SMPTE Standards Webcast Series

Standards Meeting Outcome Summary

Plus: SMPTE Liaisons Deep Dive

Welcome!
2018-10-04

SMPTE Technology Committee Meeting Outcome Summary

- Quarterly Series of interactive webcasts summarizing activities of the most recent SMPTE Technology Committee meetings
- Complimentary for everyone
- Sessions are recorded and published for on-demand viewing on https://www.smpte.org/standards-webcasts-on-demand and YouTube
Your Host

Joel E. Welch
Director of Education
SMPTE

Standards Update

+ SMPTE Liaisons Deep Dive
4 October 2018

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Standards Structure

Volunteer Driven
Global Organization!

Applications

Content
Essence + Metadata

Infrastructure & Management

SMPTE
Enabling Global Education

Standards Structure

Volunteer Driven
Global Organization!

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A question for the Audience

Next webcast (January) = Deep Dive into each TC + extra info on...

1. Activities around ST 2100?
   (it's all about networks)

2. Activities around IMF?
   (it's all about automation)

3. Activities around Micro Services?
   (it's all about software)

New Projects

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<td>ST 2067-2 IMF Core Constraints Revision</td>
<td>Revision of IMF global constraints</td>
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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.

Projects

- New Projects
  - VC-5 Part 2 Revision for VC-5 Part 7

- Projects continuing with the SMPTE process
  - VC-6 suite ST 2117 (Perseus)
    - Weekly face to face meetings defining new Terms, Definitions and Concepts (drafting in process)
    - Reference Decoder to be provided as part of the work
    - Target first FCD ballot before year end
  - VC-5 suite ST 2073 (Cineform / GoPro)
    - Final part 7 (Metadata) nearly ready for FCD ballot. (pre-FCD review)
    - Part 2 (conformance) likely to need revision when Part 7 published
  - VC-2 suite (Dirac)
    - Part 3 (conformance) Revisions to cover UHD HDR/WBG modes (in process)
Projects

- Projects continuing with the SMPTE process
  - ST 2080 – Reference Display
    - Part 2 – Measurement / Calibration procedure (revision in progress – line numbering)
    - Part 4 – Full Measurement / Calibration document – restarting the FCD ballot after clarifying comments (FCD Ballot restarted after document fix)
  - RP 2093 - Television Lighting Consistency Index
    - Comment resolution in progress. Clarification of formulas (2nd pre-FCD review in 4 wks.)
  - ST 2086 - Mastering Display Color Volume Metadata (published)
  - P3 Colorimetry (pre-DP vote started)
  - ST 2115 - FS-Gamut and FS-Log Characteristics of Camera Systems (in FCD ballot)
  - Study Group on Virtual Reality / Augmented Reality (report structure being debated)

Questions
TC20F
Film Technology Committee
Chair: John Miller
Chair: Dave Schnuelle

- The application of the general scope as it applies to application of mastered essence to theatrical film distribution, including, media and component creation, marking, laboratory methods, reproduction, packaging, projection, and related topics. Additionally film capture, editing and recording.

- No 20F meeting this round.

TC21DC
Digital Cinema Technology Committee
Chair: Steve Llamb
Chair: 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, playout, projection, reproduction, and related topics.
Projects

- New Projects
  - 428-7 Subtitle DCDM Revision

- Projects continuing with the SMPTE process
  - ST 428-1 DCDM Image characteristics (pre-DP review)
  - ST 429-2 D-Cinema Packaging - DCP Operational Constraints
    - One revision to add frame rates has become an amendment (pre-DP review)
    - Another revision to accommodate stereoscopic subtitles is awaiting ULs (pre-FCD review)
  - Revision ST 429-4 – DCP MXF JPEG 2000 (FCD comment resolution)
  - Immersive Audio
    - ST-430-17: Screen Mgmt System Outboard Media Block Comm. Protocol (pre-FCD)
      - Created a need to update to ST 430-14 (Digital Sync Signal and Aux Data Transfer Protocol)
    - ST 429-19: DCP Operational Constraints for Immersive Audio (pre-FCD)
    - ST 429-18: Immersive Audio Track File (pre-FCD)
    - RDD 29: Dolby Atmos® Bitstream Specification (submitted for publication)

