

MAPPING CHANGES IN MEDIA DISTRIBUTION

BIOS / SYNOPSIS

MONDAY 19 NOVEMBER

SESSION 1: KEYNOTE

14:00 – 14:15



Welcome to FORECAST 2018

Antonio Arcidiacono is the EBU's Director of Technology & Innovation.

Antonio 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.

Antonio has a Doctorate in Electronics & Telecommunications Engineering from the University of Pisa. He is fluent in Italian, English and French.

14:15 – 14:40

New challenges for France télévisions programs distribution, threats and opportunities

The audience in TV viewing is moving from linear to non linear. New entrants such as Netflix are increasing their number of subscribers everywhere in Europe. How can broadcasters face these new challenges ? How can their distribution networks can adapt this evolution ?

Jacques Donat-Bouillud (France Télévisions) is graduated from Ecole Polytechnique de Paris and Ecole Normale supérieure des télécommunication de Paris. He has worked for TDF (Terrestrial Broadcaster), Visual TV (OB Van company), NextradioTV (BFM TV, RMC,) and is now in charge of distribution in France télévisions.

SESSION 2: ENHANCING LINEAR DISTRIBUTION

14:40 – 15:00

LOVEStv: Spain's Hybrid DTT platform

Spanish Broadcasters have joined forces to offer an enhanced user experience including features like Start Over, last seven days Catch up or content recommendations. Achieved goals, challenges, expectations and next steps will be presented at this session in Forecast 2018.

Xavi Redon Product Manager at Cellnex Telecom, Treasurer and SG member at HbbTV Association and Associate Professor at Universitat Autònoma de Barcelona, Xavi Redon has been involved in Terrestrial Television evolution in Spain since 1996 moving forward projects like UHD DTT transmissions, TDT Híbrida certification, TDT SAT, ASO or the spanish DTT network.

15:00 – 15:20



WiB learnings from the DVB study missions

This presentation will introduce the results from the DVB study missions into Wideband Broadcast re-use 1 (WiB), which completed their work earlier this year. It will then summarise the key learnings from these studies, which covered both commercial and technical aspects of WiB.

Chris Nokes (BBC) is Head of Distribution Core Technologies Section at BBC Research & Development, where he has worked for over 30 years, much of it in developments related to digital broadcasting. He currently chairs the UK DTG RF group as well as being a member of the Steering Committee of the 5G RuralFirst project, where the BBC will be trialling broadcast radio over 5G on Orkney.

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15:20 – 15:30



Overview of the FORECAST demonstrations

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). (EBU)

16:00 – 16:20

UHD/HDR Broadcasting of the FIFA World Cup 2018

The ORF acquired the rights to broadcast the UHD Signal from the World Cup Games in Russia in addition to the regular HD content. The presentation explains the decisions regarding technology, costs, public relations, risks and benefits which were made in order to deliver the UHD experience to the homes

Karl Petermichl works for the ORF since 1985, first as a sound engineer and later as chief technical manager for the ORF radios. Since 2012 Karl is the strateg officer to the Technical Director of the ORF and in this role responsible for technical innovation projects.

16:20 – 16:40

DVB in your home: everywhere and beyond TV

Context, goals, schedule and status of the DVB Home Broadcast (DVB-HB) activity, a DVB ongoing work to facilitate consumption of broadcast TV in multi-rooms and on multi-screens.

Nghia Pham (Eutelsat) has over 35 years of experience in the satellite industry and has been involved in standardization, representing Eutelsat, for over 25 years. Currently chairs the CM-HB group in charge of producing the commercial requirements for developing the DVB-HB specifications.

16:40 – 17:00

Targeted Advertising for linear TV

The DVB established the CM-TA group in January 2018 as a follow up of an ad hoc study mission group that envisaged Targeted Advertising (TA) as a major trend in the market. The lack of directly applicable standards, enabling targeted advertising in the classical horizontal broadcast TV, pushed the DVB to be engaged in the development of a new specification providing such standardized technical framework. HbbTV was a promising solution for TA, though certain requirements were likely not to be fulfilled by its current version. A special liaison was established under which the DVB would generate a complete DVB-TA specification which would build on an ad-hoc HbbTV specification. The presentation will detail this work and the its progress.

