EBU
OPERATING EUROVISION AND EURORADIO

FORECAST
20TH ANNIVERSARY

EVOLUTION IN MEDIA DISTRIBUTION - 2017

Thursday 23 November

KEYNOTE SESSION

Welcome to FORECAST on its 20th Anniversary

Simon Fell, Director of Technology & Innovation, European Broadcasting Union

Simon Fell leads the team spearheading developments in broadcast, media technologies and innovation at the EBU based in Geneva. Additionally, Simon is the Chairman of the World Broadcasting Union Technical Committee and of the ETSI Joint Technical Committee for Broadcast Standards. He is also a member of the IBC Council.

He has four decades of experience, formerly with ITV as Director of Future Technologies; previously he helped establish Carlton Television where he held several executive positions and helped launch digital broadcasting in the UK.

He has chaired the Technical Council at the UK's Digital Television Group, and was Chairman of the HD Forum.

Additional roles include Director of Engineering for Rushes, Chief Engineer of 625 and establishing Channel Four. His early career included periods in the USA with Rank Cintel and at YTV in Leeds.

& David Wood (EBU) is a consultant to EBU Technology and Innovation . He was formerly a member of staff at the EBU, and earlier with the BBC and IBA in the UK. David Chaired the ITU group that led to the ITU Recommendation for UHDTV, and the DVB Commercial Group that prepared the requirements for the DVB UHD delivery specification, recently agreed.

The Revolution will be Televised

Whilst the golden age of television is upon us, market forces are fundamentally changing what Television means for broadcasters like the BBC. What is BBC seeing as the immediate challenges? What does the future look like? How is the BBC preparing for disruption.

Neelan Patel is the Director of Product and Systems for TV & Radio at the BBC, leading the strategy, development, delivery and innovation activity for the future of digital BBC TV, Radio and Music experiences. He oversees: BBC iPlayer, iPlayer Radio, BBC Music, Red Button, BBC Three Online, TV & Radio Broadcast Engineering. Previously, Neelay built up and led the digital division of The Economist as their Commercial Director, then VP - Commercial Strategy & Global Head of Digital Products, and finally as SVP - New Business Incubation & Innovation. Prior to The Economist Group, Neelay served as the Commercial Director of AOL Europe. In addition, Neelay has had previous experience in management consulting, investment banking (M&A), and hardware engineering.

SESSION 1: TECHNOLOGY HORIZON

Next generation of DTT technologies, where are we going?

This presentation provides an insight into the fundamental technology developments in terms of capacity and system capabilities of current DTT broadcast operation. The role of the network deployment, linked to different factors are discussed. Moreover, the main ongoing research and standardization activities to enable Mobile Terrestrial TV Broadcasting are presented.

JAVIER MORGADE received his Ph.D. degree in telecommunications engineering from the University of Basque Country, Basque Country, Spain, in 2014. After finalizing his Ph.D., he has been involved in the ATSC 3.0 standardization with Samsung R&D UK, and into content delivery, signal processing and new concepts for Next-Generation Wireless Communication Systems with Fraunhofer IIS in Germany. He is currently with the Institut für Rundfunktechnik GmbH (IRT) in Germany where he is engaged in 3GPP and LTE/5G Broadcast standardization.

What's new on advanced satellite technologies

Alberto Morello graduated in 1982 and took his Telecommunications PHD in 1987. He is head of the RAI Research Centre and chairman of the DVB technical group on satellites (DVB-S, DVB-S2 and S2X)

State of the art on 4G/5G standards incl. eMBMS

Giovanni Romano (Telecom Italia)

3GPP roadmap towards 5G and IMT-2020 Focus on solutions to provide video and broadcasting services 3GPP plans on technology submission to IMT-2020

Giovanni Romano - Coordinator for standards on radio access and spectrum; NGMN Alternate Board Director; 3GPP ITU-R Ad Hoc contact person; delegate in 3GPP RAN and NGMN. 3GPP RAN Vice-Chairman (2013-2017)

Unified content delivery on fixed and mobile networks

Increasing amounts of HTTP streamed video are being consumed.The rise of global media hosting and distribution platforms allow content producers to access global markets easily and helps fuel the growth of unicast video streams. Audiences for live and "appointment to view" content can be particularly dynamic, which poses some significant challenges for unicast delivery, whereas multicast and broadcast handle this easily. We argue that by combining multicast and broadcast at the edge of the network, with a global CDN we can achieve the best of both worlds.

Steve Appleby currently leads the Video Delivery Research Team based at BT's Research Centre in the UK. Research topics include video formats and compression, content streaming and quality control as well as middleware and content protection technology. The team's research covers both fixed and mobile networks. Previously he has conducted research on a wide range of topics, including artificial intelligence (particularly machine translation), digital signal processing and sonic imaging techniques. He holds a Ph.D. from the Electronics department at the University of Kent and a BSc. in Physics from the University of Surrey.

