



# Standards Quarterly Report

Result of SMPTE Standards Committee Meetings December 2012





## SMPTE Standards Quarterly Report; Executive Summary

As a result of SMPTE Standards Committee Meetings  
03-07 December 2012  
Hosted by Disney / ABC,  
Burbank, California, US

The Q1 report includes detail on a very large number of current projects. This Executive Summary highlights projects at a critical stage, particularly where user input is needed, and major new work items.

The Group studying Reference Display and Environment for Critical Viewing of Television Pictures, under the [10E Essence Technology Committee](#) has made substantial progress recently in advancing the work on reference monitors based on fixed pixel matrix displays. Also, in this committee, projects addressing enhanced color bar signals and full-range RGB encoding have been approved and work is under way.

The [Digital Cinema Technology Committee \(21DC\)](#) continues work on 3D subtitling and high frame rates.

In [TC-24TB Television and Broadband Media](#) is working intensively on the study of the UHDTV ecosystem.

The new Technology Committee, [TC-25CSS Cinema Sound Systems](#) has formed groups to analyze the test data collected by the earlier Study Group, and to refine techniques for calibration of Cinema B-Chains. Additional groups will work on standardizing pink noise, as well as the study of immersive audio systems.

In the [Network Facilities Technology Committee \(32NF\)](#) the Study Group on Media System IP Network Design is working intensively, and expects to produce a report in the near future. Work continues on many aspects of video over IP. Of particular interest are High-Availability delivery of SMPTE 2022 streams through Fully Redundant Transmission, and a proposed project to investigate Seamless Switching and routing of ST 2022-6 signals in IP networks.



## SMPTE Standards Quarterly Report; Detailed Account

As a result of SMPTE Standards Committee Meetings  
03-07 December 2012  
Hosted by Disney / ABC,  
Burbank, California, US

---

*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.*

---

If you need help getting started with the SMPTE Standards process and some of the conventions 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 the SMPTE Standards program, please contact Peter Symes, Director of Engineering and Standards, at [psymes@smpte.org](mailto:psymes@smpte.org).

The next round of Standards meetings will be 4-8 March 2013 in Hong Kong.



## Detailed Account of December 2012 Meetings

### **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**

SMPTE ST 2066:2012, Disparity Map Representation for Stereoscopic 3D  
Published September 2012

SMPTE RP 157:2012 (Revision of RP 157-1995), Key and Alpha Signals  
Published 26 November 2012

#### **Topic: Video Compression Standards in SMPTE**

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

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

**Status:** The revised Picture Compression and Data Stream Format document passed DP ballot on 2012-10-23.

Part 2 of the document suite is under development and a draft is expected to be available by March.

*Impact: Standardizing current industry practice ensures that SMPTE standards remain relevant to the industry.*

##### **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 is almost ready for FCD ballot (and the ballot has since been posted). Some optional elements are still being moved out to Part 2.

Parts 2 and 3 should be ready for FCD ballot before March 2013 and Parts 4-6 should be ready for FCD ballot in Q2-Q3 2013. There is also VC-5 work planned for an MXF Wrapper (TC-31FS) and a VC-5 IMF Application (WG 35PM50).

*Impact: Standardized compression formats with clear IPR allow enhanced interoperability among multiple vendors and educated business decisions.*

**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, while Part 2 VC-2 Level Definitions had been published in 2009. Part 3 has been delayed pending availability of up-to-date bitstreams.

*Impact: Standardized compression formats with clear IPR allow enhance interoperability among multiple vendors and educated business decisions*

***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. There had been some delays in the ballot resolution process, but at this meeting a revised draft document was posted that was understood to address all comments. The two-week formal comment resolution review period was started at the meeting.

*Impact: supports the market acceptance of 3DTV and development of interoperable systems with new features.*

**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 2: Measurement Techniques for Reference Display and Reference Viewing characteristics
- Part 4: Engineering Guideline to provide context and background

**Status:** Since the last meeting round, the group has held eight teleconferences and a full-day testing session. The principal purpose of the testing session was to determine the best method (of three) for setting black level in a controlled critical viewing environment.

The group feels that early publication of certain reference display parameters (in particular, reference white level) would be of benefit to the industry. A simplified version of the Part 1 document is therefore to be made available by March, to be considered for early ballot. This is to be augmented by a fuller version later.

