

SMPTE Standards Webcast Series
SMPTE Professional Development Academy – Enabling Global Education



SMPTE Standards Committee Meetings Update

Alan Lamshead, SVP Standards
Peter Symes, Director of Standards and Engineering
Howard Lukk, Director of Engineering and Standards

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SMPTE Standards Update Webcasts



Series of monthly 1-hour online, interactive webcasts covering select SMPTE standards

Free to everyone

Sessions are recorded for on-demand viewing convenience (YouTube)

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Your Host



Joel E. Welch
*Director of Education
SMPTE*

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Today's Guest Speakers



Alan Lamshead
SMPTE Standards Vice President
SMPTE Fellow

SMPTE Board of Governors



Howard Lukk
Director of engineering and
standards

SMPTE Staff



Peter Symes
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SMPTE Standards Report



SMPTE Standards Committee Meetings
7-10 June 2016
New York City, USA
Hosted by CBS

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June Plenary

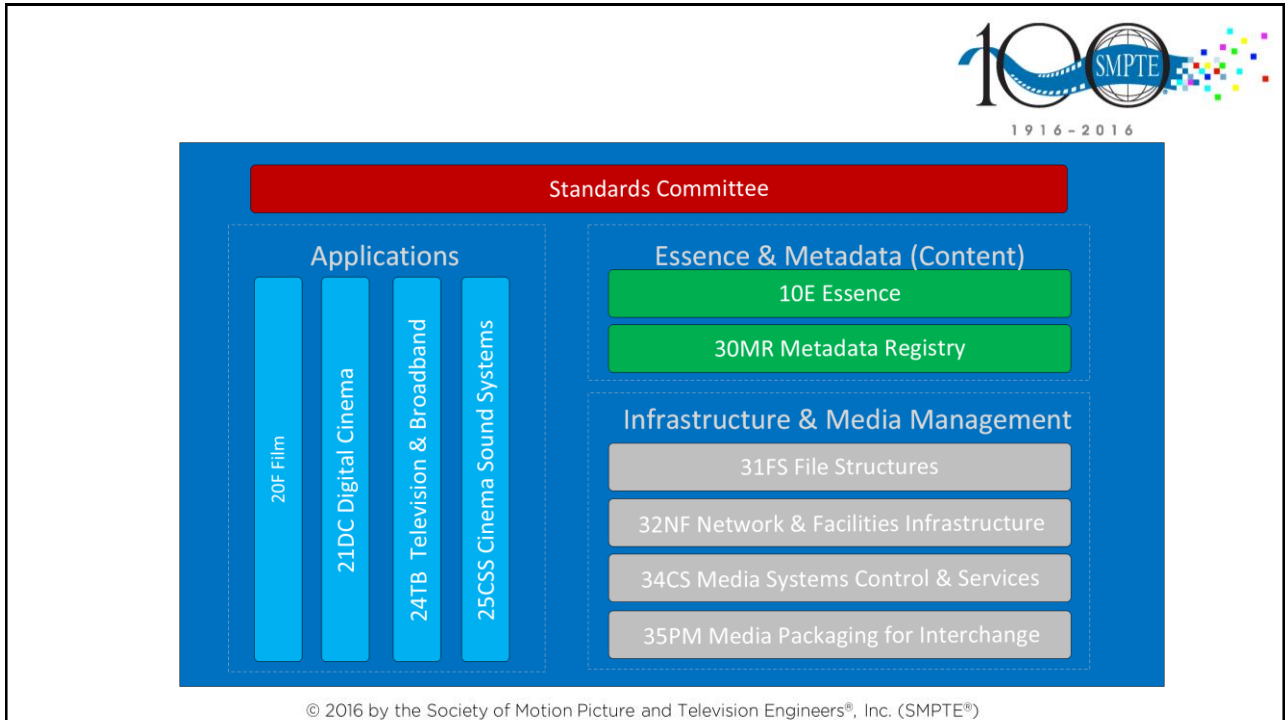


Nine SMPTE Technology Committees and 11 subgroups scheduled meetings at this round.

Over 70 members attended in person over the four days, and there was additional participation by remote access.

There are currently one hundred ninety active projects.

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SMPTE Groups

- Essence (10E)
- Digital Cinema (21 DC)
- Television and Broadband Media (24TB)
- Cinema Sound Systems (25CSS)
- Metadata and Registers (30MR)
- File Formats and Systems (31FS)
- Network and Facilities Architecture (32NF)
- Media Systems, Control and Services (34CS)
- Media Packaging and Interchange (35PM)

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Essence Technology Committee **(TC-10E) chaired by Ed Reuss and** **Annie Chang**



The application of the general scope as it applies to electronic capture, generation, editing, mastering, archiving, and reproduction of image, audio, subtitles, captions, and any other master elements required for distribution across multiple applications

TC-10E documents published last quarter :

SMPTE RDD 35:2016, TICO Lightweight Codec Used in IP Networked or in SDI Infrastructures

Amendment 1:2016 to SMPTE ST 2048-1:2011, 2048 x 1080 and 4096 x 2160 Digital Cinematography Production Image Formats FS/709 – Amendment 1

SMPTE OV 2073-0:2016, VC-5 Video Essence – Overview for the SMPTE 2073 Document Suite

SMPTE RDD 36:2015, Apple ProRes Bitstream Syntax and Decoding Process

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Digital Cinema Technology **Committee (21 DC) chaired by Dean** **Bullock and Chris Witham**



The application of the general scope as it applies to application of mastered essence to theatrical digital distribution, including compression, encryption, wrapping, marking, packaging, media, logging, layout, projection, reproduction, and related topics.

