



Standards Quarterly Report

Result of the SMPTE Standards Committee Meetings June 2013
Hosted by Xilinx in San Jose, California





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SMPTE Standards Quarterly Report Executive Summary

As a result of SMPTE Standards Committee Meetings
19-22 June 2013
Hosted by Xilinx,
San Jose, CA

The ten SMPTE Technology Committees, and numerous subgroups, met at Xilinx 19-22 June; some 50 members attended in person, and a similar number participated in the web meetings. Good progress was made on a number of fronts. This Executive Summary captures just a few of the more notable projects and their current status.

A long-standing item is the project on “Reference Display and Environment for Critical Viewing of Television Pictures” seeking to define the use of fixed pixel matrix displays when replacing CRTs as reference displays. The first of four documents is expected to ballot before the next meeting cycle in June.

An enhanced version of color bar signal is being developed, incorporating “tent” signals above white and below black.

The Study Group on High Frame Rates for 3D and 2D D-Cinema Applications is preparing a test material shoot to allow compression bitrate testing.

In television, the work on defining a fingerprint mechanism for audio/video synchronization measurement, intended to permit automatic correction of A/V sync errors.

The Study Group on the UHD TV Ecosystem has been meeting regularly and is working on a report that will include an assessment of the need for new standards. The report should be available in September.

The new Technology Committee on Cinema Sound Systems has a number of projects aimed at improving the consistency of sound in cinema environments, and is also studying immersive audio systems.

A new group was formed to create a SMPTE Core Metadata set.

The Technology Committee on File Formats and Systems is working on numerous updates and extensions to the MXF file format. The proposals for an Archive Exchange Format (AXF) is nearing ballot on the core document.



The Technology Committee on Network and Facilities Architecture continues to work on high-speed interfaces, and the mapping of many television formats. Following publication of the first five documents on video over IP, the committee is now addressing high-availability delivery, permitting the use of multiple lossy streams.

The Time labeling and Synchronization Committee is about to ballot the first document defining a new universal synchronizing system, and is nearing completion of updates to several documents to support 48fps workflows.

The Media Systems, Control and Services Committee is finalizing work on the third generation of the Broadcast Exchange Format (BXF) and is considering proposals for further extensions of functionality in a fourth generation. The committee is also working actively on device control over IP, and a Framework for Interoperable Media Services.

The Committee on Media Packaging and Interchange is working intensively on the Interoperable Master Format (IMF). The first documents of the ST 2067 series are published, and work on many extensions and applications is well under way.

A proposal was made by representatives of the Coalition for Innovative Media Measurement (CIMM), 4As, and Ad-ID to create a standard for binding of media content identifiers to essence throughout the media delivery chain. See the 30MR report.



SMPTE Standards Quarterly Report Detailed Account

As a result of SMPTE Standards Committee Meetings
19-22 June 2013
Hosted by Xilinx,
San Jose, CA

The Society of Motion Picture and Television Engineers is the world leader in motion-imaging standards for the communications, media, and entertainment industries – and the only organization to connect the areas of motion-imaging research, standardization, education, and business success.

We encourage interested parties to contact Standards Committees to learn more about specific activities. Go to www.smpte.org/standards for more information.

If you need help getting started with the SMPTE Standards process and some of the conventions / acronyms used in this report, jump to the [Annex](#).

This Quarterly Report provides a detailed account of the meetings of the following Technology Committees and their sub-groups:

[**Essence Technology Committee \(10E\)**](#)

[**Digital Cinema Technology Committee \(21 DC\)**](#)

[**Television and Broadband Media Committee \(24TB\)**](#)

[**Cinema Sound Systems Committee \(25CSS\)**](#)

[**Metadata and Registers Committee \(30MR\)**](#)

[**File Formats and Systems Committee \(31FS\)**](#)

[**Network and Facilities Architecture Committee \(32NF\)**](#)

[**Time Labeling and Synchronization Committee \(33TS\)**](#)

[**Media Systems, Control and Services Committee \(34CS\)**](#)

[**Media Packaging and Interchange Committee \(35PM\)**](#)

In addition, the EBU / SMPTE / VSF [**Joint Task Force on Networked Media \(JF-NM\)**](#) held a meeting during the Standards round.

It is a snapshot in time and should not be considered formal minutes or a positioning statement or analysis piece. Provide your comments or suggestions at standards@smpte.org



If you are interested in learning more about SMPTE Standards program, please contact Peter Symes, Director of Standards and Engineering, at psymes@smpte.org.

The next round of Standards meetings will be held on 18-22 Sept 2013 in Munich.

Further upcoming Standards meetings are planned for:

9 - 13 December 2013 in Atlanta, Georgia, USA, hosted by Turner. This meeting round will include a "Users Have Their Say" session on 11 December.

March 2014 - there are efforts underway to organize this meeting round in Japan.

Details from each Technology Committee meeting

Essence Technology Committee (10E) chaired by John Hudson and Paul Gardiner

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

Topic: Video compression standards in SMPTE

AHG Project: Revision of SMPTE ST 2019 VC-3 Video Compression Documents

This project extends the functionality of SMPTE VC-3 compression (based on AVID's DNxHD technology) by adding 5 new Compression IDs to support 4:4:4 and RGB color space. Two documents are covered by this work - ST2019-1: VC-3 Picture Compression and Data Stream Format and RP2019-2: VC-3 Decoder and Bitstream Conformance. In addition, Part 4 is being revised in TC-31FS.

Status: ST 2019-1 passed DP ballot on 2012-10-23. However, RP 2019-2 has been held up by delays in generating the bitstreams; the group expects Part 2 to be ready by the September meetings. Part 1 will be held until Part 2 is ready.

Business Impact: Interoperability between systems

AHG Project: Draft ST 2073: VC-5 Video Essence

This project standardizes the Cineform / GoPro video compression system. The document suite plan has been further rearranged in the last quarter and currently comprises:

- Part 1 - Elementary Bitstream
- Part 2 - Reference Decoder and Utilities
- Parts 3 & 4 Image Formats
- Parts 5, 6 & 7 Advanced Features

Status: Part 1 passed DP elevation ballot on 2013-05-23.

Part 2 includes sample bitstreams and the group requested test material, particularly RAW Bayer images. Material for the remaining Parts is largely complete, but awaits approval of Part 1.



There is also VC-5 work planned for an MXF Wrapper (TC-31FS) and a VC-5 IMF Application (WG 35PM50).

Business Impact: Interoperability between systems

AHG Project: Revision of ST 2042-1: VC-2 Video Compression Standard and ST 2042-3: VC-2 Conformance Specification

This revision of the SMPTE mezzanine video compression standard (based on BBC's DIRAC pro) adds a new high quality profile to support Archiving and Production applications.

