

# AUDIO FOR BROADCAST

Audio is an all pervasive, all important and, ironically, an almost unnoticed element in modern broadcasting. It just doesn't seem to attract the hype that's part and parcel of video in all its guises and flavours. In the second decade of the 21st century, audio will become much more immersive and will literally run rings around anything that video can simulate.

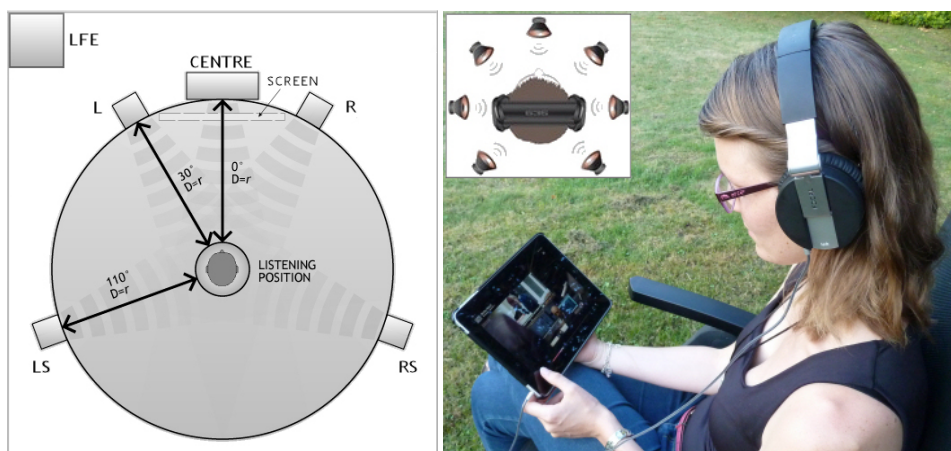
## BACKGROUND

First there was mono, then there was stereo – perfectly reasonable as we are born with two ears – and then there was multichannel cinema audio, designed to draw its audience into the middle of the action being watched on the silver screen, complete with room-shaking explosions.

Fast-forward several decades and we now expect to live the cinema experience at home, on rapidly enlarging (and smart) television screens – but also on second screens; tablets, smartphones and all manner of computers and gaming platforms.

Mono might be fine for the kitchen radio but it doesn't suffice for the home theatre experience, nor for the second screen and mobile audience. While many homes have 5.1 or 7.1 surround sound systems, installed more-or-less correctly around the family screen, it is interesting that the must-have product these last couple of years has been stereo headphones with a 3.5mm jack connector.

Public Service Media must target all these markets.



*We all do this, don't we?*

## THE CHALLENGE FOR PUBLIC SERVICE MEDIA

A fundamental challenge for any sort of content delivery to the end user is that the content provider cannot know the exact environment in which its content will be used, let alone the capabilities of the transmission path used to convey the content. Audio creation and delivery has been in the digital domain for many years now; a notable exception remains analogue FM broadcasting to motor vehicles.

- High value drama and sport is commonly produced in 5.0 for use with HDTV services, but this must be mixed down to, or accompanied by, stereo for use with a standalone television or tablet. Future services beyond HDTV, whether UHD-1 or UHD-2, may have a 10.1 or even a 22.2 multichannel audio environment. Vendors might welcome this, but it is potentially a nightmare for domestic harmony.
- Although conventional TV and radio use is thriving, a large and growing percentage of consumption is being done on smart mobile devices, typically using IP delivery and usually limited to two channels of audio – not exactly a prime environment for immersive soundscapes.

## WHAT IS THE EBU DOING?

The EBU's FAR (Future Audio Formats & Radio Production Systems) strategic programme is addressing all the above challenges, both alone and in the company of its ITU-R, SMPTE, AES and FAME partners. A number of project groups are active:

- BWF (Broadcast Wave Formats) is re-engineering the audio container to accommodate sufficient metadata to describe its content to any receiver. This decouples the creation and reproduction environments, producing a win-win situation for PSM and consumer alike.
- 3DA (3D Audio) investigates immersive audio, from binaural stereo (for mobile and handheld) through scene-based and object-based scenarios (for HDTV and beyond) – the common thread is the remarkable decoding ability of the human brain when provided with immersive audio content.
- AST (Audio Subjective Testing), as new audio codecs arrive, assesses them for use in the entire broadcast chain. The system currently under the microscope is the Opus codec.
- PLOUD, the origin of the hugely successful R 128 Loudness Recommendation, is the subject of a dedicated fact sheet.

The work of these groups will be distilled into updated and new EBU Tech documents and reports. These will be freely available in the EBU Technology & Innovation publications library ([tech.ebu.ch/publications](http://tech.ebu.ch/publications)).

## FIND OUT MORE

EBU Future Audio Formats & Radio Production Systems  
EBU Loudness

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