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Proponents Submit Detailed Technical Descriptions for Next-Gen Television Audio Systems

WASHINGTON, March 10, 2015 – The Advanced Television Systems Committee (ATSC) has begun its technical review of three detailed proposals for a comprehensive audio system that will bring a more immersive audio experience for living room and mobile viewers with the ATSC 3.0 next-generation television broadcast standard that is now in development.

Significantly improving upon the capabilities of the current multi-channel broadcast digital television audio system, ATSC 3.0 audio is expected to "provide consumers with a more compelling, personalized and immersive experience," said ATSC President Mark Richer.

The ATSC is in the process of developing a next-generation ATSC 3.0 terrestrial television broadcast standard with advanced performance and functionality made possible by new technologies and strategies. This next-generation standard must provide improvements in performance, functionality and efficiency that are significant enough to warrant the challenges of a transition to a new system.

Three audio system proponents – Dolby Laboratories, DTS, and an alliance of Fraunhaufer, Qualcomm and Technicolor – have submitted detailed technical proposals for the audio subsystem for ATSC 3.0:

Proposal Summary from Dolby:

"The Dolby Audio system provides a practical, scalable and flexible set of tools built upon state-of-the-art technology and proven know-how. It enables the most efficient production, distribution and delivery of consumer broadcast experiences for all audiences today and in the future. This comprehensive solution spans content creation, distribution/interchange and consumer delivery that makes next-generation consumer broadcast experiences possible and
includes seamless support for today's consumer broadcast experiences. At the heart of the Dolby Audio system is Dolby AC-4, the next-generation emission codec. Rooted in generations of broadcast audio experience, Dolby AC-4 provides the content and device industries a strong foundation to collaboratively build leading-edge audio experiences that meet the needs of consumers of varied interests and abilities."

Proposal Summary from DTS:

"DTS:X is the next-generation object-based codec technology from DTS. This release is the successor to DTS-HD and marks another milestone in DTS’s long line of industry-leading sound innovations. DTS:X delivers the ultimate in flexibility, immersion and interactivity to listeners of all forms of entertainment. The DTS:X solution for ATSC 3.0 is an end-to-end broadcast chain that includes support for key elements including both audio channels and objects, advanced loudness and dynamics management, device and environmental playback processing, and is integrated with DTS’s Headphone:X technology. DTS:X will be delivered with the industry support and certification that has made DTS the trusted partner for industry professionals all over the world. Manufacturers representing nearly 90 percent of the home AV receiver and surround processor market, as well as several integrated circuit providers, have agreed to launch products supporting DTS:X in 2015. DTS is also working with a wide range of infrastructure partners to ensure broadcasters have choices when building a complete system."

Proposal Summary from Fraunhofer, Qualcomm and Technicolor:

"MPEG-H Audio is a holistically designed suite of functionalities built around a highly efficient core audio codec. The design offers a wide variety of technologies to address different requirements and to enable practical combinations of these technologies to form a versatile, yet well-defined, audio system. For the immersive reproduction of content it is possible to use channels based and/or sound scene based technology in combination with audio objects. Audio objects also add interactivity and personalization capabilities to the mix. Enhanced loudness and dynamic range processing allows adaption to device specific audio characteristics. Flexible rendering technology is included to allow the best adaptation of the content to the actual listening environment and compensate for misplaced speakers. For 5.1 surround sound, bitrates of 96 to 256 kbps deliver good to excellent quality, whereas immersive reproduction can be achieved with commonly used broadcast audio data rates of 384 kbps."

ATSC 3.0 Audio System Candidate Standard is Next
This summer, the three proposed systems will be tested discretely and in their entirety, as comprehensive, end-to-end systems for use as the audio layer for the ATSC 3.0 signal. The goal is to establish the ATSC 3.0 Audio System Candidate Standard this fall.

"ATSC 3.0 audio testing is expected to be the first in the world to examine immersive audio for a next-generation broadcast television standard. Immersive audio functionality enables high spatial resolution in sound source localization in azimuth, elevation and distance, and provides an increased sense of sound envelopment throughout the listening area," Richer explained.

In addition, ATSC 3.0 audio "personalization" will include enhancements to the control of dialog, use of alternate audio tracks and mixing of assistive audio services, other-language dialog, special commentary, and music and effects. The ATSC 3.0 audio system also will support both the normalization of content loudness and contouring of dynamic range, based on the specific capabilities of a user's fixed or mobile devices and their unique sound environments.

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About the ATSC: The Advanced Television Systems Committee is an international, non-profit organization developing voluntary standards for digital television. The ATSC member organizations represent the broadcast, broadcast equipment, motion picture, consumer electronics, computer, cable, satellite, and semiconductor industries. For more information visit www.atsc.org

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