

BIOS

TUESDAY 16 NOVEMBER 2021 (10:00 - 16:30 CET)

WELCOME & KEYNOTE SESSION

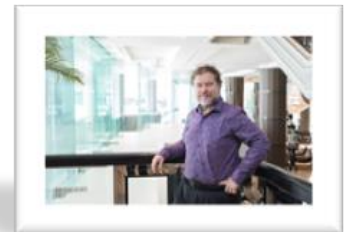
10:00 – 10:15 **Welcome & Introduction**



Antonio Arcidiacono is Director of Technology & Innovation at the European Broadcasting Union. He has extensive experience in conceiving, developing and taking new products and services to market. Since joining the EBU in September 2018, Antonio has launched several initiatives designed to leverage the collective expertise and momentum of the EBU Membership for technology innovation, deliver key building blocks for the digital transformation of public service media, and strengthen collaboration between PSM, European policy initiatives, start-ups and academic institutions. Two of Antonio's most recent initiatives are the 5G Media Action Group (5G-MAG) and EuroVOX. 5G-MAG currently counts 40 members from the industry and aims to ensure future 5G standards are fit for purpose in media production and distribution. EuroVOX is a collaborative project of the EBU and several of its Members that aims to break down language boundaries for users and content. It consists of an open framework upon which services can be built, and a set of tools for media creators, such as speech-to-speech translation. Antonio

previously worked as Director of Innovation and a Member of the Management Committee at Eutelsat; the European Space Agency; Telespazio, and Selenia Spazio

Peter MacAvock is Head of Delivery, Platforms and Services, EBU Technology and Development and DVB Chairman. At EBU, he heads the team responsible for innovation projects relating to delivery technologies, spectrum management and software platforms. Amongst other things, he is responsible for spectrum matters and high level projects related to Hybrid Radio and Television including HbbTV, DVB, RadioDNS and others. In July 2016, he was elected Chairman of the DVB Project, and retains a role as co-chair of the HbbTV Requirements Group. He is an Irish national living and working in Switzerland.



10:15 – 10:35 **Can EBU Members win the online battle?**

EBU Members are debating the best way to go forward with their online offerings: whether the future lies in app-based distribution (e.g. SVT Play) for live playout and on-demand, or whether it is crucial for survival to be present on all relevant third-party video-apps and platforms in their national market. Are proprietary apps strong enough to be the exclusive way of PSM online distribution?



Johan Wahlberg (SVT) Head of Digital Partnerships at SVT

After a Bachelor of Arts in Radio-TV from University of Houston, Johan joined SVT in 1995 as video editor for the local news station in Gothenburg. In 1991 he had started exploring the early days of Internet, a knowledge that from 1997 led to a 10-year period working hands-on with different web projects. 2010 he became Head of Distribution Strategy for SVT with a mission to align the strategic thinking regarding online distribution and broadcast. 2015 joined the SVT Commissioning Board as Head of Digital Strategy and Commissioner of Video Services for Interactive Platforms. Since 2018 Head of Digital Partnerships responsible for SVT's strategic relationships with online platforms and operators as well as trend analysis focusing on business intelligence.

10:35 – 10:55 **Will IP take over from broadcast, and what is a hybrid scenario, exactly?**

A migration to IP-based distribution across Europe will be driven by a range of forces, not just economics, and it will be a long process. In the meantime, broadcast networks have a truly important role to play.



Simon Parnall has been Principal Advisor Broadcast Technology for OFCOM since 2016. Previously Simon worked in Broadcast Research and Development, latterly for NDS as UK Vice President and for Cisco as Distinguished Engineer, and formerly for BBC R&D at Kingswood Warren. His work has primarily been in the creation and worldwide standardisation of new television and radio technologies, and he has led a number of European and Worldwide initiatives.

10:55 – 11:15 **Is the linear FTA TV model worth preserving in a broadband future?**

Johan Wahlberg (SVT), Simon Parnall (UK Ofcom), Peter MacAvock (EBU)

SESSION 1: GOING BROADBAND

CHAired BY BRAM TULLEMANS (EBU)



Before the EBU **Bram Tullemans** worked as senior policy advisor research and development at the Dutch public service broadcast organisation NPO. He developed strategies on a conceptual level and their practical implementations on topics like interactive services, second screen, connected tv's, adaptive streaming, p2p, visual radio, device specific video distribution and strategic policy work related to network neutrality and open source development. Prior to his activities in the broadcast sector he was director of the Dutch cross media department at the international publishing house IDG Communications, worked as journalist for both ICT business and consumer publications and wrote a book about digital video. Bram studied at the University of Amsterdam and Liverpool in the fields of Philosophy, Television & New Media and Computer Science.

