EBU

OPERATING EUROVISION AND EURORADIO

ACTIVITY REPORT 2015 -2016

TECHNOLOGY & INNOVATION

JUNE / 2016

INTRODUCTIONS

Dear Colleagues,

Established on 12 February 1950, the European Broadcasting Union (EBU) is the world's leading alliance of public service media. With more than 60 years' experience, the EBU operates in 123 languages to a potential audience of 1 billion people.
It is therefore my special honour and great pleasure to welcome you – our Members, Associate Members, Sister Unions and Guests – to the EBU in Switzerland for our annual Technical Assembly.

The city of Geneva is known as the "smallest of big cities" or the "city of peace" as it hosts a large number of international organizations and permanent missions. At the centre of Europe's capital cities, Geneva is a dynamic, innovative and inspiring place to live, work and visit.

At a time when we are confronted with an influx of technological developments and public service media organizations face increasing competition from international actors, it makes sense for us to join forces to consider our future together. We hope that the next two days will bring us plenty of opportunities to learn from each other, showcase our achievements over the last year and consider the future of technology and innovation in public service media.

I am delighted to report that we have an exciting programme ahead of us. Gilles Marchand, Director General, Radio télévision suisse (RTS) will set the scene for us with his take on the future of broadcast media followed by a special session on EBU activities.

For the first time ever, we will have a panel discussion on women and technology, including key actors from RTR, IRT, SMPTE, Radio Bremen and more!

We will examine the latest technology trends, the future of media distribution and high dynamic range as well as a series of Proud to Present from EBU Members and Associates. 2016 is also an important year for us as we will hold our elections for the Technical Committee.

In this spirit, I extend my wishes for a successful Technology Assembly.

I look forward to meeting with you and a warm welcome to Switzerland.

Kind regards,

Simon Fell
Director of Technology & Innovation, EBU

"Welcome to the 2016 Technical Assembly. As always, this gathering provides an invaluable opportunity for public service technology leaders to come together to share ideas, challenges and aspirations. This year we will have the added benefit of being on the premises of the EBU Headquarters in Geneva.

These are challenging times for public service media, in general, but certainly in a technological sense. One of the biggest challenges is how to produce the best content in a rapidly changing environment both efficiently and effectively to our different audiences. Supporting innovative formats, new forms of storytelling and making use of new tools to engage our 'viewers' and 'listeners' are bringing exiting new opportunities that we can grasp. Innovation in both production and distribution will change our business from broadcasting radio and television into publishing public service media content. This also means we have to change and be innovative. The Technical Assembly gives us the opportunity to learn of these new developments and also gives us a chance to learn from each other, share our experiences and work together on new plans for the future.

Your Technical Committee has been hard at work on the approved Roadmap and Strategy which has helped us focus on the changes we have to make. Our approach is very much about collaboration, co-operation and also building on our unique relationship with the industry in which we operate.

While it is important for us in public service media to make our case at a political level (and we do so with our colleagues from the other EBU departments and committees), our focus in the Technical Committee is on how to achieve the international standards necessary to operate our business and incorporate our requirements into that process. We believe that there is no more powerful mechanism than our collaboration on this. In doing so, we come up with new ways to demonstrate our public value both through our high quality content and also in our sustainable business operations.

In this Technical Assembly, we will hear results of the ongoing collaborative projects in which you or your colleagues take part in and that form our Technology & Innovation Workplan that you approved last year in Poland. These results are therefore your results. It will be great to discuss them, what they mean for your remit and organization and how we can further them. I look forward to meeting you and speaking with you in person."

Egon Verharen
Chairman of the EBU Technical Committee/ Assembly, NPO

"A warm welcome to you at the EBU in Geneva! When the Technical Assembly convenes in Geneva this year it is right at the heart of where EBU Members gather frequently to conduct substantial work in various technical fields relevant for public service broadcasters.

The technical environment for broadcasters shows a high dynamic, which creates opportunities – but also uncertainty and lots of questions. At the same time broadcasters strive to deal with limited budgets and a diversification of services to be offered to consumers.