- Projects continuing with the SMPTE process
  - Immersive Audio
    - Amendment: ST 430-12 - FSK Sync Signal for Immersive audio (pre-FCD review)
    - Amendment: ST 430-12 - Key Delivery Message for Immersive audio (pre-FCD review)
- 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.
Projects

- Projects continuing with the SMPTE process
  - ST 2064 suite on A-V Sync Measurement and Assessment
  - Parts 1 & 2 Fingerprint generation & transport (1yr review)
  - Part x Engineering Guideline (ready for pre-FCD review)
- OBID
  - RP 2112-1 - Audience Measurement Using OBID and OBID-TLC (published)
  - EG 2112-2 - Audience Measurement Ecosystem (published)
- Revision: ST 2016-1 - AFD and Bar Data – UHD update (drafting)
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.
Questions

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.
Projects

- Projects continuing with the SMPTE process
- UMID
  - SG - Application of the Unique Material Identifier *(work expected to restart)*
  - UMID Resolution Protocol *(work expected to restart)*
  - Revision: ST 330 - UMID *(close to Pre-FCD review)*
  - Revision: RP 205 - UMID Applications *(will start when ST330 revision completes)*
- ST 2088 - Essence Element Key Register Structure *(FCD comment resolution)*
- Amendment: ST 335 - Metadata Element Dictionary Structure *(ready for ST audit)*
- Revision RP 2079 – Digital Object Identifier (DOI) Name and Entertainment ID Registry (EIDR) Identifier *(published)*
- SMPTE Registers
  - Next revision (codename Ponzu) *(published)*
  - Following revision (codename Tabasco) *(ready to enter 6 month publishing cycle)*
  - DG activity to record Essence Elements while ST 2088 undergoes process
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.
TC31FS

Projects

• New Projects
  • RDD Application Specification for Archival Preservation of MXF - base specification (approval ballot started)

• Projects continuing with the SMPTE process
  • MXF
    • Revision: ST 377-1 - Material Exchange Format (ready for pre-DP review)
    • ST 377-2 - KLV-encoded extension syntax (KXS) (ready for DP vote)
    • Revision: ST 380 - MXF Descriptive Metadata Scheme 1 (ready for pre-DP review)
    • Revision: RP 2057 - Text-based metadata carriage in MXF (5 FCD comments)
    • Revision: ST2042-4 - Mapping a VC-2 Stream into the MXF (pre-FCD review)
  • ST 2034-2 - Archive eXchange Format (AXF) - Part 2: External Bundles (drafting)
  • ST 268-2 - DPX Format for High Dynamic Range (pre-DP review)

TC31FS File Formats and Systems Technology Committee

Chair: Paul Gardiner
Chair: Fred Walls

Questions

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• 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.
Projects

- Projects continuing with the SMPTE process

  - Revision: ST 2038 - ANC Packets in an MPEG-2 TS (pre-FCD comments)
  - Video over IP
    - Part 22 – CBR Compressed Mono Essence Streams (drafting)
    - Part 23 – Single Essence Stream over Multiple Ports (RP) (drafting)
    - Part 31 - AES3 Transparent Transport (published)
  - ST 2022-8 - Timing of ST 2022-6 streams in ST 2110-10 Systems (FCD comment resolution)
  - Revision: ST 2022-7 - Seamless Protection Switching of RTP Datagrams (ready for ST Audit)
  - Revision: ST 2022-3 – VBR MPEG-2 TS on IP Networks (FCD comment resolution)