Angelo Pettazzi - Senior Strategic Marketing Manager at Reti Televisive Italiane S.p.A., part of the Mediaset Group Angelo is working for the Mediaset Group since 1981. He is involved in RTI Strategic Marketing where he is in charge to oversee the DVB and HbbTV standardization activities from the business point of view. He is member of the "HD Forum Italia" technical committee and member of the "HbbTV Association" steering group. Since January 2018 he is chairing the "HbbTV Marketing and Education Working Group".

17:00 – 17:20



DVB-I, linear TV on broadband

DVB-I is a forthcoming standard for deploying linear TV services over the Internet, providing similar functionality and user experience to existing DVB standards for terrestrial, cable and satellite distribution. This presentation will introduce the standard and give a summary of the status of the work.

Peter Lanigan represents TP Vision in various standards bodies, working on broadcast and IP technologies, advanced picture quality, content security and other related topics. He chairs the DVB CM-I group, which develops commercial requirements for the delivery of linear content over the Internet.

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TUESDAY 20 NOVEMBER

SESSION 3: KEYNOTE

09:00 – 09:25



SVT's Bullseye Model - how to use audience research to build an ecosystem

Markus Sterky (SVT) has worked with creative strategies and programme development both locally and internationally since 1995. Since 2006 I have moved on to work with more general strategic projects relating both to issues within the field of Communication, HR and Audience research as well as continuing with the national and international creative work. I find these new fields exciting and giving me a new type of energy. "Change Management" is a term often used for what I do, and to improve my skills I did an Executive Management Programme at IFL/Stockholm School of Economics.

SESSION 4: ASPECTS OF BROADBAND DISTRIBUTION FOR BROADCASTERS

09:25 – 09:50



Ensuring consistency of QoE between broadcast and broadband

RAI has adopted a new paradigm for QUALITY. We decided to measure the technical quality from the end user point of view, applying this new concept to all RAI platforms, MF, DAB+, DVB-T/T2, DVB-S/S2 and IP in order to determine the quality perceived from the user on that content on that platform in that moment. This is made possible by the implementation of HW and SW systems which are able to produce objective measurements that are closer to subjective evaluations.

Alessandro Ciociano (RAI) Graduated as Electronic Engineer at the University of Rome "La Sapienza" with a score of 110/110 cum laude. February 1997 employed at RaiWay, as project manager of the project DAB digital radio network; in charge of Management Systems for Transmission Networks. October 2004 employed at Rai in the Technology Strategies Department. In June 2012 he obtained a Master's Degree in Master Media & Telco at Polytechnic University of Milan. December 2015 employed at Rai in the Quality Department in charge of Quality Measurement and Customer Satisfaction

09:50 – 10:15



Public Service Media and Platforms: Recent regulatory trends and how to ensure PSM protection in a platform environment.

PSM organizations are increasingly using third-party platforms (e.g. social media networks and app stores) to distribute their services. In principle, those platforms facilitate the dissemination of PSM content. However, they may engage in practices that prevent PSM organizations from reaching their audiences. The EU has recently undertaken several initiatives to address some of the problems arising from such practices. Following an overview of recent attempts to regulate platforms, this presentation will pose and seek to answer many pressing questions which remain open and which will enhance PSM protection in an increasingly digitized environment where platforms play a major role in how online users access and engage with information.

Dr. Konstantina Bania (EBU) specializes in Competition Law and Media/Internet Law. She further advises on platform regulation, telecoms regulation, PSM funding, and the acquisition and sale of media rights. In 2017, Konstantina won the 'Best Paper Prize', awarded by the Academic Society for Competition Law, for a study on the role of consumer data in competition enforcement. Prior to joining the EBU, Konstantina was a Postdoctoral Research Associate at the Robert Schuman Centre (European University Institute) and an External Research Collaborator of the Centre for Commercial Law Studies at Queen Mary University, London.

10:15 – 10:40



Smart radio for smart devices

Ben Poor (EBU) has been with the EBU since 2017 as their Project Manager for Radio in Technology and Innovation, having previously worked for many years in the UK Commercial Radio sector. He was one of the founding members of RadioDNS which develops open standards for Hybrid Radio, and currently sits as the chair of their Technical Group. He currently focuses on practical implementations for Hybrid Radio, along with ensuring the prominence of radio services on traditional devices as well as newer platforms such as Connected Cars and Smart Speakers. Despite living in Switzerland, he doesn't like Toblerone and has never been skiing.

