



# Standards Quarterly Report

Result of the SMPTE Standards Committee Meetings March 2013  
Hosted by the Hong Kong Design Institute





## **SMPTE Standards Quarterly Report Executive Summary**

As a result of SMPTE Standards Committee Meetings  
04-08 March 2013  
Hosted by Hong Kong Design Institute,  
Hong Kong

The SMPTE Technology Committees, and numerous subgroups met at the Hong Kong Design Institute from 4 – 8 March; 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, is proceeding to ballot.

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 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.



## SMPTE Standards Quarterly Report Detailed Account

As a result of SMPTE Standards Committee Meetings  
04-08 March 2013  
Hosted by Hong Kong Design Institute,  
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*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](http://www.smpte.org/standards) for more information.*

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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 \(35PM\)\*\*](#)

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](mailto:standards@smpte.org)

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



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The next round of Standards meetings will be held on 19-22 June 2013 at Stanford University in Palo, Alto, CA, USA.

Upcoming Standards meetings are planned for:  
18-22 September 2013 in Munich, Germany hosted by IRT.  
9-13 December 2013: Location to be announced.



## Detailed Account of March 2013 Meetings

### ***Topic: Review of Published Documents; 1 year and 5 years***

SMPTE documents are reviewed one year after publication and thereafter, every 5 years. A list was submitted to each TC this time. TC members were generally appointed to make an assessment of each document and to report back next time. The options are revise/amend, reaffirm, declare stable, withdraw.

### **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: TC-10E Publications in the last quarter***

Revision: ST 2048-3, 4096x2160 Digital Cinematography Production Image Formats FS/709 – Mapping into Multi-link 10 Gb/s Serial Signal/Data Interface

### ***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; an estimated 6 months delay is anticipated. 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 algorithm. The document suite plan has been expanded in the last quarter and currently comprises:

- Part 1 - Elementary Bitstream
- Parts 2 - 3 Image Formats
- Part 4 Layers
- Part 5 Sections



- Part 6 Metadata
- Reference Codec

**Status:** Part 1 passed FCD ballot on 2013-01-24 with a total of 36 comments to resolve. 35 were resolved but two further issues were raised at the AHG's Hong Kong meeting. Further solutions to resolve all comments have been proposed.

Parts 2 -6 are largely complete, but are waiting for 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 document was published 2012-08-30. The TC Chair noted that this probably should not have been done, because it is normal to wait until the reference decoder/bitstream files are available. The AHG Chair undertook to get a schedule within two weeks for delivery of these items.

**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:** There was no report from the AHG - though it is believed that work is quite well advanced.

**Business Impact:** Interoperability between systems

***End of Video compression standards in SMPTE Topic***

**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 document passed FCD ballot on 2012-03-01, with 79 comments. Completion of comment resolution is believed to be close; 15 are awaiting sign-off.

**Business Impact:** Interoperability between systems and signaling in digital workflows

- **AHG Project: Reference Display and Environment for Critical Viewing of Television Pictures**
- Users have requested standardization work in SMPTE on new fixed pixel matrix reference displays since CRT-based reference monitors have practically disappeared from the market. A suite of four documents is planned:
  - Part 1: Reference Display characteristics
  - Part 2: Reference Viewing Environment characteristics
  - Part 3: Measurement Techniques for Reference Display and Reference Viewing characteristics
  - Part 4: Engineering Guideline to provide context and background
- **Status:** The Part 1 document (in a slightly cut-down form) has reached pre-FCD-ballot review and comments are being addressed; the aim is to have ballot close before the June meetings. The Part 2 document requires additional research that is being arranged to investigate whether there needs to be a relationship between display size and reference white level, as well as some other issues. The Part 3 and Part 4 documents are to follow.

**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. Comment resolution is nearing completion; the AHG Chair reported that just 2 comments remain and that completion may be “a week away”

**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 project closed FCD ballot 2013-01-03. Comment resolution is complete and the document was raised to DP status by voice-vote at the TC-10E meeting.