The drivers for cable's migration to IP

What makes IP distribution attractive for cable operators, and what still keeps them away.

Alexander Adolf (Condition-ALPHA)

SESSION 2: SPECTRUM LANDSCAPE

Defining national roadmaps for 700 MHz release French Case

Overview of the context, preparation and conduct of the 700 MHz band release operations in France. What issues and perspectives for the audiovisual sector?

Thomas Hoarau (CSA) Education: Radiocommunication engineer, CentraleSupelec Engineering School - Master in Economics, Paris-Sud University/CentraleSupelec Experience: 2007/2010 - Capgemini Consulting Telecom and Media, consulting missions in marketing, deployment projects, due diligence for Telecom operators and OEMs ; 2010/2013 - ARCEP (French Telecom NRA), analyst on fixed broadband markets ; 2013/2016 - ARCEP, head of broadband and NGA facilities unit in charge of asymetrical regulation ; 2016 - ARCEP, deputy director of Fixed Access Division in charge of definition of deployment and access conditions to FttH, copper local loop and civil engineering access for NGA deployment ; 2016 – CSA (French Media NRA), deputy director and head of frequency planning department in directorate of television media.

The DTT use of the sub-700 MHz band

Dr. Walid SAMI is Senior Project Manager at the European Broadcasting Union (EBU), Geneva, with responsibility for co-coordinating studies on frequency planning and spectrum sharing issues. He represents EBU in number of European and International Forums dealing with Spectrum Management. He is Vice Chair of ITU-R Study Group 6 (Broadcasting) and mostly active in Working Party 6A (Terrestrial broadcasting delivery) and 1A (Spectrum engineering techniques).

Prior to joining EBU, Dr. SAMI worked in spectrum management and frequency planning of Digital Broadcasting systems at Télédiffusion de France (TDF) and CSA (Conseil Supérieur de l'Audiovisuel) in France. Notable is his 7 years as head of Television Planning Department at the French Broadcasting Authority, where he was in charge of planning Digital Terrestrial Television in France.

Dr. SAMI received Electrical Engineering Degree from the Lebanese University in 1986 and a Doctorate in Physics from Supelec / Université de Paris Sud in 1991.

Long-term options for 694-960MHz - a view from the UK

Following the Lamy report, changes to UHF spectrum allocations will not occur until 2030 at the earliest. This extended period of regulatory certainty provides the option for spectrum managers to move away from the trodden historic paths of making allocation decisions about small (and increasingly unusable) slices of spectrum. Our report contributes to a wider discussion on spectrum allocations from 470-960MHz (in preparation for discussions at WRC-19/-23) by outlining potential options for releasing additional capacity for mobile services between 694-960MHz, using the UK as a case study.

Marc Eschenburg (Aetha) has worked in the telecoms industry since 2008. His focus over the last year has been on advising regulators on spectrum management issues and in assisting MNOs prepare for spectrum auctions.

Media distribution options in the UHF band

Tariq Al Awadhi of United Arab Emirates is the Executive Director Spectrum Affairs Department of the Telecom Regulatory Authority (TRA) United Arab Emirates. Mr. Al Awadhi has 21 years of experience in spectrum management. He selected Chairman of ITU World Radio Conference (WRC) 2012. He headed a number of ITU Groups and meetings and contributed towards ITU resolutions, recommendations and studies. He represented the UAE in ITU, IMO, ICAO, Arab Spectrum Management Group, GCC Telecom Bureau and a number of other international and regional forums. He is currently chairman of Arab Spectrum Management Group (ASMG)

Born in the United Arab Emirates, he attended Khalifa University (Bachelor of Engineering) in United Arab Emirates and currently pursuing his Master's in Business Administration in the UAE University.

Tariq Al Awadhi played a pivotal role in establishing Spectrum Affairs Department in the TRA. He pioneered the modern spectrum management concepts in the region and equipped the UAE with one the most advanced and first of its kind fully automated online spectrum management and frequency planning system. The UAE Radio Frequency users can apply on-line anywhere in the UAE by visiting the TRA Website and send their request. He introduced a number of ideas to improve the procedural workflow in assignment of spectrum to the users. Spectrum Affairs Department of the TRA, under this leadership in 2010 obtained ISO 9001: 2008 Certification for Quality Management System.

He headed the execution of the UAE Digital TV switchover plan and successful vacation of 700 & 800 MHz band from analog TV by 2013 and make this band available for Mobile Broadband services in the UAE. In his supervision, a national plan was prepared and appropriate frequencies were assigned to the three terrestrial TV broadcasting operators in the UAE. He also led a project to develop receiver specifications for digital TV in the UAE. He is also heading an initiative for regional coordination for FM sound broadcasting channels under ITU Geneva-84 Agreement.

