now Diia is an ecosystem with wide range of products: Diia mobile app; Diia web portal; Diia.Digital Education, Diia.Business, Diia.City etc.

With the start of the full-scale invasion of russia, the Ministry of Digital Transformation helped with launching a number of important projects – UNITED24 fundraising platform; Army of Drones project for supplying Ukrainian Army with drones; Brave1 cluster for developing defense tech solutions.

11:30 – 12:00   ***Break***

SESSION 2: CLOUDY WEATHER

Moderated by **Phil Tudor** (BBC)

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.
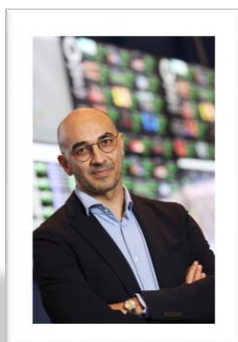

12:00 – 12:30   **Media in the cloud - where are we?**

Media applications are rapidly migrating to the Cloud, but challenges remain. What are the issues and how will they be resolved?

Ian Trow is an experienced Media, Network and Security professional with over 30 years technical and commercial experience. Currently working for Sky, Ian is Senior Manager, Emerging Technology, with responsibility for Video Quality, CODEC Optimisation, Performance, and the transition of core functionality to the Cloud. Previously with BT (Media & Broadcast), Ian was Product Manager for Compression and Cloud Solutions, with responsibility for the headend roll out of the virtualized D34 terrestrial network. Ian has previously worked for Ateme, Harmonic, Thomson, Envivio, Tandberg, Snell & Sony. Ian is author of two SMPTE courses, Media In the Cloud and Essentials of Video and Audio Coding.

12:30 – 13:00   **Paris 2024: Pros and cons of cloud for high-end events**

Mario Reis (Olympic Broadcasting Services) Experienced Director of Telecommunications with a demonstrated history of working in the telecommunications industry. Skilled in 3G, LTE, Mobile Communications, Mobile Devices, and Wireless Technologies. Since 2010, has developed services for the Broadcasting Industry with an emphasis on Transport Networks for Video, Distribution of Video over Satellite, Cloud Services and OTT Delivery platforms.

13:00 – 14:00	Lunch Break

SESSION 3: TECHNOLOGY DRIVEN MEDIA COMPANY

Moderated by **Peter Brightwell** (BBC)

Peter Brightwell leads BBC R&D's work on infrastructure for live IP production, and is a frequent contributor to industry initiatives on interoperability. He is a vice-chair of EBU's infrastructure and security SP, and chairs the Networked Media Incubator and NMOS security groups of the Advanced Media Workflow Association. (BBC)

14:00 – 14:30	**How big is your attack surface and how can you shrink it?**

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.

14:30 – 15:00	**Software-based production infrastructures – a way into the cloud**

Willem Vermost recently moved to VRT as a Design & Engineering Manager. Prior to this role, he was the topic lead on the transition to IP-based studios at the European Broadcasting Union (EBU). He received a master's degree in electronic engineering and in applied computer science. With over 20 years of experience in broadcasting, he has worked on various projects, including the multiple award-winning VRT Live IP proof of concepts, the Joint Task Force on Networked Media (JT-NM) Tested Program and started the open-source project EBU Live IP Software Toolkit (LIST). He acted as a deputy on the JT-NM admin board and the AWMA board of directors. Willem is the co-chair of EBU's strategic group on System Design & Interoperability and is an active member of SMPTE. As a faculty member of the EBU Academy, he provides training on the transition to Live-IP-based media facilities. Recent efforts at VRT focus on On-Set Virtual Productions and new workflows with Software-Based Studios.

Phil Tudor (BBC)

15:00 – 15:30	**Moving to software-based production workflows and containerization of media applications**

Famously, Marc Andreessen said "Software is eating the world". But broadcast is one big exception to this. This presentation will look at the successes and places where work is needed to be done to move processes to software and the cloud.

Kieran Kunhya is the Founder and CEO of Open Broadcast Systems, a developer of software-based encoding and decoding products for B2B sports, news and linear channel transport. He has led numerous product developments including the company's high-performance multivendor ST-2110 stack and in-house developed SDI boards. He is also an FFmpeg and x264 Open Source project developer.

15:30 – 16:00	**Live sport production in the cloud**

Live multicamera sports coverage in the public cloud.

Andy Beale is Chief Engineer for BT Sport, joining the innovative and disruptive British broadcaster at the beginning of its journey in 2012 to oversee the technology and construction of the landmark BT Sport Production Hub in the Queen Elizabeth Olympic Park. He played a pivotal role in the development and launch of Europe's first commercial live sports Ultra HD channel "BT Sport Ultra HD", and its HDR successor: BT Sport Ultimate. He led BT Sport's pioneering Dolby Atmos launch and ground breaking advances in live VR 360. Recently he has delivered world firsts in 8K TV, 8K VR, 5G remote production and is now pushing the envelope with sustainable live cloud production. Previously he was Head of Engineering for Sports Media House, Octagon, and before that delivered projects worldwide for respected system integrator IPK. Andy is co-founder of Rise Up, an IBC award winning broadcaster led STEM schools programme that aims to inspire the next generation of broadcast engineers and on the board of inclusion advocacy group Rise. Andy is a SMPTE Fellow and was named Technology Leader of the Year at the 2021 IABM awards.
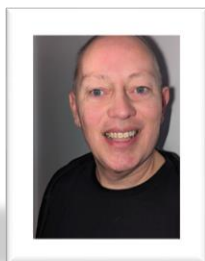
16:00 – 16:30   *Break*

SESSION 4: INGREDIENTS

Moderated by **Willem Vermost** (VRT)

16:30 – 17:00   **Asynchronous software for live production**

From the glass lens of the camera to the glass of the viewers screen, we need to do work to tell a story. Using the same technology used to scale the Internet - asynchronous processing - the benefits of virtualization can be delivered for live production. How?