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

**AHG Project: Revision of RP 219:2002 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:** This project is newly approved. The existing RP 219 has been transformed into the current template and is ready for documenting the additional signal elements. The target is for the document to be at pre-FCD-ballot review by the June meeting round.

**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 project was approved 2012-12-20 and an AHG has been formed. A working draft document was submitted to TC-10E during the meeting week.

**Business Impact:** address a long know issue and enhances interoperability

**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:** The ST 429-2 amendment passed ST Audit on 2012-11-27. At the last meeting, a problem was identified with a Universal Label assignment in ST428-12 and the corrected version was raised to DP. This document has since passed ST Audit on 2013-02-25. Both documents are in the publication queue.

**Business Impact:** Interoperability between systems

***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 SG last met 2013-01-23. The group is preparing a test material shoot to allow compression bitrate testing and the final report will include compression conclusions.

**Business Impact:** proposals for high frame rate technology standards

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



This AHG is proposed to revise ST428-11-2009 to define 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:** A draft-revised document was reviewed in the TC meeting. The AHG has submitted a version to the TC that is ready for FCD ballot.

**Business Impact:** Interoperability between systems

### *End of Digital Cinema High Frame Rate Projects Topic*

#### **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 429-12 - D-Cinema Packaging - Caption and Closed Subtitle

Revise ST 428-7 - D-Cinema Distribution Master - Subtitle

**Status:** The revised draft ST 428-7 passed FCD ballot on 2012-12-21 with 6 comments, which are now all resolved. The AHG will carry out a final review before sending to the TC for pre-DP review. No further revision work is needed on ST 429-12, as a decision on ST 428-7 regarding CPL extensions has made the work unnecessary.

Related work has also started that involves making small changes to ST 429-2: DCP Operational Constraints and ST 429-5: Timed Text Track File.

**Business Impact:** Compatibility and Interoperability

#### **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 document was elevated to DP on 2012-08-21, but had not been posted for ST Audit at the time of the TC-21DC meeting.

**Business Impact:** Interoperability between systems

#### **AHG Project: Auxiliary Data Track File**

This AHG will write a standard 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).



**Status:** The AHG Chair reported that no comments had been received since the last meeting and that a strawman draft would be submitted in the next few days.

**Business Impact:** Interoperability between systems

**AHG Project: Synchronization Signal for External Processor**

This AHG will write a standard for a synchronization signal that can be played back from a server and be used to accurately synchronize an external processor. This is related to the Auxiliary Data Track File proposal.

**Status:** The AHG met on 2013-01-23 and there have been no comments since. The AHG Chair noted that this technique, using an audio sync signal, is being used in movie production now.

**Business Impact:** Interoperability and quality improvements

**Proposed Project: Draft EG 429-1: DCP Packaging Guideline**

A telecon is planned for 2013-03-20 to discuss this project. Some draft text has already been submitted, but help is required from experienced DCP implementers.

**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 revision of ST 2052-1, revision of RP 2052-10 and new document ST 2052-11 passed FCD ballot on 2013-02-08 with 2 comments, 3 comments and 6 comments respectively. All comments have been resolved and the documents are undergoing pre-DP vote review.

New document RP 2052-12 is under review in the AHG, 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 and Containerization
- Part 2: Fingerprint Transport / Binding (includes VANC in SDI/HD-SDI, IP, MPEG)

**Status:** The draft of Part 1 will be submitted to the TC for 2-week pre-FCD-ballot review in the week of 2013-03-25.

The draft of Part 2 included a section on "File Binding" which was holding up the rest of the document; it has been decided to move it to another Part and to attempt to recruit file systems experts. As a result, Part 2 target completion should be prior to the June meeting round. 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. Work is proceeding on comment resolution.

**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: UHD TV 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 December meeting round, the group has held 5 telecons as well as a face-to-face meeting in Hong Kong. There have been submissions on “What is UHDTV”, “Managing the Bandwidth Explosion”, Mezzanine Compression, High Frame Rate (including debate over 1000/1001-related rates) and Ecosystem charts.

### **Cinema Sound Systems (25CSS) chaired by Brian Vessa**

*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 reviewed a set of diagrams that showed the relationship of various parts of the TC-25CSS workflow and projects.

