For expanded coverage of this month's topic on "Audio" the following articles are available only in the Digital Edition of this issue. Visit the SMPTE digital library at journal.smpte.org to access the issue and to read these papers.

Monitoring and Authoring of 3D Immersive Next-Generation Audio Formats

By Peter Pörs

The next-generation immersive audio formats will require changes in the audio production workflow. Monitoring the audio along with authoring and verifying dynamic metadata will become a new challenge. New procedures for managing object-based encoded content similar to the personalization of services through the selection of alternative audio objects (such as commentator languages) need to be established. Loudness control during production and the loudness definition for the final output formats are other topics to consider. The next-generation audio (NGA) formats will offer a new surround sound experience, and the use of upmix, format rendering, and downmix algorithms will be essential for creating and monitoring the audio programs. A multichannel monitoring and authoring (MMA) unit must be compatible with upcoming immersive multichannel three-dimensional (3D) audio formats and should offer a platform to host all the emerging immersive 3D audio-encoding formats from different vendors.

Object-Based Audio for Live TV Production

By Steven A. Silva

Object-based audio (OBA) is the next exciting breakthrough in television (TV) production. It will provide personalization and an enhanced listening experience as revolutionary as sound was to motion pictures. The age of personalization has arrived, and TV consumers can view any program, at any time, and on virtually any media device. The next generation of audio encoders will have the ability to create OBA in TV production and post-production. The beneficial features of OBA include audio personalization for language selection, dialogue enhancements, and options for the hearing impaired. OBA provides the viewer with the ability to customize their viewing for any type of program in any viewing setting. The future audio codec technologies will enable audio production mixers, producers, and broadcasters to produce customized audio for the viewer. This process begins at the original mix location and continues through the broadcast chain to delivery on any consumer device. These encoders will have the ability to emit surround sound and immersive sound with more than 100 channels with objects either separately or in combination with each other. Scene-based audio will also be a feature of the next-generation codecs, enabling the mixer to represent the sound image instead of channels. This paper describes the evolution from current channel-based TV production to the next generation of multifeatured audio encoders with OBA and the potential benefits they will offer to all types of TV viewers.

Digital Object Identifier 10.5594/JMI.2016.2625578
Date of publication: 16 December 2016