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

Modeling of Achievable Contrast and Its Impact on HDR Projection in Commercial Cinema Environments

By Claude Tydtgat, Dirk Maes, Goran Stojmenovik, and Augustin Grillet

There is a growing interest in high dynamic range imaging for cinema projection applications. It has been reported that the observable cinema contrast ratio is determined not only by the native projector contrast but even more by various parameters such as the projection lens, port window, screen, theater setting, and audiences. We have derived a mathematical model to characterize the influence of these parameters and to assess their relative importance as a function of the projected image content. Furthermore, a fast measurement method was developed to determine the various parameters across different theaters, providing a good match with our model.

Extended Image Dynamic Range System for UHDTV Broadcasting

By Yuichi Kusakabe, Yoshitaka Ikeda, Noriyuki Shirai, Kenichiro Masaoka, Takayuki Yamashita, Yukihiro Nishida, Tetsuomi Ikeda, and Masayuki Sugawara

Japan Broadcasting Corporation (NHK) has been developing 8 K Super Hi-Vision (SHV), a member of ultra-high-definition television (UHDTV). This can provide an increased sense of presence and realness to viewers. 8 K SHV has system parameters of 7680 × 4320 pixels, 120 Hz frame frequency, and wide color gamut. With the addition of an extended image dynamic range feature, it is expected that 8 K SHV can be further enhanced to become the true ultimate TV system. We first discuss requirements for extended image dynamic range TV systems. Then, we propose the essential system parameter values based on the requirements. We introduce the specific parameter of video level corresponding to reference white to address highlights specifically. The proposed system parameters are designed with consideration of compatibility with existing workflows and infrastructure. We conducted an experiment to examine the influence of peak display luminance level on picture production and confirmed that production practices should be substantially changed to fully exploit the display capabilities of the increased luminance levels. We also conducted experiments to determine the required conditions of black level and peak luminance level of displays in various viewing environments.

ERRATA

On the March 2016 cover, Online title, "UHD in a Hybrid SD/IP World" should read: "UHD in a Hybrid SDI/IP World." In the same article online, p. 6, last paragraph reads: "As can be seen from **Fig. 4**, the encapsulation process adds about 6% overhead to the raw SDI data stream when transported as IP packets in accordance with ST 2022-6 (no FEC)." Should read: "As can be seen from **Fig. 5**, the encapsulation process adds about 6% overhead to the raw SDI data stream when transported as IP packets in accordance with ST 2022-6 (no FEC)."

The article is located online at http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7436734&filter%3DAND%28p_IS_Number%3A7436716%29

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