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

#### **AHG Project: 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 has established a naming convention for the raw data collected and has drafted an analysis method. Data analysis will begin mid-March, using two venues. The results will be reviewed to establish whether the method needs refinement before moving on to all venues measured.

#### **AHG Project: 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 first task of the group is information gathering using a detailed survey that is being distributed to studios, major cinema chains, and cinema calibration companies. It will gather information about calibration techniques actually being used in the field. This survey should return results in approximately 60 days. A testing scenario will be developed from these results.

#### **AHG Project: SMPTE Calibration Pink-Noise Standard and Test File**



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 held 2 telecons, with another scheduled 2013-03-11.

**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.

**Status:** Six immersive audio systems are currently being studied. A joint approach has been received from the National Association of Theater Owners (USA) and the International Union of Cinemas (Europe) on the subject of Immersive Sound Requirements. There was a request at the meeting for the group to produce a common format that would work for TV as well.

**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.*

Note that the TC was unable to complete its agenda, due to the time taken to discuss motions and conduct a number of votes.

**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 early in March 2013 and comments are requested. Work is ongoing.

**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 Part 1 report was sent to the TC for review and small changes were made. At the TC meeting there was a vote to accept the Part 1 report; the vote passed without objection. The SG Chair expects that the Part 2 report will be finished by the end of March 2013. The SG has also drafted a work statement (see Other TC-30MR Business, below).

**AHG Project: RPxxxx: DOI Name and EIDR Identifier representation**

These terms relate to metadata:

DOI = Digital Object Identifier

EIDR = Entertainment Identifier Registry

**Status:** This new project was set up following the December 2012 meeting. It was initially set up as a one-man project and the draft document was sent to the TC for 2-week review. One commenter responded and it was proposed at the TC meeting that the work should be handled as an Ad-Hoc Group. This was agreed; a Kavi group will be formed.

**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:** A vote was held at the TC meeting to set up this project as an AHG. The vote passed with one abstention and no objections.

**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 is developing a report listing requirements for an online system.

**Status:** There was no time for discussion of this topic. The group's report is complete and has been sent to the EVP for use by SMPTE HQ.

**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:** There was no time for discussion of this topic. The remaining work for this SG is to complete a report of conclusions from the earlier meetings.

#### ***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:** There was no time for discussion of this topic. However, the AHG has requested initiation of 2-week pre-FCD-ballot review in the TC.

#### **AHG Project: Draft Essence Register Structure**

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

**Status:** There was no time for discussion of this topic.

#### ***End of Topic: Register Structure Document Projects***

#### **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 will 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, each revision is identified by a version number.

The Elements and Labels contents have historically been identified with an '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 WG met during the Hong Kong round and updated the status on:

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

**Status:** A large number of additions have been assembled for RP 210v14. Changes are still being applied, so v14 is not yet ready for ballot.

**AHG Project: Update Metadata Labels Register Contents (RP224)**

**Status:** Many items have been added to the latest draft of RP 224v13 and this version will conform to the requirements of ST 400, which is now published.

**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 new draft of the register has been uploaded. 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 new draft of the register has been uploaded, but some additions are needed. Over the next few weeks, it will be converted to conform to its newly published controlling standard ST 2003. It should be ready by the June meeting round.

**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 now in the queue for ST Audit.

**Other TC-30MR Business**

**Project Proposal: revision of RP205: Application of Unique Material Identifiers in Production and Broadcast Environments**



This proposal developed from the final work of the Application of the Unique Material Identifier (UMID) SG. There was some discussion and an Action Item was agreed for the TC Chairs to work with the proponent to set up a new project.

**[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: 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, introducing new MXF features / applications and revising 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 61 comments from the FCD ballot on 2010-02-28 have been addressed and resolution of the last 2 will continue into March. In view of the age of that ballot, an FCD rebalot is proposed.

**[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 is one comment being resolved that could result in new boilerplate text being produced for use with all EG's.