The EBU Technical Assembly aims to provide you with a platform to get up-to-date information about current activities and also the opportunity to get in contact with other Members. I would be happy if the environment encourages active discussions, sharing of experience, and feedback to better shape our work.

Under the umbrella of the Technology & Innovation Workplan, EBU Members work on a large range of subjects. Feedback is important for the EBU Technical Committee to guide the evolution of the topics to which the EBU gives a forum to discuss, provide guidance to Members, and to create impact in the industry.

Understanding technical developments and, in particular, the implication these might have on broadcasters as an industry, but also on each individual organization is important. As competition grows and public service media are threatened, the EBU is the best place to join forces. Every individual who brings in his/her experience and expertise is very valuable: The strength of broadcasters in the EBU is the aggregation of all forces even if very small and limited to those in an internationally powerful position.

I wish you informative presentations, fruitful discussions with other Members, and relaxing side-talks around this year's EBU Technical Assembly such that you take home lots of useful information and contacts, but also the spirit that by sharing and working together we have a powerful community which gets heard in the international technical environment."

Klaus Illgner-Fehns, IRT
Vice-chairman of the EBU Technical Committee

DISTRIBUTION HIGHLIGHTS

DAB+ SMARTPHONE

Radio is unique in our lives: whether we're at home, in the office or on the move. EBU prioritizes radio reception at home, in cars and on smartphones. We were involved in the launch of the first DAB+ enabled smartphone this year – the LG Stylus 2. For this to be a game changer, we needed to ensure that the API is accessible to app developers. EBU Members are working with operators and vendors in their respective markets to highlight the importan of radio in smartphones.

PROJECT LOGO FOR HYBRID RADIO

Working with RadioDNS, we created a simple hybrid radio platform for EBU Members to manage their hybrid radio profiles. In a few easy clicks, radio stations can add basic information about their radio stations, like their station logo. This way, big screens in cars can display station logos and other hybrid radio information for FM and digital radio stations.

SPECTRUM IS THE LIFE-BLOOD OF TELEVISION AND RADIO DISTRIBUTION

And it's constantly under threat from mobile operators seeking to control all wireless distribution channels. World Radiocommunications Conference 2015 chose to keep UHF spectrum exclusively allocated to terrestrial TV services in 'Region 1'* until well into the 2020s. EBU Members and EBU staff were instrumental in preparing and facilitating these decisions, which will help us to continue to innovate and ensure that everyone has access to the benefits that new digital services bring.

MOBILE TECHNOLOGIES AND STANDARDS

5G

Our latest technical group seeks to build competence in the EBU community around current and future mobile technologies, including 4G/LTE and 5G. The EBU believes that 5G should be much more than a telecommunications operator technology. With an ever increasing demand for network capacity and the growing capabilities of mobile devices, it is essential that mobile networks are able to accommodate the needs of public service media. This group has already started to undertake in-depth studies on the topic and monitor the work of relevant standards bodies.

* ITU Region 1 comprises Europe, Africa, the Middle East (west of the Persian Gulf), and the whole of the territory of Armenia, Azerbaijan, the Russian Federation, Georgia, Kazakhstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey, and Ukraine

OVER THE TOP SERVICES (OTT)

Internet services are of growing importance to public broadcasters. We engaged with Members this year to investigate and assess opportunities to help them deliver competitive OTT services in the future. We explored potential collaborations in the areas of: content delivery, content exchange, technical platforms and video-on-demand services.

PERSONALIZATION

As online services become more popular, it becomes possible for broadcasters to personalize their offering to viewers using recommendation systems. Recommendations involve complex distributed systems and require a high level of tuning in order to best engage audiences. We worked with EBU Members to simplify this process and co-developed a prototype recommendation system for public service media.

CROSS-PLATFORM USER AUTHENTICATION

We are pleased to announce that the European Telecommunications Standards Institute (ETSI) has recently published a Technical Specification based on the EBU Cross-platform Authentication Protocol (ETSI TS 103 407). The publication is a direct result of many months of collaborative work done in our Strategic Programme on CPA and is a clear example of how the EBU and its Members are at the forefront of work on recommendation systems, big data analysis and tailoring services to suit different consumer habits.

