



Introduction to the **SMPTE 2015 Progress Report**

By Matthew Goldman, *SMPTE Executive Vice President*

The 2015 Progress Report marks another year of progression within SMPTE and the motion imaging industries as a whole. As we approach our centennial year, the Progress Report provides not only a vision of where the motion picture and television industries are heading in their second century, but also a reflection on how far we have advanced in the past 100 years.

The definition of television itself has morphed from the communal display device in the living room or lounge, and its supporting broadcast ecosystem, to a “viewing experience.” The viewing experience expands from traditional television roots to branch out to highly-desired video content viewed on personal electronic tablets and smartphones, and the associated ecosystems to support the same. The new ways that consumers consume video content has impacted almost every aspect of the motion picture and television industries. Changes always bring commercial and technical challenges, but they also bring excitement and rewards to the SMPTE community and beyond, as we develop new solutions to exceed consumers’ insatiable appetite for interesting motion picture and television content.

A summary of the activities of the SMPTE Technology Committees is included. We are also pleased to include almost a dozen industry reports from leading experts covering a wide range of very topical subjects in the motion image, sound and metadata ecosystems. One of the “hottest” areas of interest is enhancing the immersive viewing experience, whether it is for realism or for pure entertainment. Ultra-High-Definition (UHD) has arrived, but it mostly has been limited to increased spatial resolution over HDTV. With coordinated interests occurring in multiple industry groups and standards-setting organizations, the main focus of UHD is now about adding enhanced viewing experience features such as high dynamic range (HDR), wide color gamut (WCG), increased sample precision, and high frame rate (HFR). HDR is often discussed in reference to the combination of HDR, WCG, and increased sample precision working together for realism. As such, hereafter, I will refer to these collectively as “HDR+” for simplicity.

The American Society of Cinematographers reports on the advances in HDR+ with camera image capture and image content display, as well as HFR shooting. The Digital Video Broadcasting Project provides an update on their new standards and their activities in terrestrial broadcasting, satellite broadcasting, receiver interfaces, next-generation audio, and UHD TV. The Association of Radio Industries and Businesses in the Field of Broadcasting reports on the evaluation method for the quality of video and sound in program content, and their four R&D groups, including a myriad of UHD TV standards. The Advanced Television Systems Committee provides an overview of ATSC 3.0, their next-generation TV system, as well as an update on legacy and evolutionary system activities and advancements. The Consumer Electronics Association reports on the fundamental changes happening in the way TV programming is delivered, and

provides growth projections for UHD TVs. A summary of their recent standards activities is also given, including HDR static metadata.

In reports on “Laser Illuminated Projectors” and the “Future of Digital Cinema,” a detailed comparison of Xenon and Laser light sources is given and the challenges of using laser projection is described. A report on “Next Generation in Consumer Displays” reviews emerging technologies and trends. It also discusses some of the current disconnects in UHD technology and changes that are occurring. A report bringing us up to date on (OTT) Over-the-Top in 2015, provides an overview of this technology and its impact on traditional TV services; the current state of OTT services, including workflow and formats; and the emerging challenges the industry faces.

In another one of the “hottest” topics being discussed in our industry today, “A Review of the Technology and Migration Patterns for IP/IT Media Infrastructures” describes the technologies that are essential to the transition of broadcast infrastructures to information technology infrastructures. The “Virtual Reality Primer with an Emphasis on Camera-Captured VR” presents a different “twist” on the immersive viewing experience versus that described by HDR+ and HFR. The primer gives a detailed overview of VR; market forecasts; and the status of workflow, distribution and standards. Lastly, the Moving Picture Experts Group and Video Coding Experts Group provide an update on their activities related to the development of the High Efficiency Video Coding (HEVC) standard, including the investigation into processing and more efficiently compressing HDR+ video streams.

Many of the topics overviewed in this Progress Report will be covered in detail in expert presentations and panels at the SMPTE 2015 Annual Technical Conference and pre-conference symposium, 26-29 October in Hollywood.

I hope you find this Progress Report as interesting and insightful as I did.

Matthew Goldman is Senior Vice President Technology, TV Compression, at Ericsson, where he is focused on video compression related products and solutions. He has been actively involved in the development of DTV systems since 1992. He was a prominent participant in the Moving Picture Experts Group and he continues to be influential in other industry organizations including SMPTE, the Advanced Television Systems Committee, the Digital Video Broadcasting project and the Society of Cable Telecommunications Engineers. Four of his projects have been later recognized by Technology & Engineering Emmy® Awards. Mr. Goldman received bachelor (high honors) and master of sciences degrees in electrical engineering from Worcester Polytechnic Institute. He holds six patents related to digital video transport. A SMPTE Fellow, he is also a senior member of the IEEE and an inductee of the Academy of Digital Television Pioneers.