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21 DC Projects



Facility List Management projects

- Revision of ST 430-7 – Facility List Message
- New Document ST 430-15 - Facility List Message Exchange Protocol

Stereoscopic Subtitle / Timed Text projects

- Revision of ST 428-7: D-Cinema Distribution Master – Subtitle
- Revision of ST 429-5: Digital Cinema Packaging - Timed Text Track File
- Revision of ST 429-2: Digital Cinema Packaging - DCP Operational Constraints
- Digital Cinema XML Constraints

D-Cinema Operations; Encryption projects

- D-Cinema Crypto Evaluation (FIPS Revisions)
- Revision of ST 430-1: D-Cinema Operations - Key Delivery Message
- Revision of ST 430-2: D-Cinema Operations - Digital Certificate
- Amendment to ST 429-6: Digital Cinema Packaging - MXF Encryption

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Television and Broadband Media Committee (24TB) chaired by Michael Dolan



The General Scope as applied to mastered essence for television and broadband distribution (both separately and for hybrid television/broadband environments), including compression, encryption, wrapping, marking, packaging, media, tracking/control, presentation, reproduction, and related topics.

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24TB Projects



- New ST 2064 suite of documents on A-V Sync Measurement and Assessment
- New 2017 document suite on Open binding technology for persistent content identification in A/V essence
- Revisions
 - Closed Captioning suite documents
 - ST 2010: VANC Data Mapping of ANSI/SCTE 104 Message
 - ST 2016-1: AFD and Bar Data

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Cinema Sound Systems **(25CSS) chaired by Brian Vessa and** **Kurt Graffy**



The application of the general scope as it applies to standards for theater sound and cinema B-Chain systems, including performance, measurements, setup, calibration, acoustics and related topics.

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25CSS Projects



- New Standard ST 2095-1: Calibration Reference Wideband Pink Noise Signal and Test File
- New document suite: Digital Cinema Sound System Setup and Calibration (“B-chain Modern Calibration Procedure”)
- Interoperability of Immersive Sound Systems in Digital Cinema
- Digital Cinema Immersive Audio Renderer
- Immersive Sound Model & Bitstream

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Metadata and Registers **Committee (30MR) chaired by John** **Hurst and Mike DeValue**



The application of the general scope as it applies to definition and implementation of the SMPTE Registration Authority, used to identify digital assets and associated metadata. Additionally, the common definition of metadata semantic meaning across multiple committees.

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30MR Projects



- EG 2061: Glossary of Stereoscopic 3D Terms
- Application of the Unique Material Identifier (UMID)
- UMID Resolution Protocol
- Proposed ST 330 Revision Project
- New Standard ST 2102: SMPTE Core Metadata Set
- Metadata Strategy
- New Standard ST 2088: SMPTE Essence Element Key Register Structure
- Revision ST 336: Data Encoding Protocol Using Key-Length-Value
- Metadata Definition
- Create and Update Essence Element Register Contents
- Amendment of RP 2092-1 Advertising Digital Identifier (Ad-ID®) Representations

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File Formats and Systems Committee (31FS) chaired by Bruce Devlin and Paul Gardiner



The application of the General Scope as it applies to definition of common wrappers, file formats and file systems for storage, transmission, and use in the carriage of all forms of digital content components.

31FS Publication last quarter

SMPTE ST 2001-1:2015 (Revision of SMPTE ST 2001-1:2013),
XML Representation of SMPTE Registered Data (Reg-XML) –
Mapping Rules

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31FS Projects



Material Exchange Format (MXF)

- New Document: ST 377-2 - KLV-encoded extension syntax (KXS)
- Revision ST 380: MXF Descriptive Metadata Scheme 1
- New Document: ST 2042-4 - Wrapping VC-2 Video Essence in the MXF Generic Container
- New Document: ST 381-4: AAC Family Compressed Digital Audio in MXF
- MXF Timecode Mapping and Labeling
- New Document: RP 2092-2 - Ad-ID Digital Ad Slate for MXF
- New Standard ST 2073-10: VC-5 Mapping into the MXF Generic Container
- Revision of ST 2019-4:2014 Mapping VC-3 into the MXF Generic Container
- New document: ST 2065-5 ACES Codestreams in MXF
- New RDD 39: MXF OP-1a Interoperability Specification for Panasonic AVC-ULTRA Codec
- New ST 2094-2: Dynamic Metadata for Color Volume Transformation – Encodings
- New RDD 44: Mapping Apple ProRes into the MXF Generic Container

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31FS Projects (cont.)