NETWORK NEUTRALITY

It is important for public service media to continue to support and advocate for net neutrality to ensure their services are equally accessible by all on the internet. We continued to coordinate our efforts by developing EBU positions on network neutrality in the European Commission and in the Body of European Regulators for Electronic Communications.

PRODUCTION HIGHLIGHTS

SUBTITLING

We congratulated W3C for receiving a Technology & Engineering Emmy ® Award for the Timed Text Mark-up Language (TTML). TTML is the backbone of the EBU-TT subtitling format and is of key importance for making content accessible to millions of users across the world. EBU and Members created several open source software projects to stream, parse and render EBU-TT subtitles.

LOUDNESS

Based on the last five years of practical experience, we updated most of our Loudness specifications to help our Members create high quality audio mixes. The EBU loudness test set has been extended with new sequences to test equipment and to set a correct reference listening level.

QUALITY CONTROL

The online QC tool EBU.IO/QC received new features and now includes exporting QC Items in the FIMS QA format. In our Strategic Programme on QC we started a subgroup to study the application, advantages and challenges of IMF for broadcasters.

INTEROPERABLE MASTER FORMAT

An explorative study with a German university showed how IMF may be adapted to support broadcast codecs and metadata. We have highlighted this work to our Members during the EBU Production Technology Seminar and in various articles in the EBU Technical Review and tech-i series.

LINKED DATA FOR SPORT PRODUCTION

We are actively promoting semantic web technologies (a common framework that allows data to be shared and reused) to link data from events such as an athlete's performance and team results with our content. We developed a prototype for the Biathlon to demonstrate the potential of the technology and provided Members with briefings and training.

FUTURE AUDIO FORMATS AND RENDERERS

We continued to focus our audio work on three autonomous activities: FAR, PLOUD and FAME audio. We successfully steered the ADM and BF64 audio standards through the ITU-R, and we are now turning our attention to broadcasters' needs for a renderer to produce content based on audio objects. Next generation audio systems will employ audio objects to provide personalization and access services to enrich the immersive capabilities of UHDTV signals.

VRT LIVEIP PROOF OF CONCEPT

The world's first live production studio relying on IP-enabled equipment was developed. A successful co-innovation between VRT Sandbox, EBU and 10 technology partners, the studio won a "special recognition" award at the IABM Design & Innovation Awards at IBC 2015. LiveIP was also successfully used for a remote concert recording and a live-casted TV debate.

FUTURE NETWORKED SYSTEMS MICRO-WORKSHOP SERIES

We set up a new way to share early experiences among experts which includes a one day workshop with face-to-face meetings to tackle a tightly scoped issue. Ranging from remote-production and device management to use cases for an IP studio and network architecture, these micro-workshops attracted 15-30 participants on average with minimal administrative overhead.

360 DEGREE CAMERAS AND VIRTUAL REALITY

Broadcasters are continually looking for ways to enhance their content and engage their audiences. In collaboration with Members, the EBU is currently investigating this new technology and the ways it can be used for creating new, personalized content for audiences in the future. We had more than 10 demonstrations of virtual reality from EBU Members and manufacturers at this year's Production Technology Seminar and we are currently providing technical support to extend the current EBU News Exchange Platform to support this new technology.

IP STUDIO ROADMAP OF OPEN INTEROPERABILITY

We produced a simple but comprehensive roadmap tool to help Members plan investments for their upcoming IP studio infrastructure. The tool is a living document that reflects continuous evolution in the market by the experts of the EBU Community.

ADVOCATING FOR BROADCASTER FRIENDLY SOLUTIONS

The FIMS project prevents vendor lock-in and favours interoperability in an open-source framework for future proof process and service oriented production.

MEDIA CYBERSECURITY

We focused our activities on helping Members protect themselves against primary types of attacks: Distributed Denial of Service (DDoS). We created EBU R141 for media companies to provide a set of countermeasures against DDoS. We emphasized our security policies and awareness campaigns toward broadcast equipment manufacturers and developed EBU R142 which provides best practice security guidelines for connected TVs. Last but not least, EBU R143 provides a minimal set of requirements for security on broadcast systems. The latter can serve broadcasters as a security benchmark to be included in broadcast equipment requests for proposals and tenders.