- Projects continuing with the SMPTE process

  - ST 2081 Suite - 6Gb/s Signal/Data Serial Interfaces – One Year revisions
    - ST 2081-12: 4320-line and 2160-line Image and Anc Mapping for Quad-link 6G-SDI (FCD comment resolution)
  - ST 2082 Suite - 12Gb/s Signal/Data Serial Interfaces
    - ST 2082-11: 2160-line and 1080-line Image and Anc Mapping for Dual-link 12G-SDI (FCD comment resolution)
    - ST 2082-12: 4320-line and 2160-line Image and Anc Mapping for Quad-link 12G-SDI (FCD comment resolution)
Projects

- Projects continuing with the SMPTE process
  - Time Label & Synchronisation
    - ST 2059 Interoperability Testing (old reports at https://www.smpte.org/standards/reports)
    - Revisions of ST 2059-1 and ST 2059-2 as a result of testing:
      - Remove 5s lock time
      - Discussing AES Clock classes. Malformed SM TLV messages, Alignment Point
    - EGs for ST 2059 (drafting)
      - -11 Management of Time Discontinuities (close project – no progress)
      - -12 Systemization Considerations for using SMPTE ST 2059 (consider a 2110 document)
      - -14 Best Practices for Large Scale SMPTE ST 2059-2 PTP deployments (paused)
  - New Time Labelling System
    - Extensible Time Label (TLX)
      - Considering Profiles: Digital Birth Certificate, Local Time Profile, Production Time Profile
    - RP 2104-1 - Date-Time Terms and Definitions (no activity)
  - Data over AES3 (ST 337 family)
    - ST 2109 - Audio Metadata (paused for FCD ballot)
    - ST 2041-4 - Carriage of MPEG-H 3D Audio Streams (drafting a revised WD)
    - Serial Audio Definition Model (ADM) over AES3 (no activity)

Network and Facilities Technology Committee

Chair: Friedrich Gierlinger
Chair: John Hudson

New Project chair sought – Volunteers?
• 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.

Projects

• Projects continuing with the SMPTE process
  • Revision: ST2021-1 - Requirements and Informative Notes (BXF 6.0) (now a DP)
  • Revision: EG2021-2 Broadcast Exchange Format (BXF) Protocol (now a DP)
  • Revision: EG2021-3 Broadcast Exchange Format (BXF) Use Cases (now a DP)
  • Revision: EG 2021-4 - Schema Documentation (BXF 6.0) (FCD comment resolution)
  • Media Device Control over IP
    • Part 3 & 4 – Discovery & Control (focus of the DG to restructure + liaison)
  • Media Microservices Overall Architecture
    • Governance structure via registers of services defined by
      • Standard
      • Recommended Practice
      • RDD or TSP
      • External
• 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.
Projects

• New Projects
  • IMF Application 4 Cinema Mezzanine Revision
  • IMF Essence Component Revision
  • IMF Composition Playlist Revision
  • IMF Application 2E Revision
  • ST 2067-2 IMF Core Constraints Revision

• Projects continuing with the SMPTE process
  • Document maintenance https://github.com/orgs/SMPTE/teams/35pm
  • ST 2067-200 - Dynamic Metadata for Color Volume Transform (published)
  • IMF - Audio Element + Content Kind (on hold – 377-4 update)
  • IMF - Immersive Audio Bitstream Level 0 Plug-In (DP vote)
  • Revision: ST 2067-21 - Interoperable Master Format – Application #2E (drafting)
  • RDD-47 IMF Isochronous Stream of XML Documents (ISXD) (ST Audit)
  • Plugfest DG
    • Next plugfest AMPAS 18-19 October including App #2e, ProRes, IMSC1 and OPL
Part 2 – SMPTE Liaisons

Deep Dive with Thomas Bause Mason
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SMPTE is a Global Organization

Authority on Professional Media

Be there to be recognized

Harmonize Industry Efforts

Bring expertise to other organizations

SMPTE Liaison Documents

Operations Manual (OM v3.1)

