[Frank Melchior](#) - Applications of Digital Audio Effects in Broadcast: Yesterday, Today and Tomorrow

Abstract

The developments of broadcast technology are very related to the field of audio effects. In the early days a broadcast chain was more or less linear, only including different types of amplifiers. From there it has developed to a signal path with more and more signal processing. With the transformation into the digital domain digital audio effects have become important for the broadcaster on various levels.

Radio programmes like radio dramas or the BBC radiophonic workshop rely on audio signal processing and have transformed the use of audio effects into an art form. On the other side, processing driven by the needs of FM transmission like multiband dynamic processing are important for broadcasters to define the station sound and optimize coverage.

With the transformation of broadcasting systems in the future it is expected that also requirements and types of digital audio effects will change and develop further.

This talk will present some highlights on the history of audio processing in broadcasting and will try to highlight some potential options and needs for future developments in digital audio effects. Important aspects that will be discussed are the developments towards spatial audio effects, perceptual audio effects and personalized audio effects.

Bio

Frank Melchior is head of the audio research team at [BBC R&D](#). He received a Dipl.-Ing. (equiv. to Master of Science) in Media Technology from the Technical University Ilmenau and a doctoral degree on the topic of spatial sound design and acoustics from University of Technology, Delft, The Netherlands. Frank worked as a researcher and project manager at the [Fraunhofer Institute for Digital Media Technology](#). He has spent his professional career developing audio systems including wave field synthesis based systems and leading R&D teams on various topics including authoring, live sound applications, automotive audio and motion picture sound. Before he joined the BBC he was the Chief Technical Officer at [IOSONO](#), Erfurt, Germany, who develop spatial audio solutions. Frank's research interests include spatial array signal processing, spatial audio reproduction, user interface technology for audio systems and listening experiments.
Dr Frank Melchior is very passionate about finding the best way to bring the emotion and creative ideas embedded in sound to the listener.