11:30 – 11:50 TV distribution over IP networks – An end to end perspective.

BT, with BT Sport, produces and delivers live sport over broadcast and IP networks. This presentation considers what is important for the broadcaster and the user, and the requirements these place upon the network. It then considers the question What is needed to make an IP network a TV network suitable for live sport?



Simon Jones (BT) Dr Simon T Jones - TV Architect, BT Networks

Simon has been working in the field of Interactive Television and Content on Demand for over 25 years with companies in the UK such as BT, Open Interactive and BSkyB.

Simon currently works for BT Networks as a TV Architect, with architectural responsibility for the broadband distribution of BT Sport and BT TV, their consumer IPTV service.

He has contributed to the launch of most of the BT TV services including the launch of BT Sport Ultimate which delivers premium sport in UHD, HDR and Dolby Atmos.

Simon also coordinates BT's work on TV standards and represents them on the steering boards of DVB, 5G-MAG and the DTG.

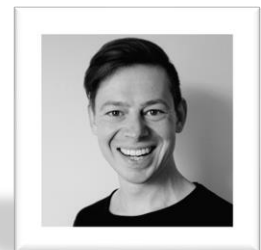
11:50 – 12:10 Effectively using quality metrics to optimize streaming at scale

Achieving a satisfying experience for online viewers that is on par with that of traditional broadcast while minimizing costs remains a key challenge. This presentation discusses the differences between technical service quality (QoS) on the one hand and quality of experience (QoE) as perceived by the end user on the other hand. It explains how both can be assessed, how they relate, and how quality data can be made actionable using elaborate client-side streaming analytics.



Ralf Neudel is co-founder and CEO of discover, a SaaS company providing the analytics suite einbliq.io to broadcasters and other media companies. Ralf also is a Strategic Technologist for the Digital TV Group (DTG), an organisation central to driving digital TV innovation in the UK. Previously, Ralf led the Media Services and Platforms department and coordinated the collaborative research activities at IRT, the former joint R&D centre of the public broadcasters ARD, ZDF, Deutschlandradio, ORF and SRG/SSR.

Sebastian Siepe (Einbliq) is the co-Founder and CTO of discover, a Munich-based software company that provides the data analytics service einbliq.io. After specialising in data processing and data analytics for streaming at Institut für Rundfunktechnik, he is now developing easy-to-integrate analytics solutions in the fields of Multi-CDN, QoS and QoE tracking alongside with broadcast and broadband audience measurement. These services support media companies in the cost-effective delivery of stellar media experiences to their users.



12:10 – 12:30 Trends in Content Delivery Networks

An update on Low Latency Streaming, (open) caching possibilities, including extensions to the Access Network and transparent caching, 'alternative technologies' such as the use of CDNs for multicast in 5G (network slicing?), and backhauling using satellite.



Andre Reitenbach, CEO of G-Core Labs, an international provider of cloud and edge solutions based in Luxembourg, Guinness record Book company. Andre is one of the world's leading experts in designing of IT infrastructure of any complexity, creating and managing high-load cloud and edge systems.

Andre Reitenbach has been holding managerial and expert positions in leading IT companies and consulting agencies for 16 years. In 2014, he became CEO of G-Core Labs. Under his leadership, the company successfully launched more than 10 products and services, including CDN, cloud, streaming platform, DNS, protection against DDoS attacks, created a network with more than 120 points of presence on five continents of the world, opened 7 offices in Europe & North America with 400+ employees. Andre Reitenbach studied at Stanford, Executive leadership program. He holds degrees in Business informatics by Technical University of Braunschweig, as well as in Telecommunication systems, Business intelligence and International marketing.