Status: The Part 1 revision was published 2012-08-30 (the TC Chair has noted that this probably should not have been done, because it is normal to wait until the reference decoder/bitstream files are available). The bitstreams to complete Part 3 are still awaited.

Business Impact: Interoperability between systems

AHG Project: RDD: JPEG 2000 Mezzanine Profile for HD Applications

This project will create a JPEG2000 profile with consistent visual qualities so that in a multi-vendor environment, insert edits, assemble edits and concatenation can take place without significant visual artifacts. This profile is currently deployed by a number of users and the RDD is proposed to aid interoperability.

Status: Drafting work is in progress and a WD is expected by the September meeting round.

Business Impact: Interoperability between systems

AHG Project: Draft ST 2068: Stereoscopic 3D Frame Compatible Packing and Signaling

This work documents the various ways an image pair is sampled and packed into a single image frame and a method of signaling the packing method.

Status: The draft document was elevated to DP status at the TC meeting.

Business Impact: Interoperability between systems and signaling in digital workflows

AHG Project: Draft SMPTE 2080 suite: Reference Display and Environment for Critical Viewing of Television Pictures

This project will draft a suite of documents dealing with the use of fixed pixel matrix reference displays. The document suite comprises:

- ST 2080-1: Reference White Luminance Level and Chromaticity
- RP 2080-2: Daily Measurements



ST 2080-x: Reference Display Characteristics
ST 2080-x: Reference Viewing Environment Characteristics
RP 2080-x: Full Measurement / Calibration
EG 2080-x: Engineering Guideline to provide context and background

- **Status:** The document suite was rearranged this quarter, as listed above. The Part 1 document passed FCD ballot on 2013-06-21 with 27 comments to resolve. The Part 2 document has been recently introduced; it will be needed as a reference for Part 1 and a draft is expected for the September round. The remaining documents are expected to follow in the order shown above.

Business Impact: Users and industry have common standards to assess image quality on a reference display.

AHG Project: Revision of ST 125: SDTV Component Video Signal Coding 4:4:4 and 4:2:2, for 13.5MHz and 18MHz Systems

This is a revision of ST 125:1995 that also incorporates Standard ST 267 for 16x9 and Recommended Practice RP175 for 4:4:4:4 dual link.

Status: This document passed FCD ballot on 2012-02-07 with 63 comments. Resolution of the last 2 comments was completed during the TC meeting and the document can proceed to DP ballot.

Business Impact: Interoperability between systems

AHG Project: Revision ST 2036-1: Ultra High Definition Television - Image Parameter Values for Program Production

This is a revision of SMPTE ST 2036-1 to add support for an additional frame rate and a wider color gamut.

Status: This revised document is in the publication queue.

Business Impact: Alignment with ITU-R documents and baseline interoperability for UHD TV

AHG Project: Revision of RP 219: High-Definition, Standard-Definition Compatible Color Bar Signal

The proposal is to add optional components to part of the signal to exercise levels in the white overshoot region above level 940 and in the sub-black region below level 64 (10bits).



Status: A draft document has completed pre-FCD-ballot review. A comment was received asking if the document should also cover the UHDTV1 standard. This was considered at the TC meeting and a decision was made to send the document to FCD ballot as-is.

Business Impact: Improved interoperability between HD and SD color bar

AHG Project: Full-Scale RGB

This project defines the full-range method of image coding in bit depths of 10 and 12 bits - i.e. no reserved code values. It recommends methods of conversion between full-range image coding and the corresponding conventional image formats. This method is currently in use for some file-based applications such as DPX.

Status: The draft document has completed pre-FCD-ballot review and a CD will be sent to the TC before the end of June.

Business Impact: Addresses a long known issue and enhances interoperability

Other TC-10E Business

A number of 1-year and 5-year document reviews were undertaken. The TC voted on appropriate action for each document, effective 2 weeks after the vote if no alternative action is proposed (document titles can be found [here](#)):

1-year review documents reaffirmed:

ST 2048-3:2012

ST 2065-1:2012, ST 2065-2:2012, ST 2065-3:2012

5-year review documents made stable:

ST 314:2005

RP 2006:2006

5-year review documents reaffirmed:

RP 173:2002

RP 202:2008

RP 204:2000

RP 199:2004

RP 2025:2007

RP 228:2008

RP 221:2008

ST 274:2008

ST 2036-2:2008



Film Technology Committee (20F) chaired by David 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.

This group does not meet during the quarterly sessions.

Digital Cinema Technology Committee (21 DC) chaired by John Hurst and Nelson Meacham

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.

AHG Project: Audio Channel Labeling – D-Cinema Application

This work defines constraints to the Multichannel Audio Framework, ST 377-4 for application in D-Cinema. The group has developed these documents:

- ST 428-12: D-Cinema Distribution Master-Common Audio Channels and Soundfield Groups
- An amendment to ST 429-2 D-Cinema Packaging - DCP Operational Constraints document to add requirements to accommodate MCA labels.

The AHG recommends that ST 428-3:2006: D-Cinema Distribution Master Audio Channel Mapping and Channel Labeling be made stable when ST428-12 is published.

Status: ST 429-2:2011 Am1:2013 and ST428-12:2013 have been published.

Business Impact: Interoperability between systems

AHG Project: Stereoscopic Subtitle and Timed Text Rendering

This AHG will revise SMPTE standards in compliance with “Stereoscopic On-Screen Text – Study Group Report” version 1.2. Documents affected:

Revise ST 428-7 - D-Cinema Distribution Master - Subtitle
Revise / Amend ST 429-2: DCP Operational Constraints
Revise / Amend ST 429-5: Timed Text Track File

Status: The revised draft ST 428-7 passed FCD ballot on 2012-12-21 with 6 comments, which are now all resolved. The TC was asked to advise on retaining schemas for the existing and previous versions of ST 428-7, and whether to make corrections for errors that have been identified in these older versions. This led to a discussion of the cross-compatibility requirements for ST 428-7 encoders and decoders of each version and the conclusion that the compatibility must be made very clear. Drafting work on ST 429-5 will start shortly and drafting on ST 429-2 will start when one technical issue is resolved.



Business Impact: Compatibility and Interoperability

Topic: Digital Cinema High Frame Rate Projects

SG Project: Study Group on High Frame Rates for 3D and 2D D-Cinema Applications

This project identifies the impact of increasing 3D content frame rate to 48, 50, or 60 fps per eye or increasing 2D content frame rate to 96, 100, or 120 fps. The group is investigating the capabilities of deployed and about-to-be deployed equipment, playback on legacy equipment, mastering and workflow impacts and compression requirements.

Status: The group is planning a test material shoot to allow compression bitrate testing and the final report will include compression conclusions, but the tests are held up for lack of resources. It was proposed at the TC meeting that the report be completed and the test shoot revived as a separate activity later.