Hypes or hopes of the 600 MHz auctions in USA

Søren Sørensen (NERA)

Broadcasters' preparations for WRC-19

With only two years until the start of WRC-19, we will look at the agenda items of interest to broadcasters, and the preparations the EBU and its members are taking to ensure a satisfactory outcome.

David Hemingway is a Senior Policy Advisor at the BBC, specialising in distribution and infrastructure issues. He has worked in EBU project groups for around 15 years, and now chairs the strategic programme on Spectrum. At WRC-15, he chaired the group of global broadcasters who successfully resisted allocation of broadcasting spectrum to mobile.

Friday 24 November

SESSION 3: REGULATING THE MEDIA INDUSTRY

The "Telecoms Package" becomes "European Electronic Communications Code" – is it just the title that changes?

Wouter Gekiere currently works for the European Broadcasting Union (EBU), the European alliance of public service media, as Deputy Head of the Brussels office. He's following up the latest European regulatory and policy trends in the audiovisual field including the Audiovisual Media Services Directive, EU Telecoms rules, net neutrality and radio spectrum. He started his career working on research projects on various European policy issues, followed by a position as an advisor to an MEP in the European Parliament. He holds master's degrees in Law (1998) and in International Relations (1999) from the University of Leuven and a master's degree in Public and International Law from the University of Melbourne (2004).

How the ITU is adapting regulation to the broadband tsunami

François Rancy, the Director of the ITU Radiocommunication Bureau,

SESSION 4: CHANGING DISTRIBUTION MODELS

Business Arrangements for distribution of broadcast content

Roland Beutler (SWR) 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 strategy of programme distribution and international frequency management issues.

Dr Beutler has been participating in EBU Technical activities for more than 10 years and has chaired several EBU groups dealing with the future of radio (S/FOR and S/FB2) and sharing and compatibility studies (SMR-SDB). He was chair of the Strategic Programmes on Terrestrial Broadcasting (SP-TB) and Cooperative Terrestrial Networks (SP-CTN). Currently he acts as chairman for the Strategic Programme on Future Distribution Strategies.

Roland Beutler is also involved in ITU and CEPT work and has been responsible for several of their working groups. He participated in WRC-12, WRC-15 and RRC-06 and was heavily 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 and the evolution of broadcast content

5G For Media and Entertainment

What is 5G and why is it applicable to the M&E sector • Why do we need a specific M&E Vertical in the 5G ecosystem? • How can we align requirements across the sector?

Sean Grant (EE) has over 17 years' experience in telecoms, media and entertainment. Within EE he is responsible for Video and Content Technologies, leading the development of cutting edge technologies to provide the optimal viewing experience for EE's customers wherever they are. Sean is also currently working on the 5G-Xcast programme ensuring an aligned strategy across EE and BT In 2015 Sean was the project lead for the award winning LTE-Broadcast demo at the FA Cup final at Wembley Stadium

Satellite operators perspective on hybrid broadband broadcast media delivery

Rhys Morgan (ESOA)

LTE-B trial in Norway

Bjarne Andre Myklebust (NRK)

How should a broadcaster's distribution strategy change in the coming years?

Darko Ratkaj is a Senior Project Manager at the EBU's Technology & Innovation department. His interest is the intersection between content, technology, market, regulation, and policy issues. Amongst other things he is involved in technical research, spectrum related work, and strategic analyses with the purpose of making public service media universally available.

SESSION 5: MAKING IT REAL

Feeding the linear monkey in an OTT zoo

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 Reuqirements Group. He is an Irish national living and working in Switzerland.

All you want to know about the 5G-XCAST Project

5G-Xcast is a new 5G-PPP project that will devise, assess and demonstrate a conceptually novel and forward-looking 5G network architecture for large scale immersive media delivery. The objectives are to: • Develop broadcast and multicast point to multipoint capabilities for 5G, and evaluate 5G spectrum allocation options for 5G Broadcasting. • Design a dynamically adaptable 5G network architecture with layer independent network interfaces to dynamically and seamlessly switch between unicast, multicast and broadcast modes or use them in parallel and exploit built-in caching capabilities.

David Gomez Barquero, Senior Researcher at the Technical University of Valencia. His recent research focuses in the development of broadcast technology components for 5G. He is the project manager of 5G-Xcast

What are your predictions for the next 20 years?

David Wood (EBU)

Wrap-up Forecast 2017

Elena Puigrefagut Coarasa, Senior Project Manager at the European Broadcasting Union, co-ordinates 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).


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