THE FUTURE IS SEMANTIC

The Class Conceptual Data Model, EBUCore and EBUSport are three metadata solutions implementing web technologies to model workflows and manage content in its semantic context. This year we developed a comprehensive data model for sport based on the IOC Open Data Format and compatible with any other data format.

ULTRA-HIGH DEFINITION (UHDTV)

We have worked to demystify the technology for Members and provided guidance on how it can be used in future productions and, eventually, services. We lobbied for the establishment of an international standard on high dynamic range and we showcased UHDTV technology at a variety of events including the International Biathlon World Championships where they trialled their first ever UHDTV (4k) production.

KEY ACHIEVEMENTS

DIGITAL CHANNELS

TECH.EBU.CH

Our yearly page views reached 485,000 in 2015.

Our average monthly downloads reached 43,000 per month in 2015.

TWITTER

Our Technology & Innovation followers grew by 20% in 2015.

FACEBOOK

Our Technology & Innovation followers grew by 48% in 2015.

LINKEDIN

Our Technology & Innovation followers grew by 20% in 2015.

NEW VIDEOS

DIGITAL RADIO AND CARS:

Mathias Coinchon, EBU, visited the Geneva Car Show to see how car manufacturers support digital radio in their latest models.

To access the video, see: **http://bit.ly/1TMPFmj**

VIDEO COMPRESSION 101:

David Wood, EBU, explains the basics of video compression with a sponge.

To access the video, see: **http://bit.ly/1TsOTI6**

CROSS-PLATFORM AUTHENTICATION:

In this video David shows how he shares a TV programme with his brother (Richard Wood) using the EBU Cross Platform Authentication (CPA) protocol.

To access the video, see: **http://bit.ly/24yFZUQ**

EVENTS

In 2015, we held a total of 13 different technology events. Of these... 7 events were our annual conferences and seminars, 3 events were technical workshops and 2 were technology webinars.
On average, we had a total of 110 delegates take part in each of our annual conferences.
We are pleased to announce that our audiences gave us on average an 81% event satisfaction rate in 2015.

MAIN EVENTS

- PRODUCTION TECHNOLOGY SEMINAR - 150 participants
- DIGITAL RADIO SUMMIT - 112 participants
- BROADTHINKING - 105 participants
- NETWORK TECHNOLOGY SEMINAR - 130 participants
- DEVCON - 88 participants
- FORECAST - 75 participants

IBC 2015

Each year, EBU Technology & Innovation is present at IBC with demonstrations, presentations and conference sessions. In collaboration with Members, we showcase the latest media technology innovations and join the debate about the many different challenges facing the electronic media and entertainment industry.

