



S. Merrill Weiss

Weiss is a consultant in electronic media technology, technology management, and management. Much of his 40-year career has been devoted to the development of new television and advanced imaging, and communications technologies.

In 1981, he produced the tests that led to the first international digital television standard. He later conceived the approach that permitted the industry transition from 8-bit to 10-bit digital video systems and enabled the widespread use of serial digital interfaces as embodied in the SMPTE Serial Digital Interface (SDI) standards. Weiss was also instrumental in instigating and developing the first standards to deal with metadata.

A SMPTE Fellow, Weiss served as SMPTE Engineering Director for Television from 1996 to 1999. He has chaired seven major SMPTE Working Groups and technology committees, and also served as co-chair of the joint SMPTE-EBU Task Force on Harmonized Standards for the Exchange of Program Material as Bit Streams.

Weiss was the recipient of the Society's David Sarnoff Gold Medal Award in 1995 and the Progress Medal in 2005. He has published several books and well over 100 papers.

Registration and Identification Technology (R30)

Chaired by S. Merrill Weiss

The committee on Registration and Identification Technology (R30) is responsible for developing procedures, structures, and documents enabling the use of registers and identifiers in SMPTE standards and elsewhere in the motion imaging industry. Registers are lists and tables of information that can easily be referenced and updated. R30 also has responsibility for the online publication through the SMPTE Registration Authority of registers, identifiers, and other data from all SMPTE standards.

During the recent work period, R30 has updated SMPTE 298: Universal Labels for Unique Identification of Digital Data. SMPTE 298 serves as the fundamental identifier for a wide range of data and metadata structures, types, elements, and values, as defined in many SMPTE standards and stored in a number of registers. It has been updated to take account of the latest forms of expression and referencing in the more general world of information technology. As of this writing, SMPTE 298 has completed balloting and is undergoing comment resolution.

R30 completed its work within the recent work period on a new standard (to become SMPTE 2029, once fully approved) "Uniform Resource Names for SMPTE Resources." The new document specifies the form of references to SMPTE Universal Labels (as defined by SMPTE 298) using the Uniform Resource Names (URN) namespace that is commonly applied in the information technology domain. The new standard is currently awaiting approval by the Standards Committee. Concurrent with writing the SMPTE URN namespace document, R30 has worked to obtain registration of the SMPTE sub-namespace that is specified in the new SMPTE document in the URN register of the Internet Assigned Numbers Authority (IANA).

Also during the recent work period, R30 completed work on the initial phase of search capability for the Metadata Dictionaries for which the SMPTE Registration Authority website is the repository. The new functionality of the SMPTE-RA website includes the ability to search the registers held there by a variety of characteristics. It provides for the inclusion of many additional registers going forward. It also adopts an underlying XML schema structure that will permit both inputs and outputs in that format, as well as the future provisioning of web services access to the information maintained on the site.

Given the potential complexities of digital systems and the fact that standards for digital systems will continue to evolve, it is important to make it possible for equipment and systems of the future to update themselves with new register entries without operator intervention. The addition of web services to the SMPTE-RA website will make the use of many new techniques for a variety of electronic motion imaging applications practical and efficient, including television and digital cinema. The greatest impact of the web services, once fully implemented, will be in supporting efficient workflows in production, post-production, and distribution operations and in minimizing operator effort.

For a period of years, R30 has worked cooperatively with a working group of the International Organization for Standardization (ISO) to develop an identifier for completed works, such as motion pictures, television programs,

commercials, and the like—now known as the International Standard Audiovisual Number (ISAN). Balloting on ISAN has taken place within the relevant ISO groups and was completed during the recent work period. The ISAN suite of documents should be fully approved within the time frame of publication of this report. A registration organizational structure has been established by ISO to support the implementation of ISAN.

Ongoing work within R30 includes the incorporation of new registers into the information available through the search mechanisms of the SMPTE RA website, the development of the web services method of publication for the site, the preparation of processes for making management of the registers housed on the site easier, and testing the new functionality. In addition, R30 will continue its work to write SMPTE procedures that will make it easier for other committees to easily incorporate registers into the standards documents that they prepare.



Jim Wilkinson

Wilkinson began working in broadcasting at IBA's Engineering Headquarters in 1974. During his time with the IBA, he worked on DICE, video compression using DPCM at 34 Mb/s and other projects. In 1979, he joined the Advanced Development Laboratories of Sony Broadcast as one of the founding members and pursued many activities over a period of 28 years, including digital video recording, image compression and processing, metadata and file/stream formats. He has been awarded over 80 patents; and has participated in standards activities in the AES, SMPTE, and EBU. He was an active member of the EBU/SMPTE Task Force and is now equally active within the SMPTE engineering committees. In 2006, Wilkinson retired from Sony and now works as an engineering consultant in the areas of video and sound with an interest in compression and file/stream formats.

Television Image Technology (I23)

Chaired by Jim Wilkinson

New consumer display technologies continue to make an impact on the professional monitoring side of the business. The work of David Bancroft on documenting the performance of consumer display technology has now seeded research in the EBU and ARIB. Since the single benchmark characteristics of the CRT are rapidly being supplemented by other consumer display technologies, the work is focusing on documenting a virtual display technology that emulates the CRT. The aim is to be able to measure the screen output from the new display types against a virtual CRT reference. Thus, consumers should be able to see the pictures as intended by the content producer. From the content production side, it also provides a virtual reference for non-CRT monitors. The work continues and is expected to benefit both the production and consumer communities.

At the March 2007 meetings, Mr. Mitani gave a presentation of the NHK super-high-resolution system. Many readers might have seen this presented at the trade shows, particularly NAB 2006 and IBC 2006. Although deployment is on an ambitiously lengthy timescale, the very nature of the work drives us to think about the limits of imaging technology. It also includes a 22.2 surround sound system that gives a real sense of 3-D sound.

At the other extreme of scale, mobile/cell-phone operators are still interested in making video services available to mobile phones. It is believed that all the necessary standards are in place for the extraction of small images from SD and even HD sources, but this is still an infant technology so we continue to listen for feedback from those who create content for mobile phones.

A small, but important recent input to I23 was that the nonlinear transfer equations used by the various SMPTE (and ITU) standards are sufficiently accurate for 10-bit, video but may not be sufficiently accurate for 12-bit video at values close to the point where the logarithmic transfer characteristic switches over to the linear transfer characteristic. No change is required at this time, but those wishing to implement 12-bit video systems will require extra precision in the transfer to avoid errors and should contact I23 for advice.