SESSION 2: 5G MARKET TRENDS



CHAired BY ROLAND BEUTLER (SWR)

Roland Beutler studied Physics at the University of Stuttgart, Germany, and went on to receive a Ph.D. in Mathematical Physics from the Max-Planck-Institute for Metal Physics, also in Stuttgart. Between 1995 and 1996 he worked at the Università degli Studi di Lecce, Italy, under a Fellowship of the European Commission. In 1993 he joined SWR to work in the frequency planning department and is currently responsible for programme distribution strategy.

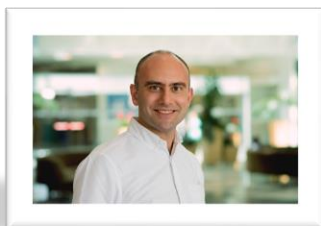
Dr Beutler has been participating in EBU technical activities for more than 15 years and has chaired several EBU groups dealing with the future of broadcast distribution systems. He was chair of the several of EBU's Strategic Programmes and Project Teams. Currently he acts as chairman for the Strategic Programme on Distribution. This group coordinates the engagement of European broadcasters in 3GPP, the global standardization organization of mobile technology. Roland Beutler is actively participating in different 3GPP groups to support the requirements of broadcasters for 4G

and 5G developments. He is also a member of the Steering Group of the 5G Media Action Group.

Roland Beutler is also involved in ITU and CEPT work and has been responsible for several of their working groups, both radio and TV related. He participated in WRC-12, WRC-15 and RRC-06 and was deeply involved in the preparation of the latter conference. Moreover, he has published several articles and four books on frequency and network planning for digital terrestrial broadcasting systems, the digital dividend of broadcasting and the evolution of broadcast content distribution.

13:30 – 13:50 Deploying 5G for Digital Media Broadcast

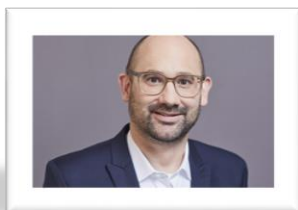
Work on Release 17 and planning of work items of Release 18 has advanced significantly. What are the opportunities for the media industry in content production and in distribution? What are the timescales, what might be implemented, and when?



Lorenzo Casaccia has been at the forefront of wireless technology and innovation for 20 years. He joined Qualcomm in 2000 and has been with the company since then, covering a variety of roles related to wireless communication, including research and system design, regulatory, product, technology standardization and intellectual property. He led Qualcomm's 3GPP team for a decade including the recent creation of the 5G standards and its evolution. Lorenzo holds graduate degrees in Engineering and Philosophy. He is @lorenzocasaccia on Twitter

13:50 – 15:00 PANEL DISCUSSION: Enabling the market for the use of 5G in the media sector

Our panelists discuss emerging business models, opportunities and blocking issues for the use of 5G in media production and distribution.



Since February 2016, **Michael Reinartz** is Director Innovation & Consumer Services and thus responsible for the development of a holistic, cross-business area innovation strategy and roadmap as well as the direction of the innovation management and Consumer Services Portfolios for Vodafone Germany. He aims to recognize new trends in the telecommunications branch early, to prepare the implementation in strong products and services as well as to position Vodafone as innovation leader in the market.

Jordi J. Giménez is Head of Technology at the 5G Media Action Group (5G-MAG). 5G-MAG is a platform for collaboration towards 5G solutions for the media industry in the domain of content production and media distribution. Before, Jordi was Project Manager and Research Engineer at the Institut für Rundfunktechnik (IRT), the research and innovation centre of ARD, ZDF, Deutschlandradio, ORF and SRG/SSR, based in Munich. He has been actively contributing to the 3GPP RAN1 working group on LTE and 5G technologies for TV and radio distribution. Jordi obtained a Ph.D. degree in Telecommunications from the Universitat Politècnica de València (UPV) in Spain.



Mohamed Aziz Taga is product owner for 5G Broadcast/Multicast & Transmitter Systems with Rohde & Schwarz, Munich, Germany. Aziz leads the 5G Broadcast/Multicast business development activities and associated projects worldwide. After obtaining his Master degree in Computer Networking and Telecommunications, Taga became a Mobile Core Network Specialist within Nokia Networks with an extensive Cellular PDN/EPS/IMS/SDM technical background before joining Rohde & Schwarz in 2018.

