



By Alan Lamshead

Standards for Audio

Many of my recent articles have focused on advances in the visual side of media (UHDTV, high dynamic range, imaging, displays, etc.). This month, the focus is on advances in audio, and the standards that are being developed to enhance the audio experience in cinema and in television.

In March 2010, SMPTE formed the Theatre B-Chain Study Group to study the current standards and practices regarding B-chain electroacoustic response and calibration, and make recommendations for work that SMPTE should undertake in these areas. During this 2.5-year study, the group tested many aspects of the subject. The study group submitted a report to the SMPTE Standards Committee in June 2012 with their observations and recommendations for further work. This resulted in the formation of the SMPTE Technology Committee on Cinema Sound Systems, TC-25CSS. A thorough analysis of the measured data was not possible during the tenure of the study group due to timing and resources. TC-25CSS was tasked to complete the analysis, and a final report was published in October 2014. (A copy of the complete report is available at <https://www.smpte.org/standards/reports>.)

Technology committee TC-25CSS has several current projects aimed at improving the quality of sound in conventional movie theaters, as well as standardization of new immersive 3D systems.

One project group is developing a Recommended Practice that codifies and expands currently-practiced measurement methodology using today's technology and analyzers into step-by-step procedure(s) for measuring and calibrating the frequency response and sound pressure levels of the B-chain sound system in indoor theater spaces.

Another project group is developing a "Calibration Reference Wideband Pink Noise Signal and Test File standard." The aim is to have a consistent pink noise signal for applications including theater testing. The pink noise characteristics defined in ST 202:2010 and RP 200-2012 will be used as a basis, and the algorithm used to generate the pink-noise file will be specified.

TC-25CSS also has a Working Group on Interoperability of Immersive Sound Systems in Digital Cinema. Its goal is to standardize a single object-based distribution file format and related protocols for interoperable playback into a variety of theater speaker configurations. This working group will identify areas of the D-Cinema architecture that require standardization to achieve interoperability of audio for systems with capability greater than 7.1. It will create a suite of engineering documents, including standardizing a single object-based distribution file format and related protocols for interoperable playback into a variety of theatrical speaker configurations. The group will also address recommended calibration methods for these audio playback systems as well as any other standards the group determines to be necessary to achieve D-Cinema interoperability. The working group is working closely with The Technology Committee on Digital Cinema (TC-21DC) in the creation of these standards.

Through all of these activities, SMPTE has been working closely with the Audio Engineering Society (AES) in order to gather additional expertise and to avoid overlap and duplication in the respective standards activities.

Upcoming Standards Meetings

16-20 September 2015 Eutelsat • Paris, France (Immediately following IBC)

7-11 December 2015 Turner Entertainment • Atlanta, Georgia, USA

As usual the meeting outcome report from each of these meetings will be posted on the SMPTE website in order to report publicly on SMPTE standards activities. You can download the most recent meeting outcome report here. (<https://www.smpte.org/standards/engineering-committees>)