Business Impact: proposals for high frame rate technology standards

AHG Project: Revise ST 428-11:2009 to include High Frame Rates

This work adds the use of additional high frame rates as specified in the Study Group work statement: 48, 50, 60 fps per eye 3D (2K only) and 96, 100, 120 fps 2D (2K only).

Status: This draft-revised document is at FCD ballot, closing 2013-07-11.

Business Impact: Interoperability between systems

AHG Project: Amendment to ST 430-3 D-Cinema Operations – Generic Extra-Theater Message Format

This project tightens up the encryption requirements in the standard to improve interoperability.

Status: This amendment has been published.

Business Impact: Interoperability between systems

AHG Project: Auxiliary Data Track File

This AHG will specify a method to carry data that does not fall into the existing Sound, Picture, and Subtitle track files in a SMPTE Digital Cinema Package. Examples are object-oriented sound, motion control, and effects programming (wind, fog, etc.). Documents are:

DCP - Data Track File Specification

DCP - Data Track File CPL Extension



Status: The AHG Chair reported that all comments in the group had been addressed and that the draft documents would be sent to the TC for pre-FCD-ballot review.

Business Impact: Interoperability between systems

AHG Project: Synchronization Signal for External Processor

This project will define the modulation and protocol for a signal that can be played back from a server and used to accurately synchronize an external processor. This is related to the Auxiliary Data Track File proposal.

Status: A new draft, resolving earlier AHG comments, has been posted to the AHG. It will be reviewed at a telecon on 2013-07-02.

Business Impact: Interoperability and quality improvements

Project: Draft EG 429-1: DCP Packaging Guideline

There was no report, but the project page estimates that the EG is 2/3 complete.

Proposed Project: CPL Metadata Enhancements

It has been found that additional Composition Play List metadata items would be useful. As a work-around, these items are encoded in the title of the composition, whose structure cannot accommodate the full range of desired metadata. As a result, the metadata contained in the Composition Playlist is inconsistent and seldom utilized by exhibition equipment.

Television and Broadband Media Committee (24TB) chaired by Ann Marie Rohaly

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.

AHG Project: ST 2052 document suite on Captions

This group is developing / maintaining this multipart standard. The work builds on W3C Timed Text Markup Language (TTML).

Ongoing work:

Project: Revision of Part 1: Timed Text Format (SMPTE-TT)

Project: Revision of Part 10: Conversion from CEA-608 Data to SMPTE-TT

Project: Part 11: Conversion from CEA-708 Caption Data to SMPTE-TT

Part 12: Conversion from ST 428-7 Digital Cinema Subtitles to SMPTE-TT

Status: The revisions of ST 2052-1, RP 2052-10 and new document ST 2052-11 are at ST Audit. New document RP 2052-12 is awaiting work in W3C before it can be completed.

Business Impact: Interoperability between systems in the full eco-chain



AHG Project: Draft ST 2064 documents on A-V Sync Measurement and Assessment

This group studies A-V sync problems and liaises with other bodies that have interests in this field. Currently, its main work is to standardize an 'Audio to Video Synchronization Measurements' document suite based on audio and video fingerprints:

- Part 1: Fingerprint Generation
- Part 2: Fingerprint Stream Transport (includes VANC in SDI/HD-SDI, IP, MPEG)
- Part 3: Fingerprint File Binding

Status: The draft of Part 1 was submitted to the TC for 2-week pre-FCD-ballot review and a large number of useful comments was received. All have been resolved.

Content contribution for Part 2 is complete and editing is progressing in weekly meetings.

To assist with the drafting of Part 3, the group has approached experts in TC-31FS. There have been positive responses.

The group is also collecting topics for EGs or RPs on this technology.

Business Impact: Improved quality of experience and interoperability between systems

AHG Project: Draft RP 2072: Emphasis of AES/EBU Audio in Television Systems and Preferred Audio Sampling Rate This project started as a Revision of EG 32, but as that document contains conformance language it was thought better to issue it as a new RP. EG 32 will be withdrawn when RP 2072 publishes.

Status: The draft RP 2072 passed FCD ballot on 2012-11-27 with 11 comments to resolve. The AHG has proposals for comment resolution and will enter them into KAVI.

Business Impact: Interoperability between systems

AHG Project: Revision of ST 96: 35- and 16-mm Motion-Picture Film — Scanned Image Area

Status: There have been problems transferring some of the document images between systems. The prose work is completed.

SG Project: UHDTV Ecosystem

The study group will review image and audio technology standards available. It will determine the requirements and impact on interfacing/exchanging 4K and 8K in an end-to-end chain (e.g., with a reference diagram visualizing the areas where new exchange standards are needed). The work covers the needs of professional applications producing content for delivery to the home by television, broadband and Blu-ray. The group will provide recommendations for future standardization work.



Status: Since the March meeting round, the group has held 5 telecons. The SG report is well developed and was further developed during a face-to-face meeting held after the TC-24TB meeting. The group has an aiming point of having the report available in time for IBC. It is also developing a use-case document.

Business Impact: Formulate an understanding of future standards requirements in the full UHD TV eco chain.

SG Project Proposal: Open binding technology for persistent content identification in A/V essence

This project aims to define an open binding technology standard (e.g., watermarks, fingerprints, metadata sidecars, etc.) for embedding persistent content identifiers into audio/video essence in a way that survives compression and distribution through the supply chain.

Status: The proposal was well supported and a formal project proposal will be started.

A proposal was made to start a new Project:

"Create an open standard for the binding of media content identifiers (such as EIDR and Ad-ID) to essence that will survive compression and distribution through the entire supply chain, all the way to delivery to consumers."

Subsequently the [Project](#) was approved, and a Study Group has been formed.

Other TC-24TB Business

A number of 1-year and 5-year document reviews were undertaken. The TC voted on appropriate action for each document, effective 2 weeks after the vote if no alternative action is proposed (document titles can be found [here](#)):

1-year review documents reaffirmed:

ST 2053:2011

ST 2056:2011

5-year review documents made stable:

EG 21:1997

EG 22:1997

EG 44:2005

RP 201:2008

RP 220:2004

ST 224:2003

ST 310:2010

ST 316:2006

ST 357:2002

ST 364:2008

ST 409:2005



5-year review documents reaffirmed:

EG 2032-4:2007

ST 2032-1:2007, ST 2032-2:2007, ST 2032-3:2007

ST 2038:2008

In addition, some projects will be started to revise / amend other documents.

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.

The TC is maintaining a set of diagrams that show the relationship of various parts of the TC-25CSS workflow and projects; the latest version was reviewed.

AHG Project: RPxxxx: B-chain Modern Calibration Procedure

This group will create a Recommended Practice that codifies and expands currently-practiced measurement methodology using today's technology and analyzers into step-by-step procedure(s) for measuring and calibrating the frequency response and sound pressure levels of the B-chain sound system in indoor theater spaces.