**[AHG Project: Revision ST 380: MXF – Descriptive Metadata Scheme-1](#)**

**Status:** There was no AHG report, but the group has scheduled telecons to prepare the document for FCD ballot.

**[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:** Substantial progress on the draft was reported at the AHG meeting in Hong Kong. The AHG considers that the document is ready for TC review.

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

**Status:** ST Audit closed. There are 4 comments that are being resolved.

**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:** There was no report. The project shows status as pre-DP review that finished 2013-01-23.

**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:** The pre-ballot review and comment resolution of Parts 1-3 are complete. It was decided to advance the work to the TC after Universal Labels for sub-descriptors have been fixed. 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:** The draft document passed FCD ballot on 2012-11-09 with 55 comments to resolve. Comment resolution is well under way, with completion expected before the June meetings.

**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, which will resume in March 2013.

**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:** There was no report from the group.

**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.

**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 RDD draft will be ready for TC review soon.

**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 has completed ST Audit with 2 comments to resolve (now resolved).

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

This amendment overcomes a problem of duplicate UL assignment.

An [advisory note](#) has been posted.

**Status:** This amendment passed ST Audit on 2013-01-27 and is in the publication queue.

**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, that will add new features or constraints that are possibly incompatible with ST 436-1.

**Status:** Drafting work on ST 436-1 is in its final stages. After some language improvement, the document will be sent to the TC for pre-FCD-ballot review.

**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 is at FCD ballot, closing 2013-03-13.



### ***End of MXF Projects Topic***

#### **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 has all sections bar one completed; a new editor for that section may have to be found. The document should be ready for TC review shortly.

**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:** A new AHG Chair has been appointed. A significant update to the WD is underway.

#### **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 draft document passed DP ballot 2013-02-14 and will now go to ST Audit.

#### **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 and all comments have been addressed. At the TC meeting, DP elevation was requested, but an overridden comment issue needs investigation first.

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

### **New TC-31FS Business**

#### **Recommendation – Dictionary Entry Symbols in TC 31FS Documents**

The TC has developed a reference document that outlines processes for adding xml symbols to ULs in



TC-31FS documents. The document has been updated in the light of comments since the last meeting and it was agreed that the provisions of the document would be adopted and reviewed after one year.

**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**

*The following documents have been published:*

- ST 435-1:2013 10 Gb/s Serial Signal / Data Interface - Part 1: Basic Stream Distribution
- ST 435-2:2013 10 Gb/s Serial Signal / Data Interface - Part 2: 10.692 Gb/s Stream - Basic Stream Data Mapping
- ST 435-3:2013 10 Gb/s Serial Signal / Data Interface - Part 3: 10.692 Gb/s Optical Fiber Interface
  
- ST 2036-3:2013 Ultra High Definition Television -Mapping into Single-link or Multi-link 10 Gb/s Serial Signal/Data Interface

*The following documents are on the verge of publication:*

- RP 291-2:2013 on use of Ancillary Data
- ST 352: 2013 (revision) Payload ID

**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 has been sent to the TC for pre-FCD-ballot review.

Work on the ST 425-5 document will start at the next AHG meeting, using the time while ST 425-3 is in ballot.

The ST 425-6 document is essentially the 3D version of 425-3. Work will begin once 425-3 has completed ballot.

#### **AHG Project: 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 is planning to have documents available for pre-ballot review by the June meeting cycle.

A question was raised regarding Part 3; it has little or no normative provisions, so should it be an EG rather than an RP? The AHG Chair will keep this under review as the drafts proceed.

#### **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 audio track carried as part of the ANC data.

**Status:** This new group is just starting work, its first telecon was 24th January. At the AHG meeting, the group identified some documents that dealt with related fields - SMPTE ST 2035 and EBU R123 for example, also some relationship with the Broadcast Wave Format document (EBU and AES).

#### **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:** An AHG has been set up for this new project. Progress on document development will occur between now and the June meeting cycle.

#### **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 went to FCD rebalot that closed 2012-08-22.  
Draft ST 2062-1 passed ballot with 36 comments to resolve.  
Draft ST 2062-2 passed ballot with 13 comments to resolve.