Lorenzo Casaccia (Qualcomm)

Roland Beutler (SWR)

SESSION 3: SUSTAINABLE AND RELIABLE

CHAired BY HEMINI MEHTA (EBU)



Hemini Mehta (EBU) Experienced Technical Professional in all things digital (video on demand, live streams, websites, mobiles, TV, STB & games consoles) with an angle on Sustainability. Capable to bridge business with technology. Intrapreneurial/entrepreneurial spirit. Presence in academia, from lecturing, examining to mentoring PhD candidates.

15:30 – 15:50 **How is ITU adopting the UN sustainable development goals?**

The ITU is looking at how ICTs can help to achieve each of the United Nations Sustainable Development Goals. How are different ICT industries contributing to the sustainability goals?



Gitanjali Sah is Strategy and Policy Coordinator at the International Telecommunication Union (ITU) and is responsible for the World Summit on the Information Society (WSIS) process. She has more than 15 years of work experience in ICT policy issues at the national, regional and international level. She is an experienced International Civil Servant having worked at several UN Agencies. She holds M.Phil. Development Studies, University of Cambridge, UK and a Master in Political Science, Jawaharlal Nehru University (JNU), New Delhi, India.

15:50 – 16:10 **The LoCat Project : assessing the carbon footprint of TV delivery across Europe**

This presentation will show the results of a study commissioned by a number of large European players on the carbon impact of delivery across Europe and across the different delivery platforms (DTT, IPTV, OTT).



Vincent Grivet (The LoCat Project) is an independent consultant advising European broadcast and technology players from Europe and the USA in the digital media ecosystem, focussing on strategic alliances, business development and industrial affairs. He serves as Chairman of the HbbTV Association since 2018, where he now represents Salto, an OTT platform established by France Televisions, M6 and TF1 the leading French Broadcasters. He also serves as a non-executive director at the Board of Netgem (ALNTG.PA), an independent innovator in OTT platforms and connected home solutions. Prior to this, he held various international marketing, M&A, business development and general management positions at Orange Group and at TDF Group. Vincent Grivet, a French national graduated from Paris's Ecole Polytechnique and Paris Tech Telecom; and is also an IFA certified company director. Vincent has assembled and represents an informal consortium of European broadcast and OTT institutions who joined forces under the banner of "The LoCat Project" to assess the

energy and carbon impact of delivering TV content.

16:10 – 16:30 **Reliability of broadcasting networks in emergency situations**

In summer 2021 several natural disasters throughout Europe clearly demonstrated the resilience of broadcasting networks during a disaster event, key to maintain the population informed at any time. This presentation will show the case during the floods in Germany.

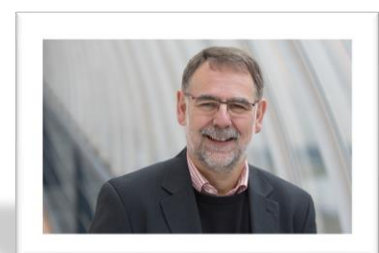


Susanne Rath studied Electrical engineering and joined the IRT, the research and development institute of the German Public Service Broadcasters, in 1992.

There she led a plethora of scientific projects and research teams in the fields of audio, media production, metadata and accessibility.

In May 2021 Susanne joined ARD's Competence Centre for International Frequency Management. Here she is responsible for all matters concerning international spectrum regulation. She is involved in many national and international technical working groups. Her

current focus is on the technical and strategical preparation of WRC23 to safeguard UHF frequencies in particular for the future use for 5G Broadcast and PMSE applications in media production.



Udo Klaus (SWR) 1985 - 1989 Studium der Nachrichtentechnik an der Fachhochschule für Technik Esslingen, seit 1989 Mess- und Planungssingenieur in der Programmverbreitung des SWR, seit 2014 Abteilungsleiter der Programmverbreitung des SWR.

WEDNESDAY 17 NOVEMBER 2021 (10:00 - 16:15 CET)

SESSION 4: THE FUTURE USE OF SUB-700 MHZ

CHAired BY ILHAM GHAZI (ITU)

10:00 – 10:05 **The UHF band, one of the hottest topics at WRC-23**

WRC-23 agenda item 1.5 will review the use of the 470-960 MHz band. What is the scope of the studies to be done? What are the current and future services usages?