Archive Exchange Format (AXF)

- ST 2034-1: Archive eXchange Format (AXF) - Part 1: Structure & Semantics
- New Document: ST 2034-2 - Archive eXchange Format (AXF) - Part 2: External Uses of XML Schema

Other TC-31FS Business

- Proposed new project: Constrained Application of ST 268:2014 - HDR DPX
- Proposed new project: Mapping HEVC streams into MXF GC

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Network and Facilities **Architecture Committee (32NF)** **chaired by Friedrich Gierlinger and John** **Snow**



The application of the general scope as it applies to definition and control of elements supporting the infrastructures of content production and distribution facilities, including file management, transfer protocols, switching mechanisms, and physical networks that are both internal and external to the facility excluding unique final distribution methods.

32NF Publications last quarter

- SMPTE ST 12-3:2016, Time Code for High Frame Rate Signals and Formatting in the Ancillary Data Space
- SMPTE RDD 37:2016, Uncompressed Video Transport Over MPEG-2 Transport System

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32NF Projects



Working Group on SDI Interfaces

- New Document suite SMPTE 2076: Stereoscopic 3D (S3D) Production Timing and Synchronization
- New Document: EG on SDI Interfaces
- Revision of EG 34: Pathological Conditions in Serial Digital Video Systems and
Revision of RP 198: Bit-Serial Digital Checkfield for Use in High-Definition Interfaces
- New Document: ST 2091 - Broadcast and Video Serial Digital Fiber Transmission Systems – Ruggedized Connector Interfaces

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32NF Projects (cont.)



New ST 2100 Suite: Transport of Haptic-Tactile Essence

New Standard: ST297-2 CWDM optical interface for multi-link SDI

New Standard: HDR and WCG Signaling on Streaming Interfaces

Working Group on Video Over IP

- New document suite: ST 2110 Media Networking with Coordinated Essence Flows

Ultra HD SDI Interfaces

- New ST 2081 suite: 6Gb/s Signal/Data Serial Interfaces
- ST 2082 suite: 12Gb/s Signal/Data Serial Interfaces

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32NF Projects (cont.)



Working Group on Time Labeling and Synchronization

- New Standard ST 12-3: Time Address for High Frame Rate signals and its data structure in the ancillary data space

ST 2059 Interoperability Testing

- Development of a set of synchronization Engineering Guidelines “EG 2059-1x”
- New Document: EG 2059-10 - Introduction to the New Synchronization System
- New Document: EG 2059-11 – Management of Time Discontinuities
- New Document: EG 2059-12 - Systemization Considerations for using SMPTE ST 2059
- New Document: EG 2059-14 - Best Practices for Large Scale SMPTE ST 2059-2 PTP deployments

New Time Labeling System

- SMPTE 2103 Suite: Generic Time Label
- SMPTE 2105 Suite: Time Related Label (TRL)
- RP 2104 Suite: Date-Time Terms and Definitions
- Amendment of EG 40: Conversion of Time Values Between SMPTE 12-1 Time Code, MPEG-2 PCR Time Base and Absolute Time

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32NF Projects (cont.)



ST 337 family of documents

- Amendment of ST 338: Format for Non-PCM Audio and Data in AES3 — Data Types
- New document ST 2041-4 (proposed): MPEG-H in AES3
- New Standard ST 2106: DTS Audio over AES3
- New document Audio Metadata over AES3

Flow Control in Professional Media Networks

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Media Systems, Control and Services Committee (34CS) **chaired by Chris Lennon and Karl Paulsen**



The General Scope as applied to the implementation of media services, methods of managing and controlling hardware devices and software systems, and the management of media workflow processes, including associated signaling and control mechanisms.

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34CS Projects



BXF Suite of Documents

- BXF 5.0
- BXF SDK

Media Device Control over IP

New Registered Disclosure Document: RDD 38 Sony Lightweight Networked Device Control Protocol

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Media Packaging and Interchange Committee (35PM) chaired by Pierre Lemieux



The General Scope as applied to the packaging of media elements, to facilitate interchange and interoperability of formats within specific integrated application ecosystems in the professional fields of media creation, production, post-production archiving and related topics.

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35PM Projects



WG 35PM50: IMF Document Maintenance and Sample Material Interchange

- Amend/Revise ST 2067-2: IMF Core Constraints
- Amend/Revise ST 2067-3: IMF Composition Playlist
- Amend/Revise ST 2067-5: IMF Essence Component
- Amend/Revise ST 2067-20: IMF Application #2, JPEG 2000
- Amend/Revise ST 2067-21: Application #2

IMF Output Profile Lists

IMF Audio Essence

New Document: IMF Audio Content and Element Kind Definition

New Document ST 2067-40: IMF Application #4 Mezzanine Film Format

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Q&A – Verbal Questions Encouraged!



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