IBC NUMBERS

1
Visitor every minute on average to the EBU stand

55,128
Total attendees

18
IBC Daily articles

8
Technology demos

2
IBC technical papers accepted

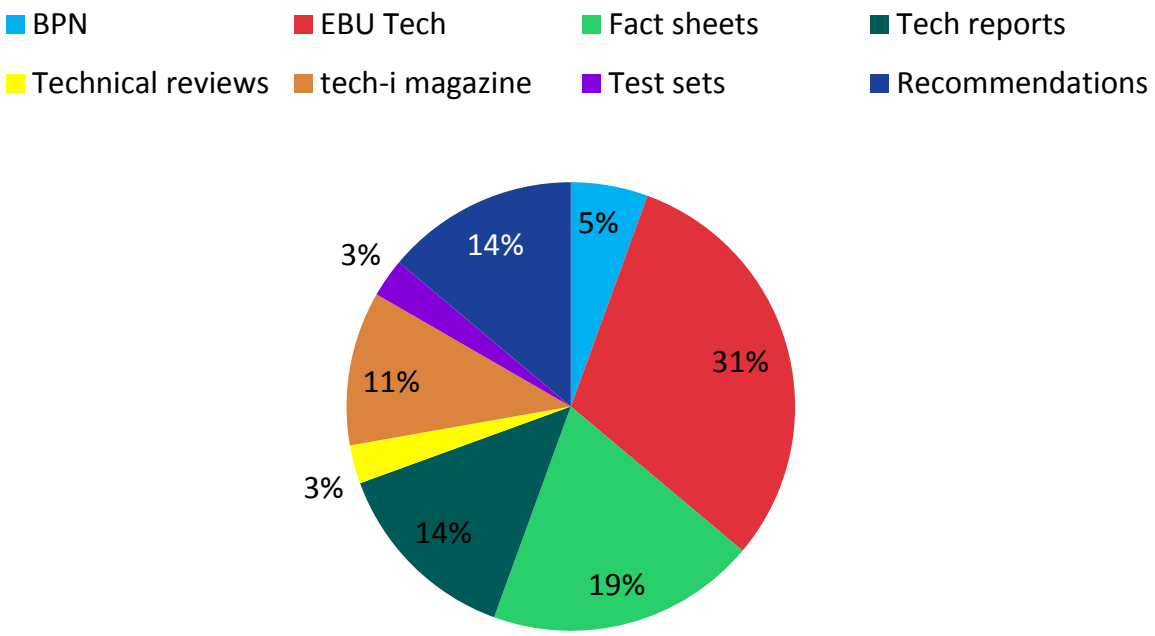
22
EBU technical articles posted on tech.ebu.ch

2
EBU organized sessions in IBC

16
Demo/Fact sheets distributed at IBC

PUBLICATIONS IN 2015

Last year, we published a total of 43 different technology publications.



OUR COMMUNITIES

AGILE SOFTWARE COLLABORATION

Broadcasters play a much wider role in fostering communities than ever before. As media technologies continue to develop and new applications become popular, audiences expect broadcasters to provide their content on a multitude of different platforms and devices. Being able to access the content with "no strings attached" or using a single sign on is a must. Our third EBU Developer's Conference tackled issues like this and encouraged developers to share their experiences from Members and leading internet companies.

INTEGRATED MEDIA PRODUCTION STRATEGIES

With multiple platforms and devices - web, TV, over-the-top content (OTT) and mobile phones - the way we consume media has drastically changed and new competitors have emerged. Broadcasters need to make major technological, editorial and organizational changes in the way they work to meet the expectations of their audiences. IMPS organized workshops to DR, ITN, NOS, NRK, Radio Bremen, RTL, SR, SRG SSR, SWR, VRT & RTBF, and YLE. Over 175 media professionals from 46 different Member organizations took part.

JOINT TASK FORCE ON NETWORKED MEDIA

At IBC 2015, the Joint EBU/VSF/SMPTE Task Force on Networked Media published a Reference Architecture: a foundational set of models and frameworks that the industry (e.g., VSF, AMWA, SMPTE) is currently using to build key standards that will enable open interoperability in the IP studio. The results will be lower costs for broadcasters and vendor independence.

A UNIQUE METADATA COMMUNITY

Media information management is an important aspect of broadcasting. As IT-based technology becomes the norm, it is essential that broadcasters use flexible models including web technologies as well as agile systems and architectures supporting adaptation to new business models workflows, and preventing vendor lock-in situations. Our annual MDN workshop was an opportunity for Members to get updated on the use of metadata and participate in in-depth technical presentations.

BROADCAST TECHNOLOGY FUTURES

The BTF Group is made up of Directors of leading R&D institutions from EBU Members and Associates. Participants meet once per year to share strategic developments and establish special collaborative projects such as on Higher Dynamic Range and High Frame Rates. Last year, the Group developed a joint strategic paper with the EBU Brussels Office on the future of R&D programmes of the European Commission called "Objectives for a potential scheme innovation and creativity in the audiovisual and radio sector." The paper was presented to high level EU officers.

EUROPEAN BROADCASTING UNION
L'Ancienne-Route 17A
CH-1218 Le Grand-Saconnex
Switzerland

T +41 22 717 21 11
ebu@ebu.ch

Learn more about the EBU at
www.ebu.ch

Learn more about the EBU Technology & Innovation at
www.tech.ebu.ch

Follow us on social media
Twitter @EBU_TECH
Facebook: EBU Technology & Innovation
LinkedIn: EBU Technology & Innovation