AG10a

AG10b
SMPTE Liaison Tracking

SMPTE Liaison Trello Board

SMPTE Liaison Head of Delegation

Head of Delegation (HOD)

Delegation
SMPTE Liaison Delegate

Delegate

Liaison Communication

SMPTE Delegate/SVP

External Organization

SMPTE Liaison Communication

External Organization

Incoming Liaison

Outgoing Liaison

SMPTE Delegate

SMPTE SVP (Approval)

Incoming Liaison

Outgoing Liaison

Liaison Committee/ST

Incoming Liaison

Outgoing Liaison

TC Chairs

Liaison Record

THE NEXT CENTURY

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Joint Taskforce on Networked Media

- Founders and board of JT-NM
- Help manage IP transition
- Collect user requirements
- Identify gaps in technology
- Recommend best practices
- Meets every 4 weeks

Joint Taskforce on Networked Media

- Larger group of organizations
- Update on ongoing projects
- Coordinate industry activity
- Meets every 4 weeks
- 1 week after admin meeting
Inter SDO Meet-Up

- Meeting of Media related SDO’s
- Updates on structure/working methods
- New matters for Standards?
- Strategic Updates from Standards Bodies and Associations
- Meets 3x a year (CES, NAB, IBC)
Association of Radio Industries and Businesses (ARIB)

- National Japanese Organization
- Standards Development
- Research and Development
- Harmonization of Standards
- Interest in SMPTE ST 2110

Advanced Television Systems Committee (ATSC)

- International US based Organization
- Standards Development
- Development of Digital Television
- General interest to harmonize
- SMPTE is board member
European Broadcasting Union (EBU)

- European User Community
- Represents Public Broadcasters
- Research and Development
- Standards through SMPTE
- Working on Memorandum of Understanding (MoU)
- IMF, SMPTE ST 2110, PTP Security etc.

Audio Engineering Society (AES)

- International Standards Organization
- Focused exclusively on Audio
- Large degree of cooperation
- Common interest to harmonize
- AES67/SMPTE ST 2110, PTP, Discovery/Registration, Object Models

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Ultra HD Forum (UHDF)

- International Industry Forum
- Support adoption of UHDTV
- Content Creators, Manufacture, Distributor
- Consensus on common technical standards
- MoU in progress

SMPTE Liaison (AG10b)

3GPP 3rd Generation Partnership Project
AES Audio Engineering Society
AMWA Advanced Media Workflow
ARIB Association of Radio Industries and Businesses
ASA Acoustical Society of America
ATSC Advanced Television Systems Committee
BDA Blu-ray Disc Association
CTA Consumer Technology Association
DCI Digital Cinema Initiatives
DECE Digital Entertainment Content
DPP Digital Production Partnership
DVB Digital Video Broadcast
EBU European Broadcast Union
IEC TC100 International Electrotechnical Commission, Audio, Video and Multimedia systems and equipment
IEEE P1588 Institute of Electrical and Electronics Engineers, PTP
IEEE P1722a Institute of Electrical and Electronics Engineers, Audio/Video Bridging Layer2 Transport, AMD1
InfoComm InfoComm International
ISO/IEC JTC1 International Standards Organization, Coding of audio, picture, multimedia and hypermedia information
ISO TC36 International Standards Organization, Cinematograph
ISO TC42 International Standards Organization, Photography
NABA North American Broadcasters Association
SCTE DVS Society of Cable Telecommunications Engineers, Digital Video Subcommittee
UHD Forum Ultra HD Forum
UNIC International Union of Cinemas
VSF Video Services Forum
W3C World Wide Web Consortium
SMPTE Conferences

IBC  EBU TA  NAB East
NAB  GV Expo  SMPTE Local Chapters
SMPTE ATC  SET

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Thank you!

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Questions?

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Thank You

Questions