10:40 – 11:05

The impact of GDPR on linear broadcasting and OTT

Mathieu Habegger works as software engineering consultant for the EBU and is the Co-Founder of deliver.media and technical director of SwissMediaPartners AG (Bern, Switzerland). He holds a Master's degree in Computer Science from EPFL (Lausanne, Switzerland) and specializes in software engineering, distributed web and workflow applications and user experience. During his career, Mathieu has been leading several software engineering projects for both public and private broadcasters as well as new media ventures.

SESSION 5: MORE SPECTRUM PLEASE!

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11:45 – 12:10



Spectrum requirements for mobile services

The notion of exponential growth of data demand for mobile services is commonly misused and as such we discuss the implications of exponential growth and what happens in practice. Actual mobile data growth is slowing and we identify the other issues at play that impact this growth.

Saul Friedner (LS telcomUK) has worked in spectrum regulation since 2000 and started his career working for Ofcom in the UK. In 2007, Saul moved into consultancy and has worked on a number of spectrum and technology related projects for the European Commission, Ofcom, large telecoms operators and government departments. Saul has recently worked on spectrum refarming projects for use by IMT-2020 (5G) and assessed mobile data demand growth during the launch of 4G in Europe.

12:10 – 12:35



Broadcasters views on WRC-19 & WRC-23

With only a year until the 2019 World Radiocommunications Conference, we will review the latest developments in agenda items of interest to broadcasters, and look ahead to WRC-23.

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.

12:35 – 13:00

Will electromagnetic interference kill wireless services?

Referencing some of the issues being worked on by EBU's project group on Electromagnetic Interference & Compatibility, this presentation will look at the kinds of challenges being faced now and those we might expect in future. Can broadcasters safely assume that the services they use will be protected by European and international standards?

Cath Westcott joined the BBC World Service in the 1980s. After doing scheduling and frequency management for BBC shortwave radio, she moved into spectrum management and international work. In her current role as Communications Regulation Specialist, she represents the interests of BBC's international multi-platform operations in UK, European and international technical regulatory meetings. Cath is a member of the EBU Technical Committee Strategic Program on Spectrum and chairs the project group on Electromagnetic Interference & Compatibility (Spectrum-EIC). She is also a member of the World Broadcasting Union International Media Connectivity Group and its working group looking at interference to satellite services.

SESSION 6: DEMYSTIFYING 5G

14:30 – 15:00



5G for broadcasters: a reality check

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

15:00 – 15:30



Insights into Early 5G Deployments

The presentation will provide insights into early deployments of a 5G network architecture, based on emerging developments in 3GPP Rel 16, in Bristol (UK) and Barcelona (Spain), including the preparation for 20+ consumer facing trials and replications in other international locations with European and UK funded efforts, namely the H2020 FLAME and the DCMS Smart Tourism projects. The talk will outline key aspects of the underlying platform and its relation to ongoing standards efforts as well as of the relevance to key performance aspects for 5G, most notably efficiency and latency.

Dirk Trossen is a Senior Principal Engineer at InterDigital Europe, the European branch of InterDigital Inc. Dirk has more than 25 years of experience in network architectures, services and wireless technology. He successfully led the European efforts POINT and RIFE and is now leading the H2020 FLAME efforts in deploying a service-based architecture for Future Media Internet and 5G trials. Prior to joining InterDigital, Dirk was co-founder of TecVis LP and he held prior positions with

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Cambridge University, BT Research and Nokia Research. He published more than 85 peer-reviewed papers in international conferences and journals and has currently 35 international patents.

15:30 – 16:00



Will radio really need 5G?

We are living a moment of global momentum of the 5G. Messages are being launched that lead people to think that it will automatically become the solution to many problems. Among them, the massive distribution of audiovisual content. A more detailed analysis reveals that this might not be the case for the radio. That is why it is necessary to start working so that the 5G responds to the real needs of the radio in the future.

Javier Sánchez Pérez (RTVE) has a Master Science Degree in Telecommunications Engineering. He is currently Head of Strategy at RTVE Innovation Center. Regarding EBU he is Co-Chairman of the Strategic Program on Radio and, at national level, he is also member of the expert group dealing with ITU World Radiocommunication Conferences at the Spanish Secretary of State for the Digital Agenda. He met digital radio in 2000, when he became a member of the Spanish Digital Radio Forum and began to participate in their three working groups (technical, commercial and legal). He was also Head of Technical Planning at Radio Nacional de España (RNE), managing all its licences as well as all digital radio topics.