Status: The results of the group's first task of information gathering by means of a detailed survey were analyzed and presented. An early draft of the RP was presented to the TC.

AHG Project: STxxxx: SMPTE Pink-Noise Calibration and Test File

Examination of various "reference" noise files has revealed inconsistency in both RMS and Peak amplitude values. This group will create a pink-noise calibration Standard, and produce a reference pink-noise .wav file and a DCP containing the file. The pink noise defined in ST 202:2010 and RP 200-2012 will be used and the algorithm used to generate the pink-noise file will be specified.

Status: The group has established a "strawman" set of parameters for the pink noise signal. It will develop algorithms and code to generate the signal.

SG Project: Immersive Audio Systems: B-Chain and Distribution Study Group

This group will study the new cinema immersive "3D" audio systems and determine what standards and recommended practices are needed. The B-chain and distribution requirements of the various systems will be studied. The National Association of Theater Owners (USA) and the International Union of Cinemas (Europe) have jointly submitted their Immersive Sound Requirements to the group.



Status: The characteristics of existing immersive audio systems are being studied. The group will identify common approaches and research solutions to the system differences. A report will be drafted identifying A Chain and B Chain requirements and identifying SMPTE standardization work.

AHG Project: Analysis of SMPTE B-Chain Study Group Theater Testing Data Report

This group will compile and analyze the theater testing data that was collected by the earlier B-Chain Study Group Theater Testing group and produce a report with analysis, comparisons and recommendations.

Status: The group presented graphical results of its data analysis and previewed an outline of its report.

Metadata and Registers Committee (30MR) chaired by Phil Tudor and Paul Treleaven

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.

AHG Project: EGxxxx: Glossary of Stereoscopic 3D Terms

This project takes as its starting point the glossary developed last year by the 3D Home Master project in TC-35PM.

Status: The WD was updated following one comment on the March 2013 draft. The AHG Chair will request 2-week review in the AHG and then forward the document to the TC for 2-week pre-FCD-ballot review.

Business Impact: Understanding and common use of terms

SG Project: Application of the Unique Material Identifier (UMID)

The UMID is standardized in ST 330 and RP 205 covers application of UMIDs in Production and Broadcast Environments. This SG is studying ways to make the UMID more useful, particularly in Material location across various systems. The SG is preparing two reports:

- Study Report on UMID Applications Part 1 (UMID Application Principles, Best Practices)
- Study Report on UMID Applications Part 2 (Additional Technology that needs Standardization)

Status: The completed Part 1 report was submitted to HQ at the last meeting round. The Part 2 report will be developed in parallel with the RP 205 project (below). The Domain Name System (DNS) is being studied as a candidate for the UMID Resolution Protocol.

AHG Project: Revision of RP 205: Application of Unique Material Identifiers in Production and Broadcast Environments



This project will incorporate improvements identified in the Study Group report.

Status: An outline for the revised document was presented at the TC meeting.

AHG Project: RP 2079: DOI Name and EIDR Identifier representation

These terms relate to metadata:

DOI = Digital Object Identifier

EIDR = Entertainment Identifier Registry

Status: The document passed FCD ballot on 2013-06-19 with 2 comments to resolve.

Business Impact: Interoperability between systems

AHG Project: SMPTE-Core Metadata Set

This group's scope is to define an interoperable minimum core set of descriptive metadata for professional motion imaging applications and users.

Existing SMPTE metadata is application-specific and is not supported right through media workflows.

Status: The group is assembling use-cases into a requirements document. It is planned to review elements for adoption one-by-one, using elements and extensions based on mapping requirements.

Business Impact: potential foundation for Metadata

SG Project: HQ implementation of On-line Registers

TC-30MR's metadata registers are currently spreadsheet-based and it has long been recognized that an online database is required. This SG has completed a report listing requirements for an online system.

Status: SMPTE HQ has identified contractors to implement the online register system using a relational database. The group will remain open to respond to implementation queries and review proposals.

Business Impact: Interoperability between systems

SG Project: Metadata Strategy

This review of the role of the TC started in the 2012-03 meeting round, examining how the focus of the TC should expand beyond the registration of metadata and towards standardizing metadata schemes and XML projects.

Status: The SG work has been captured in note form and will be formatted into a draft SG report by 1 July.



Topic: Register Structure Document Projects

There are several SMPTE standards defining the structure of various metadata registers defined by ST 336: Data Encoding Protocol Using Key-Length-Value. They are all being updated to include new requirements such as including xml symbols. Three of these updates are now published:

- ST 335:2012 Metadata Element Dictionary Structure
- ST 400:2012 SMPTE Labels Structure
- ST 2003:2012 Types Dictionary Structure

AHG Project: Revision ST 395: Groups Register Structure

Status: The revised ST 395 draft started FCD ballot at the beginning of the meeting cycle, closing 2013-07-24.

AHG Project: Draft Essence Register Structure

This project creates a controlling standard for SMPTE ULs used as essence keys in MXF standards.

Status: The draft document needs a final editing pass to get it in shape for pre-FCD-ballot review.

AHG Project: Draft ST 2024: Registry XML Interchange Format

This work defines a format for exchanging data with the SMPTE metadata registry. It comprises a prose document and a schema.

Status: This work is on hold - planned to resume after the ST 395 revision is completed.

WG Project: Metadata Definition

This Working Group (30MR10) co-ordinates a number of AHG projects for adding or maintaining metadata items in registers. Because the registers are updated frequently, a version number identifies each revision.

The Elements and Labels contents have historically been identified with a 'RP' number. Now, register contents are specified as an *element* of the structure standard and no RP numbers will be used for new registers.

Status: The TC appointed a pro-tem Chair for the WG who will see the existing register versions through their ballot process. The WG met during the San Jose round and updated the status on:

AHG Project: Update Metadata Element Dictionary Contents (RP 210)

Status: The latest RP 210v14 draft was uploaded to the WG on KAVI during the meeting cycle.

AHG Project: Update Metadata Labels Register Contents (RP224)



Status: The latest RP 210v14 draft was uploaded to the WG on KAVI during the meeting cycle.

AHG Project: Create and Update Groups Register Contents

For some while, an informal Groups Register has been maintained. The register is awaiting publication of the ST 395 revision, rather than constructing it to meet the limited features of the existing published ST 395.

Status: A draft of the register is being maintained. The format will be modified when the revised ST 395 is approved.

AHG Project: Create and Update Types Register Contents

For some while, an informal Types Register has been maintained. Now that the defining structure document, ST 2003, is published this register can be introduced formally for ballot.

Status: A draft of the register is being maintained. It will be converted to conform to its newly published controlling standard ST 2003 and should then be ready for ballot.

AHG Project: Draft EG 2074: Metadata Naming Guidelines

This document aims to improve the consistency of names given to metadata items

Status: This document is at ST Audit.