Ilham Ghazi (ITU) In ITU for 16 years, At present: Head of the Broadcasting Services Division at the Radiocommunication Bureau of ITU. WRC secretary during WRC-07 (Appendix-4 revision), WRC-12 (WG5C on fixe, mobile and broadcasting issues) and WRC-19 (WG6B on a.i.10). From 2010 and 2018, successfully led DTT frequency planning in Africa, Arab Region and Central America and Caribbean, to facilitate the Transition to DTT and enable the release of 700/800 MHz. In 2018, in parallel to her responsibilities, she had been appointed as Counselor by interim to ITU-R study Group 6 and its Working Parties (February to September 2018). Prior to ITU, worked for near 10 years in Moroccan Agence Nationale de Réglementation des telecommunications, with evolving level of responsibility that included head of national frequency planning and head of international frequency coordination Units. In addition to her Engineering degree, she completed an executive Master in Business Administration, from the Ecole polytechnique Federale de Lausanne-Switzerland in 2009.

10:05 – 10:15 **Spectrum use and needs in the UHF band across Region 1**

Region 1 covers the whole of Europe, Middle East and Africa. Different services, different spectrum requirements, and different timescales in different parts of the Region will need to be reconciled.



At the EBU's Technology & Innovation department **Darko Ratkaj** is engaged in collaboration amongst EBU Members and with the industry on strategic issues related to the future distribution of content and services. He is involved in R&D projects, standardisation, interdisciplinary technical and regulatory studies, and radio spectrum management. His current focus is on wireless transmission systems, such as terrestrial radio and TV systems and mobile systems such as 4G/LTE and 5G.

10:15 – 10:25 **Sharing Studies – is 'flexibility' real?**

Certain regulators want a co-primary allocation to mobile services below 694 MHz to have flexibility in the future to decide the use of the band. But sharing possibilities between DTT and IMT are so limited that a harmonized use is required. Where is the flexibility?



Thierry Schott (TDF) has been working for TDF for more than 20 years. His areas of interest cover UHF frequency planning, coordination, sharing and compatibility studies and optimisation in general. He has been involved in several national research projects involving the use of the UHF band. Thierry is a graduate telecom engineer from Supélec (France) and holds a Master of Science in Electrical Engineering from the Georgia Institute of Technology (Atlanta, USA).

10:25 – 10:35 **PSM's expected evolution of DTT and 5G Broadcast**

Public service media that are organized in the EBU have varying spectrum needs. What are their expectations for the future and how was the common EBU position defined?



Per Björkman (SVT) SVT (Swedish Public Service broadcaster). As Head of distribution at SVT, Per Björkman is deeply involved in the strategic work with spectrum management and the future of terrestrial broadcasting both on a corporate and regulatory level. He has a M.Sc. in Electrical Engineering and is a member of EBU Technical Committee since 2012.

10:35 – 10:45 **The future of audio PMSE**

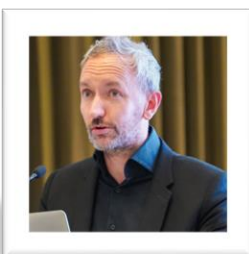
Wireless audio production devices are important uses of sub-700 MHz frequencies. How is this part of the industry innovating? What are the future spectrum needs?



Lindsay Cornell has worked for the BBC for more than 20 years, in a variety of engineering, editorial and leadership roles spanning radio, tv, spectrum regulation and internet. He has considerable experience of leading collaborative projects through his roles as Chairman of CEPT FM51, dealing with spectrum issues for programme making, and as Chairman of the World DAB and DRM Technical Committees, managing the stability and development of the respective standards. Lindsay contributes his expertise to strategic and policy issues for broadcasters in the ever changing technological environment through his activities with EBU, ABU, ASBU and WBU. He brings a rare combination of scientific understanding, technical experience, project management and people skills to bear upon all his responsibilities.

10:45 – 10:55 **The need for more mobile broadband – coverage vs capacity**

International Mobile Telecommunication (IMT) services are looking to expand their spectrum allocations below 700 MHz. Existing allocations can already provide coverage and capacity for rural areas. Is there a need for more spectrum?



