CALL FOR PAPERS
IEEE Journal of Selected Topics in Signal Processing
Special Issue on Spatial Audio

Spatial audio is an area that has gained in popularity in the recent years. Audio reproduction setups evolved from the traditional two-channel loudspeaker setups towards multi-channel loudspeaker setups. Advances in acoustic signal processing even made it possible to create a surround sound listening experience using traditional stereo speakers and headphones. Finally, there has been an increased interest in creating different sound zones in the same acoustic space (also referred to as personal audio). At the same time, the computational capacity provided by mobile audio playback devices has increased significantly. These developments enable new possibilities for advanced audio signal processing, such that in the future we can record, transmit and reproduce spatial audio in ways that have not been possible before. In addition, there have been fundamental advances in our understanding of 3D audio.

Due to the increasing number of different formats and reproduction systems for spatial audio, ranging from headphones to 22.2 speaker systems, it is major challenge to ensure interoperability between formats and systems, and consistent delivery of high-quality spatial audio. Therefore, the MPEG committee is in the process of establishing new standards for 3D Audio Content Delivery.

The scope of this Special Issue on Spatial Audio is open to contributions ranging from the measurement and modeling of an acoustic space to reproduction and perception of spatial audio. While individual submissions may focus on any of the sub-topics listed below, papers describing a larger spatial audio signal processing systems will be considered as well.

We invite authors to address some of the following spatial audio aspects:

- *Capture of Spatial Sound*, use of different microphone arrays to record 3D sound fields
- *Loudspeaker and Headphone Reproduction of Spatial Sound,* including e.g. wave field synthesis, Ambisonics, arbitrary multi-channel loudspeaker setups, cross-talk cancellation systems, and personal audio systems
- *Spatial Sound Processing* including e.g. downmixing, upmixing, spatial sound enhancement, and reverberation effects
- *Sound Source Localization* **and** *Room Geometry Estimation*, advanced analysis of audio signals for reconstruction of the acoustic environment
- *Room Acoustics Modeling* covering all different modeling techniques ranging from computationally heavy wave-based techniques and geometrical acoustics to lightweight perceptually-based models.

Prospective authors should visit http://www.signalprocessingsociety.org/publications/periodicals/jstsp/ for information on paper submission. Manuscripts should be submitted at http://mc.manuscriptcentral.com/jstsp-ieee.

Manuscript submission	First Review Due	Revised Manuscript	Second Review Due	Final Manuscript
July 15, 2014	October 15, 2014	December 1, 2014	February 1, 2015	March 1, 2015

Guest Editors
Lauri Savioja, Aalto University, Finland (Lauri.Savioja@aalto.fi)
Akio Ando, University of Toyama, Japan (andio@eng.u-toyama.ac.jp)
Ramani Duraiswami, University of Maryland, USA (ramani@umiacs.umd.edu)
Emanuël Habets, Int. Audio Laboratories Erlangen, Germany (emanuel.habets@audiolabs-erlangen.de)
Sascha Spors, Universität Rostock, Germany (sascha.spors@uni-rostock.de)