SESSION 7: PANEL DISCUSSION (MODERATED BY PETER MAC AVOCK)

16:30 – 17:30

Is the future of broadcasting being decided in 3GPP?

Roland Beutler (SWR) & David Hemingway (BBC)

WEDNESDAY 21 NOVEMBER

SESSION 8: PROUD TO PRESENT – 5G FOR BROADCASTING

09:00 – 09:20



5G-Xcast: bringing multicast and broadcast capabilities to 5G, an EU project

5G-Xcast project aims at enabling the use of multicast / broadcast technologies for 5G as a key enabler for supporting diverse set of verticals and disruptive use cases - including the future evolution of media and entertainment, public safety, automotive, internet-of-things. The talk will discuss the achievements in both access and core networks realized during the first year as well as the on-going work until the end of the project. The talk will also discuss the alignment of 5G-Xcast to the current development of 5G in 3GPP.

Dr Tuan Tran is research engineer at Expway. He is work package (WP) 4 leader of the 5G-Xcast project where the primary objective of this WP is to define the 5G converged core network architecture which combines fixed, mobile and broadcast networks and uses a mixed of unicast, multicast, broadcast transport and caching capabilities. He also participates and contributes to the 3GPP SA4 working group. He obtained his Ph.D. degree in computer science in 2014 from ISAE-Supaero, France. Before pursuing research career, he worked as a software engineer for 5 years.

09:20 – 09:40



The 5G-Xcast Showcase during the European Championships

The European Championships 2018 provided an opportunity for the IRT in collaboration with the EBU to show how audiovisual content produced in the state-of-the-art formats both live and on-demand can be distributed to large audiences in the 5G environment. The demonstration highlighted the following aspects:

- fixed/mobile convergence
- combined use of unicast and broadcast capabilities
- use of standardized 3GPP interfaces to deliver MPEG-2 Transport Stream including live TV programmes and HbbTV service information
- free-to-air reception

- reception on both mobile/portable user devices and stationary TV-sets

This demonstration shows the value of point-to-multipoint capabilities in 5G, especially for a large-scale distribution of the popular content such as premium sports. The 5G-Xcast project is defining the solutions that will help to ensure that such capabilities are available in the future 5G networks.

Dr. Jordi J. Gimenez is a Senior Research Engineer at the Institut für Rundfunktechnik (IRT), the R&D institute of ARD, ZDF, DRadio, ORF and SRG/SSR. He is in charge of the 5G-PPP project 5G-Xcast at IRT, focused on the design of the multicast and broadcast capabilities for 5G technology with a particular focus on trials and demonstrators. He has actively participated in digital TV technical forums such as DVB and ATSC, and several EBU technical groups, on topics related to physical layer design and processing, and network planning of terrestrial broadcast systems. He is currently engaged in 3GPP working on the RAN optimization of eMBMS for Terrestrial Broadcasting.

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09:40 – 10:00



Yleisradio's 5G projects

5G mobile networks and broadcasting, audience are moving, hybrid distribution landscape, multicast, unicast.

Jarkko Korhonen (YLE) Background in mobile services, software development, enterprise architecture and new in broadcasting environment. Very development oriented thinker.

10:00 – 10:20



Rai's trial at European Championships

During the European Championships 2018 the Rai centre for technology innovation and experimentation (Rai CRITS) organised two demonstrations in its test bed in Aosta Valley to showcase and test future broadcast formats and systems. Thanks to the joint activity of EBU Members in the work of 3GPP, Release 14 defines a new FeMBMS profile with characteristics well aligned to technical and functional requirements coming from the broadcast sector to deliver regular mobile TV services. Rai CRITS and the Technische Universität Braunschweig have together organized a technology trial of these advanced wireless communications technologies towards 5G to demonstrate how state-of-the-art mobile technologies could be used for the distribution of public service media content and services to mobile devices on conventional terrestrial broadcast network infrastructure, meeting specific broadcast

requirements, such as free-to-air delivery, wide-area coverage and cost-efficient distribution to mobile devices. A second demonstration implemented in Aosta by Rai at Rai regional premises was the live distribution of the UHD/4k High Dynamic Range (HDR, BT.2100-HLG) and High Frame Rate (HFR, 100 Hz) Berlin feed using DVB-T2 and HEVC encoding. These technologies are the candidates to replace the current DVB-T terrestrial format in Italy after the release of the 700 MHz band in 2022. Testing, for the first time, HFR mode during a live sports event enabled assessment of its impact on image resolution and motion blur during highly dynamic scenes.