Ross Bateson (GSMA) is a Special Adviser to the spectrum team at the GSMA. He has been part of the GSMA's development committees on policy and spectrum for many years, he has chaired the GSMA's 5G ministerial task-group and represented the organisation and the mobile industry at the ITU and regional regulatory bodies.

Ross is a regulatory consultant with 20 years' experience in the telecommunications sector. His career has seen him advising a wide range of clients across the telecoms, satellite and technology sectors on regulatory engagement, market access and policy development. He started working in government affairs through consultancy Access Partnership in 2006 before setting his current consultancy RB Communications in 2012.

10:55 – 11:30 **PANEL DISCUSSION: Is there a 'win-win' solution for sub-700 MHz?**

Our panelists discuss if the various claims on the sub-700 MHz spectrum can be reconciled and what some win-win scenarios might look like.

- **Ilham Ghazi** (ITU)
- **Thierry Schott** (TDF)
- **Per Björkman** (SVT)
- **Lindsay Cornell** (BBC)
- **Ross Bateson** (GSMA)

SESSION 5: THE FUTURE USE OF THE C-BAND



CHAired BY CATH WESTCOTT (BBC)

Cath Westcott is Senior Distribution Manager at BBC World Service and joined the BBC as a graduate trainee on the BBC Engineering training scheme in the 1980s. The BBC's global audience is currently an estimated 468 million people per week, and those audiences depend on reliable and interference-free delivery of radio, television and on-line services. Cath has represented the interests of the BBC's international operations in UK, European and international technical regulatory meetings since 2005. She attends meetings at the ITU, and is active primarily in the ITU-R Broadcasting Services Study Group. She has also attended four World Radio Conferences and two Plenipotentiary Conferences on the UK delegation. Cath chairs the EBU's Electromagnetic Interference and Compatibility Project group which is part of the Spectrum Strategic Programme.

12:00 – 12:05 **Why the use of the C-Band is important for broadcasters**

The C-Band is highly used for EBU Members' international services and Eurovision, focused in certain parts of the world. Other Members are looking to other future uses. But the band is challenged for additional IMT usage.

Cath Westcott (BBC)

12:05 – 12:15 **The challenges for the satellite industry**

The C-Band provides a resilience to rain attenuation which is essential in certain parts of the world and beneficial not only to the media but other industries as well. Is there an alternative to replace it?



Hazem Moakkit is responsible for shaping Intelsat's strategic long-term positioning in the marketplace. In his role, he works closely with the company's business development, asset management and innovation teams to analyze and identify emerging growth opportunities for Intelsat. In addition, he is responsible for managing efforts that protect, optimize and leverage the company's spectrum assets in support of Intelsat's broader long-term growth strategy. He joined Intelsat in 2015.

Mr. Moakkit is a veteran of the satellite industry where he held various capacities over the last 29 years. Prior to rejoining Intelsat in 2015, Mr. Moakkit served as Vice President, Spectrum Development, at O3b Satellite Networks where he was responsible for managing and acquiring spectrum assets for the non-geostationary satellite operator, in addition to overseeing all of their regulatory activities at the ITU, CEPT, and other regulatory bodies. Before that, he was the Director or Regulatory & Spectrum Affairs where he created and managed the spectrum strategy for Yahsat (UAE), and was a key member of the Corporate Strategy team where he was instrumental in formulating and executing the expansion

strategy for Yahsat in Africa and South America.

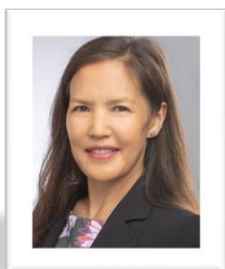
Prior to Yahsat, Mr. Moakkit was a member of the Spectrum & Regulatory group at Intelsat (previously PanAmSat) in Washington, DC. During his tenure at PanAmSat, he also worked in various system and sales engineering capacities. Early on in his career, Mr. Moakkit served as a systems engineer at ATCI, a nascent satellite systems integrator based in Tempe, Arizona.

Mr. Moakkit earned a Master of Business Administration Degree from Georgetown University and a Bachelor of Science Degree in Electrical Engineering from Arizona State University.