Four telecons have been held this year and significant progress has been made. It is hoped that comment resolution on both Parts will be complete by the June meetings.

**AHG Project: Revision EG34: Pathological Conditions in Serial Digital Video Systems and Revision RP 198: Bit-Serial Digital Checkfield for Use in High-Definition Interfaces**

**Status:** These two documents will go out for ballot before June 2013.

**AHG Project: Revision RP184: Specification of Jitter in Bit-Serial Digital Systems and Revision RP192: Jitter Measurement Procedures in Bit-Serial Digital Interfaces**

**Status:** The work to narrow the scope of these revisions (announced at earlier meetings) is still work-in-progress.

**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-x: 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 close to being ready for pre-ballot review.

**AHG Project: Draft RP 291-2: Ancillary Data Space use – SDTV and HDTV component systems**

There have been a number of issues with Ancillary space implementations and this document has been introduced to make some additional provisions and explanations.

**Status:** This document is now in the publication queue and the group will be disbanded.

**AHG Project: Revision of ST 352:2011: Payload Identification Codes for Serial Digital Interfaces**

The project tasks are to revise ST 352:2011 to address the issues of Payload ID assignment for external SDOs, and to clarify ambiguities in the existing ST352:2011.



**Status:** This document is now in the publication queue and the group will be disbanded.

**SG Project: Media System IP Network Design**

Several SMPTE TCs have projects that involve IP networks. There is a need for a SG to identify parameters to consider in network design.

**Status:** The group has been holding weekly telecons and the aim is to finish its report before the June meeting round. The group is considering holding an intensive 2-day face-to-face meeting in May.

**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 has considered the IEC extension mechanism and has agreed some improvements to the proposal. It hopes to complete its report shortly, recommending the formation of an AHG to revise the standards affected.

**Proposed New Project – Seamless Switching and routing of ST 2022-6 signals in IP networks**

Scope: Describe and standardize (if necessary) the steps and required mechanisms and protocols to achieve seamless switching and routing of SMPTE 2022-6 signals in IP networks. This is similar to VI switching but in the IP domain.

**Status:** This project proposal is waiting for the proponent to complete.

**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 concerns interoperability between network based synchronization schemas, and to provide new functionalities on time labeling.

***Topic: TC-33TS Publications in the last quarter***

EG 40:2012: Conversion of Time Values Between SMPTE 12-1 Time Code, MPEG-2 PCR Time Base and Absolute Time.



### **Time Label and Synchronization WGs**

The two WGs below held meetings over 3 days, 2013-02-11 to 2013-02-13 at Xilinx, San Jose, CA, USA. The next meetings of these WGs will be 2013-04-22 to 2013-04-24 at the BBC in London, UK.

#### **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; Off-speed acquisition. The WG has a separate drafting AHG that holds regular telecons.

**Status:** A multipart document set is planned. The first Part has been started; it is a collection of Time Label component objects.

#### **WG Project: Synchronization**

This WG (33TS-20) will define a media synchronization system that can be distributed over standard IP networks. The WG has separate drafting AHGs for:

##### **Draft ST 2059-1: Generation of Signals from IEEE1588 PTP / SMPTE Profile Time**

This document contains:

Definition of epoch used for synchronization system

Alignment of video and audio signals at the epoch

Formulae for generating video, audio, ST 12 timecode and ST 309 date from TAI time

##### **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:** The ST2059-2 document completed 2-week pre-FCD-ballot TC review on 2013-02-28. The comments are being worked through, but the feeling had been expressed that the document should not advance to ballot before ST 2059-1 is complete. ST 2059-1 did not gain consensus approval at the WG meetings to start pre-ballot review. However, at the TC meeting, a vote was held to advance the ST 2059-1 draft to the TC; the vote passed.

The need for EG and RP documents and a system introduction document is being discussed.

#### **AHG Project: Revision of Date and Timezone documents**

ST 309 is being revised to correct a Daylight Saving Time problem. EG35 is being revised to clarify procedures for maintaining sync between ST 12 timecode and clock time.