Other TC-30MR Business

Class 13 Node Request

A request for a Class 13 node has been received from Avid. It was discussed in the TC meeting and will be followed up by the TC and HQ.

1-Year and 5-Year Document Reviews

The TC voted on appropriate action for the following documents (document titles can be found [here](#)):

5-year review documents made stable:

ST 401:2005

5-year review documents reaffirmed:

RP 225:2005

In addition, ST 336:2007 will be revised.



File Formats and Systems Committee (31FS) chaired by Mike Dolan and Pierre Lemieux

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.

Topic: 31FS Publications in last quarter

ST 392:2013 - Material Exchange Format (MXF) — Operational Pattern 2a (Play-List Items, Single Package)

ST 382:2007 Am2:2013 Material Exchange Format — Mapping AES3 and Broadcast Wave Audio into the MXF Generic Container — Amendment 2 (on constant duration audio wrapping)

RP 2057:2011 Am1:2013 - Text-Based Metadata Carriage in MXF — Amendment 1

Topic: Material Exchange Format (MXF)

MXF defines a file format for Video, Audio and Data essence along with associated Metadata, for use in production systems (rather than final delivery).

There are several MXF projects under way. Some define new MXF features / applications, others revise existing documents for better interoperability.

Business Impact of all MXF related work items: Interoperability between systems in file-based production

AHG Project: Draft ST 377-2: KLV-encoded extension syntax (KXS)

This work specifies an alternative approach to the 'Application Metadata Plug-ins' specified in SMPTE 377-1.

Status: The document passed FCD ballot on 2010-02-28 with 61 comments to resolve. A revised draft (v4c) has been posted, containing proposed resolutions for all comments.

AHG Project: Draft EG 377-3: MXF Engineering Guideline

This project expands the scope of an earlier MXF EG to include updates and new MXF documents

Status: This document closed ST Audit on 2013-01-27. There was one comment that has been resolved and the document will move forward to publication.

AHG Project: Revision ST 380: MXF – Descriptive Metadata Scheme-1

Status: The group has held several telecons in the last quarter and the document will be ready for TC pre-FCD-ballot review in 2-4 weeks, after some reformatting.

AHG Project: Revision EG 42: MXF Descriptive Metadata



Status: This work will be completed after the related ST 380 revision is finished, though the draft is well advanced.

AHG Project: Draft VC-2 mapping to MXF Generic Container

Status: This document failed FCD ballot that closed on 2013-05-23 with 43 comments to resolve. Comment resolution has just started.

AHG Project: Revision ST 392: MXF Operational Pattern 2a

Status: This document has published in the last quarter.

AHG Project: Draft ST 2075: Mapping EBU Tech 3264 Subtitle List to MXF Generic Streams

This document defines a method to encapsulate EBU Tech 3264 Subtitle List files within the MXF file that contains the program material, without modification to the underlying STL data.

Status: This document has passed ST Audit and will be prepared for publication.

AHG Project: Draft ST 2070: 3D in MXF Operations

The project deals with “Stereoscopic 3D in interleaved MXF for TV”.

Document suite comprises:

- ST 2070-1 Common Provisions document
- ST 2070-2 OP1a mapping
- ST 2070-3 OP-ATOM mapping
- xx 2070-4 Applications and Usage Rules

Status: Parts 1-3 are at FCD ballot, all closing 2013-07-26. Part 4 has not been started yet.

AHG Project: Draft ST 381-3: – Mapping AVC streams into the MXF Generic Container

This project started as a revision of RP 2008. The group decided that the document should be a Standard.

Status: This document was raised to DP status by a vote at the TC meeting.

AHG Project: Revision ST 422:2006: JPEG2000 in MXF

The main purpose of this revision is to add provisions for interlaced images.

Status: The document passed FCD ballot on 2013-01-07 with a total of 28 comments to resolve. The AHG has consensus on proposed resolution; it needs to be entered on KAVI and agreed.

AHG Project: Revision ST 434: XML representation of MXF metadata

Update ST 434 to take account of changes to ST 377-1 and other MXF documents



Status: The AHG Chair reported that the document should be ready to submit to the TC for pre-FCD-ballot review in 2 weeks.

AHG Project: Revision RDD 9:2009 Sony MPEG Long GOP Products

The revision will clarify the descriptions of system and essence items; add further constraints of codec and mapping implementation; add examples of Index Table application.

Status: This document is in the publication queue and it was agreed that the group would be disbanded.

AHG Project: Draft RDD: AVC MXF Proxies

This RDD defines an MXF Application Profile for AVC proxies with MPEG-2 AAC audio per Operational pattern 1A (OP1a).

Status: The document is at RDD ballot, closing 2013-07-26.

AHG Project: Amendment ST 382: Mapping AES3 and Broadcast Wave Audio into the MXF Generic Container

This amendment adds Constant Duration Audio Custom Wrapping.

Status: This document was published in the last quarter and the group will be disbanded.

AHG Project: Amendment RP 2057: Text-Based Metadata Carriage in MXF

This amendment overcomes a problem of duplicate UL assignment.

Status: This amendment was published in the last quarter and the group will be disbanded.

AHG Project: Revision ST 436: MXF Mappings for VBI Lines and Ancillary Data Packets

It has been decided that this project will create ST 436-1 (compatible with current ST 436) and will compile a list of topics for a separate project, ST 436-2, which will add new features or constraints that are possibly incompatible with ST 436-1.

Status: ST 436-1 passed FCD ballot on 2013-05-15 with 21 comments to resolve.

AHG Project: Revision ST 2019-4: Mapping VC-3 Coding Units into the MXF Generic Container

Five new Compression IDs need to be added (triggered by changes to ST 2019-1 in TC-10E), plus a cleanup of normative references as necessary.

Status: This document passed FCD ballot on 2013-03-13 with 9 comments to resolve. Comment resolution will start shortly.



WG Project: Draft ST 2034: Archive Exchange Format (AXF)

This Working Group (31FS-30) will define an archive format that will promote interoperability between all forms of archive media. A multipart suite of documents is planned; Part 1 deals with 'AXF Structure and Semantics' and includes an XML schema.

Status: Part 1 completed pre-FCD-ballot review with 4 comments to resolve. The WG Chair expects the document to be ready for FCD ballot before the next meeting round.

Business Impact: Interoperability and more cost effective handling of technology migration issues in archives

AHG Project: XML Schema for Audio and Related Metadata

This project will develop an XML Schema for audio and related metadata focusing on technical aspects

Status: The AHG Chair hopes to have a document for AHG review in 1-2-weeks.

AHG Project: Draft ST 2065-4: ACES Image Container File Layout

This project defines an AMPAS Image Interchange Format (IIF) file format for 'ACES'. An associated IIF-related SMPTE project has published an amendment to ST 268: File Format for Digital Moving-Picture Exchange (DPX) for APD_ADX data.