Intelsat S.A. is the world's leading provider of satellite services, delivering high performance connectivity solutions for media, fixed and mobile broadband infrastructure, enterprise and government and military applications for more than 50 years. Intelsat's satellite, teleport and fiber infrastructure is unmatched in the industry, setting the standard for transmissions of video and broadband services. From the globalization of content and the proliferation of HD, to the expansion of cellular networks and mobile broadband access, with Intelsat, envision your future network, connect using our leading satellite technology and transform your opportunities. For more information, visit www.intelsat.com.

12:15 – 12:25 **What are the spectrum options for 5G Campus networks?**

5G non-public networks are being considered by broadcasters for certain local applications (e.g. production applications) as well as by other industries with low latency and high QoS requirements. C-Band is one of the bands for such applications.



Khishig Dushchuluun is currently a Senior Engineer at ARD's Competence Centre for International Frequency Management. Her main focus is on the technical and strategic preparation of WRC-23 to secure UHF spectrum, especially for future use for 5G broadcast and PMSE applications in media production. To this end she is involved in several European and International technical working groups such as future broadcasting, spectrum, terrestrial service sharing and planning, working on defining the future of European broadcasting.

Previously Khishigbayar worked at the Institut für Rundfunktechnik (IRT) where she was actively involved in various groups of the EBU, CEPT, ITU-R, and 3GPP.

She obtained her PhD in Communications Engineering from the Technical University of Darmstadt in Germany.

12:25 – 12:35 **The mid-band needs of different services**

Regulators have to manage various spectrum requirements in the C-Band. What could be the solution, notably in terms of sharing?



Eric Fournier (ANFR) is currently Director for Spectrum Planning and International Affairs in the Agence Nationale des Fréquences (ANFR), the French public agency in charge of spectrum management (www.anfr.fr). In this capacity, he is responsible for preparing the revisions of the French national table of spectrum allocation and for coordinating French positions in international meetings and conferences on spectrum within ITU, CEPT and EU. He was deputy head of the French delegation for RRC-06, WRC-07, WRC-12, WRC-15 and WRC-19. He is currently vice-chairman of the RSPG, a high-level advisory group that assists the European Commission in the development of radio spectrum policy. He has been involved in all discussions on major evolutions of spectrum in Europe and was Chairman of

the Electronic Communication Committee (CEPT/ECC) from 2013 to 2018 and of the European Conference Preparatory Group for the World Radiocommunications Conference 2012 (CPG-12). Eric is a graduate telecom engineer from SUPELEC (France).

12:35 – 13:00 **PANEL DISCUSSION: Can competing uses share the C-Band spectrum?**

Our panelists discuss if the different emerging and competing services could share the C-Band, and how.

- **Cath Westcott** (BBC)
- **Khishig Dushchuluun** (BR/ARD)
- **Eric Fournier** (ANFR)
- **Hazem Moakkit** (ESOA Global Spectrum & Regulatory Policy)

SESSION 6: SPECIALISED TECHNOLOGY TALKS

CHAired BY DAVID HEMINGWAY (BBC)



David Hemingway is a Senior Distribution Manager at the BBC, specialising in spectrum issues. He has worked in EBU project groups for around 15 years, and now chairs the strategic programme on Spectrum. In recent years, he's worked on projects to explore the use of 5G in broadcasting. He also chairs the ITU Working Party 6A Rapporteur Group preparing for WRC-23 agenda item 1.5.

14:00 – 14:20 **If broadband is king, is DVB also going broadband?**

Broadband technologies are disrupting broadcasting organisations. DVB has a number of initiatives related to broadband: DVB-DASH, DVB-I, Native IP solutions, and more. How does all this fit together?



Emily Dubs (DVB) took up her current position as Head of Technology in January 2020, coming to DVB with 20 years' experience in the digital television industry. Previously she had worked with Thomson Video Networks (now Harmonic), TeamCast (now ENENSYS) and SmarDTV/Neotion, in roles covering both traditional broadcast technologies and those emerging from the broadband world.

14:20 – 14:40 **5G-RECORDS: enabling media content production**

The main objective of this European project is to integrate 5G components into three use cases and evaluate their performance in the context of professional content production environments.



