



Alan Lamshead

Standards for Displays


About one year ago, I wrote about the incredible march of technology leading from the cathode ray tube technology (which was the dominant display technology from the 1930s until the end of the 20th century) to the current fixed pixel matrix (FPM) displays of varying technologies—plasma, liquid crystal display, and organic light-emitting diode to name a few, which dominate the television landscape in 2016. The continual appetite for “more pixels, better pixels, and faster pixels” has been driving the display industry for years, and the past year is no exception. An excellent article in this issue of the *Motion Imaging Journal* by Pete Putman gives an overview of the current state of consumer displays.

SMPTE has been actively working on developing an entire suite of new standards for these FPM displays in the 10E Technology Committee on Essence. The Reference Display Drafting Group’s mandate is to define technical parameters for displays and their viewing environment to

SMPTE has been actively working on developing an entire suite of new standards for these FPM displays in the 10E Technology Committee on Essence.

enable program interchange in professional high-definition television (HDTV) applications. The first two foundational documents were published in 2014. The first is ST 2080-1: *Reference White Luminance Level and Chromaticity for HDTV*. The reference white level and chromaticity defined in this standard are intended for critical viewing in a controlled environment. The second is RP 2080-2: *Measurement and Calibration Procedure for HDTV Display Luminance Levels and Chromaticity*. This recommended practice specifies methods to be used for routine measurements and calibration of absolute luminance levels and white point chromaticity

produced by HDTV displays. This group is currently developing ST 2080-3, a standard for the critical viewing environment and a recommended practice on measurement procedures for evaluation of reference displays.

Adjacent to the reference display work, a separate group in 10E is developing a new suite of standards (ST 2094) on content-dependent metadata for color volume transformation of high luminance and wide color gamut (WCG) images. This suite of standards will specify the semantics and representation of content-dependent metadata needed for color volume transformation of high dynamic range and WCG imagery to smaller color volumes (e.g., BT.709 or digital cinema) in mastering applications. All of this work is foundational to building display systems that provide enhanced capabilities for the future while maintaining compatibilities with displays of the (recent) past. 

UPCOMING STANDARDS MEETINGS

6-10 JUNE 2016

Hosted by CBS Television, New York, NY, USA

14-17 SEPTEMBER 2016 (Immediately following IBC)

Hosted by EBU, Geneva, Switzerland

5-9 DECEMBER 2016

Hosted by The Walt Disney Co., Burbank, CA, USA

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 at <https://www.smpite.org/standards/engineering-committees>.