Status: This document is in the publication queue; the group will be disbanded upon publication.

AHG Project: Draft ST 2001: XML Representation of SMPTE-registered Data (Reg-XML)

ST 2001 is about representing instances of SMPTE-registered data in XML.

There are two Parts: ST 2001-1: Mapping Rules (includes 2 schemas)
 ST 2001-2: AAF and MXF data (includes an XML meta-dictionary and schema)

Status: The Part 1 draft package passed FCD ballot on 2012-07-16 with 10 comments to resolve. At the time of the TC meeting, there were 2 comments whose resolution was not accepted; these have since been accepted.

The Part 2 draft package passed FCD ballot on 2012-12-06 with 5 comments to resolve; resolution is in progress.

New TC-31FS Business

Introduction to a Potential New Project on MXF Timecode Mapping and Labeling

The US Library of Congress would like to define a standard way of carrying 3 timecodes in an MXF file for archive purposes. There are several options, but it would simplify the archive operation if just one were adopted.

One-Year and Five-Year Document Reviews



A number of 1-year and 5-year document reviews were undertaken. The TC voted on appropriate action for each document, effective 2 weeks after the vote if no alternative action is proposed (document titles can be found [here](#)):

1-year review documents reaffirmed:

ST 2049:2012

5-year review documents reaffirmed:

ST 405:2006

ST 389:2005

ST 410:2008

ST 407:2006

ST 408:2006

RP 2002:2006

ST 383:2008

ST 384:2005

ST 394:2006

In addition, some projects will be started to revise / amend other documents.

Network and Facilities Architecture Committee (32NF) chaired by Alan Lamshead 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.

Topic: TC-32NF Publications in the last quarter

RP 291-2:2013 - Ancillary Data Space Use — 4:2:2 SDTV and HDTV Component Systems and 4:2:2 2048 × 1080 Production Image Formats

ST 435-1:2012 - 10 Gb/s Serial Signal/Data Interface — Part 1: Basic Stream Derivation

Corrected version ST 2022-5:2013 Forward Error Correction for Transport of High Bit Rate Media Signals over IP Networks (HBRMT)

ST 291 has also been renamed ST291-1 to allow for RP 291-2 introduction.

WG Project: Mappings

This Working Group (32NF40) co-ordinates projects that specify how image formats are mapped onto interfaces.

The **business impact** of all work items concerns interoperability between systems.

AHG Project: ST 425 suite of 3Gb/s Multi-Link Interfaces



To create 3G SDI interface mappings for the real time transport of image formats: 1920x1080; 1280x720; currently approved 2k and 4k; UHDTV-1; UHDTV-2, including stereoscopic images.

Current Document Set:

- ST 425-2 (3D images that fit in one 3 Gb/s link), now published
- ST 425-3 (Single images that fit in two 3 Gb/s links)
- ST 425-4 (3D images that fit in two 3 Gb/s links), now published
- ST 425-5 (4K images that fit in four 3Gb/s links)
- ST 425-6 (3D images that fit in four 3Gb/s links)

Status: The draft ST 425-3 passed FCD ballot on 2013-06-05 with 13 comments to resolve. The comments are all resolved and the document was sent for 2 week comment resolution review On 2013-06-20. The WG recommends a DP vote on KAVI at the end of the review period. The ST 425-5 document is well advanced; 2-week pre-FCD-ballot review is expected early in July. The ST 425-6 document is essentially the 3D version of 425-3 and can also build on ST 425-4 techniques. Work will begin once 425-3 has passed DP vote.

AHG Project: Document suite 2076: 3D Production Timing & Sync

This group is developing a document suite on 3D timing and sync for:

Part 1: Acquisition Systems

Part 2: Live Production Systems

Part 3: Physical Layer / Transmission System.

Status: The group held a meeting during the San Jose round and decided to restructure the document set to add an EG, into which much of the informative material from Part 3 will go. It is expected that all four documents will have gone to FCD ballot before the September meeting round.

AHG Project: SDI Audio Track Allocation Signaling

This project will define a signaling mechanism, likely to be carried in Vertical Ancillary Data Space, that provides serial digital interfaces with a means to clearly identify the configuration parameters of any given SMPTE ST 299-1 or -2 embedded audio track.

Status: The AHG is considering whether a simple document that points to other work (e.g. in MXF, IMF, D-Cinema) would be sufficient to meet the project goal.

AHG Project: EG on SDI Interfaces

This group will draft EGs to provide an overview of the many SMPTE SDI interface standards and technologies, including how they relate to each other, what image formats are carried, performance. An initial idea is to build the existing EG 2069 document on optical networks into a family:

Part 1 – Overview of SDI interface standards

Part 2 – Copper SDI networks

Part 3 – Optical SDI networks



Status: This project is currently on hold pending identification of additional / alternate resources to move the work forward.

WG Project: Interfaces

This Working Group (32NF50) co-ordinates projects that specify electrical and optical interfaces.

AHG Project: Draft ST 2062: 25 Gb/s Serial Signal/Data Interface

Documents: Part 1: Image Format Mapping Part 2: Optical Fiber Interface

Status: These documents both passed FCD rebalot on 2012-08-22. Draft ST 2062-1 had 36 comments to resolve, draft ST 2062-2 had 13 comments to resolve.

The AHG has identified an issue with the way that ST 352 information is formatted and has asked for advice from the TC and the mapping WG.

AHG Project: Revision EG 34: Pathological Conditions in Serial Digital Video Systems and Revision RP 198: Bit-Serial Digital Checkfield for Use in High-Definition Interfaces

Status: There was no report on these documents.

AHG Project: Revision RP 184: Specification of Jitter in Bit-Serial Digital Systems and Revision RP 192: Jitter Measurement Procedures in Bit-Serial Digital Interfaces

Status: RP 184 revision is underway and the group discussed ways that measurements made over a shorter time period could be used. RP 184 has a reference to RP 192, and so the RP192 work needs to get started.

WG Project: Video Over IP

This Working Group (32NF60) was established to handle all projects related to IP transport of media; this is the ST2022 family of documents currently comprising 6 published Parts.

AHG Project - ST 2022-7: High-Availability delivery of SMPTE 2022 streams through Fully Redundant Transmission

This project will standardize an interoperable method for generating redundant SMPTE 2022-n streams such that a receiver can generate a single highly available output.

Status: The document is at FCD ballot, closing 2013-06-26.

One-Year Review of ST 2022-6: Mapping of High Bit Rate Media Signals on IP Networks

Interoperability tests have revealed minor variations and a two-sentence amendment is proposed for clarity. An amendment project will be proposed.

SG Project: Media Production System Network Architecture



Several SMPTE TCs have projects that involve IP networks and this SG was formed to identify parameters to consider in network design.