Vittoria Mignone graduated from Politecnico di Torino in 1990. She has been with RAI since 1992, involved in the studies for the definition of the DVB Standards for digital television by satellite, cable and terrestrial channels. Her activities are in the field of physical layer system definition, particularly concerning advanced digital modulation and channel coding techniques for satellite and terrestrial transmissions, with participation to several European Research and Development Projects, and standardisation bodies. She is currently involved in studies and experiments on converged networks and systems. She is author of patents and technical papers for leading international journals and conferences.

10:20 – 10:40



'5G Today' – Large-scale TV transmission trials in Germany

Manfred Reitmeier (Rohde & Schwarz) working for Rohde & Schwarz since 1987 - started as an R&D Engineer for Analog TV Transmitter - Head of R&D lab "Software for TV Transmitter" in 1997 - Director R&D Transmitter Systems in 2009 - Senior Director R&D Transmitter Systems in 2015

10:40 – 11:00



5G RuralFirst

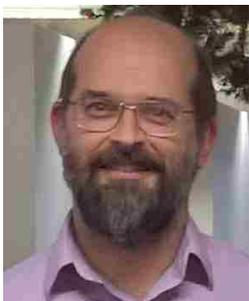
This presentation will give an overview of the 5G RuralFirst project and, in particular, give more details on the use case the BBC is leading that explores the potential of 5G to deliver broadcast content.

Andrew Murphy has worked at BBC Research and Development for over 18 years, joining the department directly after graduating from Cambridge University with a Masters degree in Engineering and Information Sciences. He has led the development of both hardware and software to support research in a number of fields and has worked within standardisation groups such as Digital Audio Broadcasting, Digital Radio Mondiale, Digital Video Broadcasting and 3GPP. He is currently leading BBC R&D's work into mobile broadcasting over 4G and 5G technologies.

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SESSION 9: PREPARING FOR THE FUTURE

11:45 – 12:05



New planning and sharing studies for broadcast distribution

A short summary of the work of the EBU/BNE group SPT (Sharing and Planning of Terrestrial services). An introduction explaining how SPT was formed from the amalgamation of EBU groups SBD and BNP. A review of work the group is currently undertaking then as it is the topic of interest a description of some of the issues around planning of FeMBMS (LTE-B) for use by broadcasters.

Mark Jordan (Arqiva) started his working career at C&S antennas, followed by 3 years at Marconi Antenna systems. Moved to BBC Transmission in 1990 to work in technical investigations; looking at problems in antenna systems, LF through to UHF, using computer modelling. Shortly after joining the BBC attended his first meeting at the EBU in 1991. When BBC transmission was privatised in 1996, with David Hemingway and Sara Tappenden, set-up the company's broadcast spectrum planning team which became involved in the planning of the UK's DTT launch network and subsequent the enhancements to the network. In 2000 took on the role of spectrum planning consultant and headed

the development of the company's version of the UK planning tool (UKPM). Involved in the planning for analogue TV switch-off attending both RRC-04 and RRC06 and subsequent 800 MHz clearance. Developed the frequency plans for UK HD muxes 7 & 8 using 6 channels of 600 MHz spectrum and the foundations of the UK 700 MHz clearance plan. Following WRC-12 became involved in preparations for WRC-15 representing broadcaster interests in ITU and CEPT groups. In 2017 took on co-chairmanship with Dr Walid Sami of the joint EBU/BNE group SPT (Sharing and Planning of Terrestrial services).

12:05 – 12:25

Assessing different delivery options for broadcast

Roland Beutler (SWR)

12:25 – 12:45



All you need to know about Open.Radio

Marcello Lombardo is a Project Manager at the EBU Technology & Innovation department. He joined the European Broadcasting Union in 2014 as Project Manager. He works actively on Spectrum management for Digital Terrestrial Television, Digital Radio and Hybrid Radio. He holds a masters degree in Electronics/Robotics Engineering and his master thesis work was published in 2009 with the title "Policy Gradient Learning for a Humanoid Soccer Robot". In 2013 he also became a PMI certified Project Management Professional. Through the years he nurtured transversal experience in various technology fields such as telecommunications (Ericsson), railway automation (Bombardier), aerospace and missile flight (MBDA).

12:45 – 13:00

Wrap-up

Elena Puigrefagut & Darko Ratkaj (EBU)