David Gómez Barquero (UPV) is a Professor at Universitat Politècnica de Valencia (UPV) and vice-director for research of the Institute of Telecommunications and Multimedia Applications (iTEAM). Prof. Gómez-Barquero has been actively participating during the last decade in the standardization of wireless broadcasting technologies, including DVB-T2, DVB-NGH and ATSC 3.0. Currently, his research is focused on 5G, and is the project coordinator of 5G-RECORDS on 5G content production (www.5g-records.eu) and FUDGE-5G on cloud-native private 5G networks (www.fudge-5g.eu). Previously he coordinated the H2020 5G-Xcast project that developed broadcast and multicast technology components for 5G (www.5g-xcast.eu). He is a member of the 5G-PPP steering board.

15:15 – 15:35 **The disruptive future of Radio**

Radio has long demonstrated that it can adapt quickly with change. With more challenges to Radio listening than ever, what will Radio look like in the future and what are broadcasters doing now to make that a reality?



James Cridland (Podnews) James Cridland is Editor of Podnews, a daily podcast newsletter. He is a radio futurologist - a writer, consultant and public speaker on radio's future.

James has worked in audio since 1989 as an award-winning copywriter, radio presenter, and internet strategist.

He launched the world's first streaming radio smartphone app in March 2005, for the original Virgin Radio in London, launching daily podcasts earlier that year.

In 2007 he joined the BBC working on the BBC iPlayer for radio, achieving a dramatic increase in the service's audio quality.

Part of the team that laid the foundations for the UK Radioplayer, he has since worked for a variety of businesses across the world, including Canada's Vista Radio, receiver and silicon manufacturers Pure and Frontier Silicon, talkSPORT, and a variety of media companies in Europe, North America, Asia and Australia; helping them focus on the benefits and challenges that new platforms bring to their business.

He was one of the organisers of Next Radio, the UK radio ideas conference. He has worked with the world's largest radio conference, Radiodays Europe, since its inception. He's also part of the programming team for Radiodays Asia and Podcast Day 24.

A founder of the hybrid radio technology association RadioDNS, he is an Associate Member of the International Academy of Digital Arts and Sciences, and was made an Honorary Life Member of the UK's Student Radio Association.

Born in the UK, James lives in Brisbane, Australia with his partner and daughter.

5:35 – 15:55 Are we compliant with regulation to protect health from electromagnetic radiation?

Broadcasters should be aware of the regulation limiting the effects on health from electromagnetic radiation and why. This presentation also looks at the EMF aspects of bonded cellular devices.



Karina Beeke (Cellnex Telecom) began her career, over 35 years ago, as a graduate trainee at what was then the BBC's Engineering Research Department, before moving to its Transmission Department and now works for Cellnex Telecom. She has been involved with RF Safety since the early 1990s, dealing with both broadcast and telecoms installations. Karina is a former chair of various EBU groups dealing with the topic and has represented the EBU at both European and International levels.

Robert Webber (BBC News World Service) - Robert commenced his current role as Distribution Manager World Service with BBC World Service in July 2011. For over 15 years Robert has been involved in the measurement and assessment of hazards arising from Radiofrequency systems. Robert is currently a member of the EBU's Electromagnetic Interference and Compatibility Project group which is part of the Spectrum Strategic Programme. It is in this role that Robert has been involved with the production of EBU Technical Report 067 "RF RADIATION HAZARDS ARISING FROM BONDED CELLULAR ENG EQUIPMENT".

Robert is responsible for managing the operation of a number of the BBC's high power broadcasting stations and international satellite distribution. In addition to this Robert is a member of the Digital Radio Mondiale (DRM) steering board and represents that BBC at various ITU-R Study groups focused on Spectrum Management and Broadcasting.



15:55 – 16:15 Wrap-up



Elena Puigrefagut Coarasa, Senior Project Manager at the European Broadcasting Union, coordinates joint technical activities undertaken by EBU Members on frequency planning and spectrum management and regulation and in particular frequency planning studies for terrestrial broadcasting systems. She represents the EBU in a number of international committees as the CEPT, EC and ITU including ITU World Radiocommunications Conferences.

Prior to joining the EBU, Elena worked at Eutelsat, a global satellite operator, as a frequency planning engineer in the Operations Department. During this period, she was responsible for the planning of the satellites that supported the launch of digital TV across Europe in the mid-1990s.

Elena holds a Masters degree in Image and Sound (ENST, Paris) and an M.Sc. in Telecommunications Engineering (Universitat Politècnica de Catalunya, ETSTB Barcelona).