Status: The group has been holding bi-weekly telecons and has completed initial draft work on the Introduction, Scope, Use Cases, and Media Production System characteristics / user expectations. Drafting is focused on Section 5, that addresses network technologies and tools in terms of risks and benefits as they are used in Professional Media Systems. A final section will contain conclusions.

SG Project: Code-point Extension Mechanism for the ST 337 family

There are no free code points left in ST 338 for identifying non-linear PCM formats in AES-3. The group will study extension mechanisms, looking first at a method adopted for consumer interfaces by the IEC.

Status: The group submitted its report to the TC and it was approved. Following the report's recommendation, a [revision project](#) has been initiated for ST 337, ST 338 and any other documents affected.

SG Project: Study Group on Embedded Audio

The group will study the support that SDI infrastructure provides for single link 3Gb/s, multi-link 3Gb/s and how much of that supports the full 32-channels of audio per link. It will recommend any standardization work that it finds necessary.

Status: This is a newly formed group. It may start its work with a survey.

Project Proposal: Evolving SDI for UHD TV and 4K

Two companies gave a joint presentation about the possibilities of next generation Serial digital Interfaces for 4K and UHD TV. It proposed a hierarchy of standards that easily map to the existing 1.5 and 3 Gb/s implementations, starting with 6, 12 and 24 Gb/s. It proposed an RDD to cover existing 6 Gb/s implementations and a Standard for the family. It is probable that the RDD and the Standard will be introduced as separate projects.

One-year and Five-year Document Reviews

A number of 1-year and 5-year document reviews were undertaken. The TC voted on appropriate action for each document, effective 2 weeks after the vote if no alternative action is proposed (document titles can be found [here](#)):

1-year and 5-year review documents reaffirmed:

RP 2050-1:2012, EG 2050-2:2012

EG 2069:2012

ST 2022-1:2007, ST 2022-2:2007, ST 2022-3:2010, ST 2022-4:2011

ST 2041-1:2010, ST 2041-2:2010, ST 2041-3:2010

ST 2047-2:2010, ST 2047-4:2011

ST 2063:2012

ST 292-2:2011



ST 299-1:2009, ST 299-2:2010
ST 425-1:2011, ST 425-2:2012, ST 425-4:2012
EG 2039:2008
ST 2019-3:2008
ST 304:2009
ST 311:2009
RP 207:2005
RP 223:2003
RP 2005:2008
RP 178:2004

5-year review documents made stable:

ST 294:2001
RP 212:2002
RP 215:2001
ST 302:2007
ST 305:2005
ST 322:2004
ST 326:2000
ST 348:2005

In addition, some projects will be started to revise / amend other documents.

Time Labeling and Synchronization Committee (33TS) chaired by John Fletcher and Bob Edge

The application of the general scope as it applies to the definition of time labeling of essence and the synchronization of systems and essence in both digital and analog forms over networked and streaming transports.

Business impact: all work items concern interoperability between network based synchronization schemes, and to provide new functionalities on time labeling.

Topic: TC-33TS Publications in the last quarter

ST 309: 2012 - Transmission of Date and Time Zone Information in Binary Groups of Time and Control Code

EG 35: 2012 - Time and Control Code Time Address Clock Precision for Television, Audio and Film

Topic: Time Label and Synchronization WGs



The two WGs below held meetings over 3 days, 2013-04-22 to 2013-04-24 at the BBC in London, UK. The next meetings of these WGs will be 2013-07-10 to 2013-07-12 at Ryerson University, Toronto, Canada

WG Project: Time Labeling (TL)

This WG (33TS-10) will specify a Time Label to replace SMPTE Time Code and provide support for higher frame rates, time duration greater than 24 hours, and off-speed acquisition. The WG has a separate drafting AHG that holds regular telecons. A multipart document set is planned.

Status: The preliminary list of time label component objects is nearing completion. A review of the currently documented workflows and use-cases is underway.

WG Project: Synchronization

This WG (33TS-20) will define a media synchronization system that can be distributed over standard IP networks.

Draft ST 2059-1: The SMPTE Epoch and generation and alignment of interface signals

This document contains:

- Definition of epoch used for synchronization system
- Alignment of video and audio signals at the epoch
- Formulas for generating video, audio, ST 12 time code and ST 309 date from TAI time and additional metadata

Status: Pre-FCD-ballot review ended 2013-04-17 and comments led to some simulation activity that has led to corrections in the signal generation equations. The resulting document will be reviewed at the Toronto meetings with an objective of submitting it for FCD ballot.

Draft ST 2059-2: Precision Time Protocol SMPTE profile for time and frequency synchronization in a professional broadcast environment

This document is the IEEE 1588 PTP profile for use with the SMPTE synchronization system.

Status: At the April WG meeting, it was agreed that ST2059-2 is ready for FCD ballot. It is being held so that the Part 1 and Part 2 documents can be balloted together. There have been recent comments that the group should review ST 2059-2 to see if compatibility with the AES media profile can be achieved; this will be done at the Toronto meeting. Concerns about the jam-time metadata also need to be discussed.

A Synchronizing System Introduction document has been drafted and the need for EG and RP documents is being discussed.



AHG Project: Amend ST 12-1: Time and Control Code and Amend ST 12-2: Transmission of Time Code in the Ancillary Data Space

This amendment adds information for handling 48 frames-per-second rate in the same way as the document currently handles 50 and 60 fps (includes /1.001 rates).

Status: Both documents passed FCD ballot on 2013-03-11; ST 12-1 had 9 voter comments and ST 12-2 had 4 voter comments. All comments are now resolved, so the document can proceed to pre-DP review.

AHG Project: Amend ST 2051: Two-Frame Markers for 50-Hz and 60(/1.001)-Hz Progressive Digital Video Signals on 1.5 Gb/s and 3 Gb/s Interfaces

This amendment adds information for handling the 48 frames-per-second rate in the same way as the document currently handles 50 and 60 fps (including /1.001 rates).

Status: This document passed FCD ballot on 2013-03-11 with 11 voter comments. One remaining comment was resolved by a TC meeting disposition vote, so the document can proceed to pre-DP review.

Project Proposal: Revise ST 318: Synchronization of 59.94-Hz or 50-Hz Related Video and Audio Systems in Analog and Digital Areas – Reference Signals

A new project has been set up to add alignment information for ST 2051-1 and general editorial cleanup.

Status: Project Approved

Media Systems, Control and Services Committee (34CS) chaired by Chris Simons and John Footen

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.

WG Project: BXF

This Working Group (34CS-10) has defined the Broadcast Exchange Format. It is primarily an XML-based system that standardizes exchange of Schedule, As-run and Content-related metadata.