Richard Cartwright is technical leader for a software team based in the UK and Canada. He has previously worked at broadcasters and manufacturers worldwide, was technical steering committee lead for AMWA, contributed to the JT-NM Reference Architecture and holds a PhD in Computer Science from Warwick, UK.

17:00 – 17:30   **Is uncompressed still needed? IP based production using ST2110 and JPEG XS.**

Introduction and demo into JPEG XS

Thomas Richter - 2000 PhD at TU Berlin, 2000-2002 Accusoft GmbH Berlin, 2002-2007 TU-Berlin, 2007-2017 University of Stuttgart, 2017-2023 Fraunhofer IIS, Member of SC29/WG1 (JPEG) since 2002.

Nisha Bhaskar (Fraunhofer IIS) is a research engineer in Fraunhofer IIS's JPEG XS team. After receiving my Master's degree in Electrical engineering and Information technology from RWTH Aachen University in Germany, I worked in the field of Machine Learning based automotive driver assistance systems for two years. I joined Fraunhofer IIS in 2021. Since then, I have been involved in the integration of the JPEG XS image coding system into professional video editing applications and interoperable file formats. My expertise at Fraunhofer IIS also includes AI based video compression.

17:30 – 18:00   **So you have a new building, what's next?**
Panel discussion featuring EBU New Builders

Moderated by **Willem Vermost** (VRT)

Sandro Furter is working as a Project Manager at SRF in Zurich. He is responsible for the IP community and the realtime IP technology. With his team, he focusses on the implementation of the SMPTE ST2110 based A/V Environment on the all-IP production facility for TV, radio and online.

Sandro graduated from FHNW University of Applied Sciences and Arts Northwestern Switzerland with a bachelor's degree in systems engineering and a specialization in realtime systems. As a holder of the IPMA Level C certification he has extended project management skills to lead large projects.

Svein Henning Skaga (TV2 Norway) Solutions Architect – Live Production.

With a background in audio, Svein has been with TV 2 Norway for the last 12 years in several positions. For the last five years deeply involved in many projects related to the transition to IP-based infrastructure. TV 2 has now a fully ST2110 based infrastructure for production in both its Bergen and Oslo facilities.

Sunday Nyamweno is a lead architect with CBC/Radio-Canada, Montreal, QC, Canada, where for the past ten years he has solved problems related to video encoding, satellite transmission, colour science, systems integration and network automation. Recently, some of his work on the MRC project has been published in the Society of Motion Pictures and Television Engineers (SMPTE) Journal. He received a PhD degree from McGill University, Montreal, in 2012, where he specialized in video compression. Additionally, he holds an MSc degree in radio frequency wireless communications from Leeds University, Leeds, U.K.

18:00 – 18:30	**SWR 5G Campus Network - Towards Nomadic Use**

Since several years, the broadcasting industry has been engaging in the standardization of 5G with regards to content distribution. Under the leadership of the EBU, European broadcasters have contributed the requirements of public services media organizations leading to what is now called 5G Broadcast. In the meantime, also the use of 5G technology for production and contribution has moved into focus. Similar to distribution the requirements for production and contribution have been included in 5G standards. However, technical standards are necessary but not sufficient to facilitate deployments. To this end, SWR has launched an innovation project, in cooperation with Smart Mobile Labs AG, to assess if and under what conditions 5G technology could be beneficial for production and contribution. Even though the project runs under the name "5G Campus Network", the focus lies on opportunities for nomadic production. After the first valuable on-premises experiences, nomadic trials under real world conditions have been conducted end of January.

Markus Berg - As Head of Broadcast and Media Systems at Smart Mobile Labs AG, he is responsible for products and services in the field of smart media production with smartphones and tablets (focus on 5G networks). Before that, he was head of the department of network technologies at the Institut für Rundfunktechnik (IRT) for over 20 years and in this role also chaired numerous EBU working groups.

18:30 – 18:45	

Closing thoughts - End of NTS day 1

TUESDAY 16 MAY 2023 (09:00 – 17:00 CEST)

NTS 2023 – UNCONFERENCE DAY
Facilitated by Eoghan O'Sullivan (EBU)

09:00 – 10:00	**Open circle – co-creation of unconference agenda**
10:15 – 11:15	**Unconference sessions – Block 1**
11:15 – 12:15	**Unconference sessions – Block 2**
12:15 – 13:15	*Lunch and demos*
13:15 – 14:15	**Unconference sessions – Block 3**
14:15 – 15:15	**Unconference sessions – Block 4**
15:15 – 16:15	**Unconference sessions – Block 5**
16:15 – 17:00	**Closing circle – session reports and feedback**
17:00	*End of NTS 2023*

DEMOS

1	**IP Flow Monitoring Solution for Broadcasting Industry (Intelligent Wave Inc)**
	Lalit Nathwani (Intelligent Wave Inc)
2	**Riedel Networks Media & Media Live Production (Riedel)**
	Timo Koch (Riedel)
3	**Asynchronous Media Framework (Matrox Origin)**

	Christophe Crespin (Matrox)	
	Richard Cartwright (Matrox)	
4	**Software-Defined Video Network (GlobalM)**	
	Paul Calleja (GlobalM)	
	Georges Bery (GlobalM)	
5	**JT-NM Tested Program Results (EBU)**	
	Pavlo Kondratenko (EBU)	