Documents:     Revision of ST 309: 1999 Transmission of Date and Time Zone Information in Binary Groups of Time and Control Code  
                  Revision EG 35: 1999 Time and Control Code Time Address Clock Precision for Television, Audio and Film



**Status:** Both documents are in the queue for publication.

**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 were at FCD ballot at the time of the meeting. The ballots passed 2013-03-11; ST 12-1 had 9 voter comments and ST 12-2 had 4 voter comments.

**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 (includes /1.001 rates).

**Status:** This document was at FCD ballot at the time of the meeting. The ballot passed 2013-03-11 with 11 voter comments.

**Other TC-33TS Business**

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

A new project will be set up.

**Liaison to IEEE 1588 v3** The IEEE is about to embark on specifying v3; our present work is based on v2. TC-33TS has drafted some requests for changes for IEEE 1588 v3.

Two liaison letters to AES are in progress. One to AES-X192 and a second to AES SC-02-02

**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 2021-9: Implementing BXF

**Project: BXF 3.0**

This project adds further feature enhancements to BXF - see [project](#) for initial list.

**Status:** All the items for BXF 3.0 are essentially complete and a telecon will be held on 2013-03-12 to review the change documentation and establish consensus that formal amendments to BXF documents can begin. BXF 3.0 publication goal: by the end 2013.

**AHG Project: Media Device Control over IP**

This project will produce a suite of documents:

ST 2071 Part 1: Media Device Control Framework  
ST 2071 Part 2: Wire Level Protocol  
ST 2071 Part 3: Discovery  
ST 2071 Part 4: Core Capability Interfaces

**Status:** Part 1 is on the point of publication. Part 2 received comments at ST Audit and these have been addressed. Part 3 describes how various existing Service Discovery Protocols work with the Media Device Control Framework, including a “zero configuration” mode. It is expected to go to FCD ballot soon. Part 4 has been revised to work with a proposed “Repository of Device Capabilities”. This is envisaged as an online resource that will allow easy addition of new device capabilities.

**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 comments are being addressed and an issue concerning whether an RDD should reference an external site for a more up-to-date version is being considered by the Standards Committee.

**Business Impact:** Interoperability between software systems in digital workflows



**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 two telecons since the last meeting round. A number of the sub-group documents are at ballot - see below.

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

**Status:** The draft ST 2067-20 passed FCD ballot 2012-12-26 with 31 comments. All comments are addressed; 1 comment is unresolved. It was noted that one of the document's Normative References is under revision. At the TC meeting, a request was made that document number ST 2067-21 be reserved for an extension to ST 2067-20.

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

**Status:** This draft document closed FCD ballot 2012-12-26 with 9 comments. All comments have been resolved.

**Project: Draft ST 2067-2: IMF Core Constraints**

**Status:** This draft document closed FCD ballot 2012-12-26 with 43 comments; 41 have been addressed and 2 are unresolved. It was noted that one of the document's Normative References has not yet completed ballot.

**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 passed ST Audit on 2013-02-20 with no comments.

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.

The AHG does not currently have any other activities.

**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**

There are two projects under this AHG - [Project:](#) ST 2067-6: IMF Audio Quantization and Sampling;

[Project:](#) ST 2067-8: IMF Common Audio Labels.

These titles have recently changed:

Part 6 was called IMF PCM Audio Essence

Part 8 was called IMF Common Audio Channels, Soundfield Groups and Groups of Soundfield Groups

**Status:** The group's two documents passed FCD ballot on 2012-12-26:

The draft ST 2067-6 had 13 comments - all now resolved. At the TC meeting, there was discussion about incorporating ST 2067-6 into ST 2067-2 in its entirety. It was generally seen as a good idea, but the debate was whether an additional FCD ballot would be needed. The group will probably proceed on the basis that the pre-DP comment period can be used to gain comments on the merger.

The draft ST 2067-8 passed FCD ballot 2012-12-26 with 21 comments - all now resolved.

**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 did not meet in the past quarter.



## 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 Engineering Vice President (**EVP**) and are overseen by the Standards Committee (**ST**).

The standards process operates under the [SMPTE Engineering 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 include 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

### 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 new **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.