The document suite is:

- ST 2021-1: General Information and Informative Notes
- ST 2021-2: Protocol
- EG 2021-3: Use Cases
- EG 2021-4: Schema Documentation
- RP 2021-5: Ad-ID / EIDR in BXF (new document for BXF 3.0)
- RP 2021-9: Implementing BXF



Project: BXF 3.0

This project adds further feature enhancements to BXF.

Status: All documents affected by BXF 3.0 have completed pre-FCD-ballot review with no comments. FCD ballots will be started.

AHG Project: Media Device Control over IP

This project will produce a suite of documents:

ST 2071 Part 1: Media Device Control Framework - Now Published

ST 2071 Part 2: Wire Level Protocol

ST 2071 Part 3: Discovery

ST 2071 Part 4: Core Capability Interfaces

Status: Part 2 is in the publication queue.

Part 3 describes how various existing Service Discovery Protocols work with the Media Device Control Framework, including a “zero configuration” mode. It is at pre-FCD-ballot review, closing 2013-07-01.

Part 4 has been revised to work with a proposed “Repository of Device Capabilities”. Further drafting is held until the form of the repository is agreed with SMPTE HQ.

Sample implementations for Parts 1,2,3 have been written by the document.

RDD Project: FIMS 1.0 - Framework for Interoperable Media Services

This project is for the submission, review, and acceptance of the Framework for Interoperable Media Services (FIMS) specification as a SMPTE RDD.

Status: The RDD ballot for FIMS 1.0 passed on 2013-02-24 with 16 voter comments. The project Chair expects comment resolution to be complete in 2-4 weeks.

Business Impact: Interoperability between software systems in digital workflows

Five-year Document Reviews

One 5-year document review was undertaken. The TC voted on appropriate action, effective 2 weeks after the vote if no alternative action is proposed (document title can be found [here](#)):

5-year review document made stable:

ST 207:1997



Media Packaging and Interchange Committee (35PM) chaired by Howard Lukk and Thomas Bause Mason

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.

Business Impact: Interoperability between systems, cost effective exchange of master formats in file form and new functionalities.

WG Project: Interoperable Master Format (IMF)

The Working Group (35PM-50) co-ordinates the activities of a number of AHGs defining various aspects of IMF. IMF will comprise a master set of file-based elements to be assembled for any downstream distribution using multiple composition playlists. It is the intent that this standardized set of files will be used as the input to subsequent processing that will create deliverables.

Status: The WG held three telecons in the last quarter. Four IMF documents were raised to DP status at the TC meeting (see below); however, they will be held due to dependencies on publication of ST 422 (revision) and ST 2001.

Project: Draft ST 2067-20: IMF Application #2, JPEG 2000

Status: Raised to DP status at the TC meeting.

Project: Draft ST 2067-30: IMF Application #3, MPEG-4 Visual Simple Studio Profile (SSStP)

Status: Raised to DP status at the TC meeting.

Project: Draft ST 2067-2: IMF Core Constraints

Status: Raised to DP status at the TC meeting.

AHG Project: IMF CPL and OPL

This group has developed ST 2067-3: Composition Play List (CPL) and is drafting ST 2067-4: Output Profile List (OPL)

Status: Draft ST 2067-3: Interoperable Master Format – Composition Playlist is published. Work has started on the OPL document and some OPL use-cases are being considered.

AHG Project: IMF Wrapping, Security & Packaging

This group has developed ST 2067-5: Interoperable Master Format – Essence Component



Status: Draft ST 2067-5: Interoperable Master Format – Essence Component passed ST Audit on 2013-02-20 with no comments.

AHG Project: IMF Data (Text) Essence

Status: Mapping from ST428-7: D-Cinema Subtitle to SMPTE-TT is currently under way in [TC-24TB](#).

AHG Project: IMF Audio

Project: ST 2067-8: IMF Common Audio Labels.

Status: Raised to DP status at the TC meeting.

AHG Project: IMF Sample Material Interchange

This group has been set up to facilitate interoperability testing by making sample material available online.

Status: The group had one telecon in the past quarter.

Project Proposal: Draft ST 2067-21: Extensions to IMF Application #2, JPEG 2000

This extension is proposed to support UHDTV applications. It was agreed in the TC that a formal proposal for the project should be set up.

EBU / SMPTE / VSF Joint Task Force on Networked Media

This EBU / SMPTE / VSF Joint Task Force held a meeting during the San Jose standards round. It provided an overview of the task force work. The focus is deliberately stated as “Packet-based” rather than “IP based”, to avoid unnecessary constraints. It is believed that we have a window of opportunity before proprietary solutions become entrenched, which would frustrate interoperability.

The project is organized into 3 phases:

- 1: Define the business-driven use cases & requirements (some 122 “user stories” have been submitted to date).
- 2: Define the framework & reference architecture
- 3: Define & coordinate the tasks to realize the output of Phases 1 & 2

Some upcoming timeline events are:

- 27 June - meeting in Geneva to discuss user requirements
- 15 July - publication of user requirements
- 20 August - meeting in London to discuss request for technology
- 9 September (start of IBC) - have RFT published



Notes on this report and the SMPTE Standards Process

SMPTE Technology Committees (**TC's**) are tasked with the development and ongoing maintenance of engineering documents relevant to Television, Broadband, Film and Digital Cinema. TC's are set up by the Standards Vice President (**SVP**) and are overseen by the Standards Committee (**ST**).

The standards process operates under the [SMPTE Standards Operations Manual](#) .

Within Technology Committees, there may also be Working Groups (**WG's**), Study Groups (**SG's**) and Ad-Hoc Groups (**AHG's**).

'Standards Community' (**SC**) is a collective term that includes all Technology Committees. It is used to convey information that is relevant to all TC's, such as meeting logistics and registration information. An SC meeting is held during each meeting round.

SMPTE document development process

The document stages are:

WD = Working Draft **CD** = Committee Draft

FCD = Final Committee Draft

DP = Draft Publication, which initiates **ST Audit** - a due process check by the Standards Committee

SMPTE document-type abbreviations

ST = Standard

RP = Recommended Practice

EG = Engineering Guideline

RDD = Registered Disclosure Document

SMPTE document review

The SMPTE Operations Manual calls for review of published documents:

One Year after original publication - to check whether comments have been received during initial implementations

At Five Year intervals after original publication - to check whether the provisions need to be revised

There may be proposals to Revise or Amend documents, or they may be reaffirmed, made stable or withdrawn.

Other Notes

This report describes each active **Project** in each TC. Occasionally, there is more than one project group working on a particular technology field. In this case, those projects are grouped under a **Topic** headline.

SMPTE manages its standards documentation, meetings and ballots in an online system called **Kavi**.

Kavi has a **Project View** feature that includes a project summary page. It is used to state the project justification at the proposal stage and to track progress through to completion.

In this report access to the project view, where available, is via a hyperlink in the [Project](#) word in the title.