**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 to include 4:2:2 and 4:4:4 signal formats for 525 and 625 line systems.

**Status:** This document passed FCD ballot on 2012-02-07 with 63 comments.

A revised draft (v20) addressing the comments has been posted. Most comment resolution has been accepted as resolved.

*Impact: clarifications and update of the SMPTE standard, which is a fundamental baseband standard for digital standard definition television.*

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

This revision is to add support for an additional higher frame rate and a wider color gamut.

**Status:** This project was introduced around the time of the last meeting and the document has proceeded quickly to FCD ballot, closing 2013-01-03.

*Impact: update and align the SMPTE standard for UHDTV with ITU-R BT.2020. This is required since SMPTE has and develops further interface standards for UHDTV.*

**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:** This project is recently approved. A first draft is expected to be made available in early 2013.

**New TC-10E Business**



**Proposed Project: Revision of RP 219:2002 High-Definition, Standard-Definition Compatible Color Bar Signal**

The proposal is to add a new optional test pattern to allow testing of the full signal range, including the levels in the white overshoot region above level 940 (10 bits).

**Status:** The project proposal review period ends 2012-12-20. In the meeting it was suggested that a more appropriate title would be “Test Pattern” rather than “Color Bar Signal.”

**Proposed Project: Full-Range RGB Image Coding**

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

**Status:** The project proposal review period ends 2012-12-20.

**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.*

In addition to covering all the projects below, the TC spent some time considering an anticipated liaison from TC-35PM that will request changes to TC-21DC documents to broaden their applicability to allow their use for IMF as well as DC.

The TC also gave consideration to documents that will come up for five-year review soon.

**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.

**Status:** At the time of the meeting, ST 428-12 and ST 429-2 had just passed ST Audit. However, it had been identified that universal label assignments in ST 428-12 should be changed because they were in a sub-class for picture rather than audio. A new DP elevation vote was held for the document with this change included; the vote passed. The revised ST 428-12 will go again to ST Audit.

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.

*Impact: New audio channel arrangements can be precisely labeled in a DCP without the need for additional standards development for each proposed arrangement.*

### **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 posted a short interim report to the TC at the end of October 2012. The group will carry out compression bitrate testing and the final report will include compression conclusions.

*Impact: Provide science and basic understanding about next-generation HFR-capable systems and develop recommendations for future standards needs.*

#### **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:** This project was approved on 2012-08-31 and the AHG will be set up. It was emphasized at the TC meeting that the work will deal with currently implemented HFR's.

*Impact: Enable HFR presentation in currently deployed hardware and provide guidance and standards to be used by the designers of next-generation HFR-capable 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 is at FCD ballot, closing 2012-12-21.

A first draft revision of ST 429-12 has been produced and discussion about new CPL extensions is under way.

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

*Impact: Improved fidelity of subtitle rendering between systems and run-time rendering of subtitles for stereoscopic program, as is currently available for 2D 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 document has passed ST Audit and is now being prepared for publication.

*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:** This project was approved 2012-09-30 and an AHG has been set up. The Chair described a frame-wrapped container for this purpose.

**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:** This project was approved 2012-09-30 and an AHG has been set up.



**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: Amendment ST 2035-2009: Audio Channel Assignments for Digital Television Recorders**

This work brings ST 2035 into conformance with ITU-R BS. 1384-1 by adding a further two 12 track channel assignments.

**Status:** The document passed ST Audit and is in the publication queue at SMPTE Headquarters.

**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).

Already published: Part 1: Timed Text Format (SMPTE-TT)  
Part 10: Conversion from CEA-608 Data to SMPTE-TT

Ongoing work: Review and update of Parts 1 and 10 above  
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:** In the last quarter, the revision of ST 2052-1, Revision of RP 2052-10 and new document ST 2052-11 have been developed to the point of being ready for two-week pre-FCD-ballot review. New document RP 2052-12 is under review in the AHG.

*Impact: Ensure the availability of closed captions when television content is delivered through the Internet.*

**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 a 2-Part 'Audio to Video Synchronization Measurements' document based on audio and video fingerprints:

- Part 1: Fingerprint Specification
- Part 2: Fingerprint Transport (includes VANC in SDI/HD-SDI, IP, MPEG)

**Status:** The draft of Part 1 is estimated to be 90% complete with a target of ballot readiness in January 2013. Some additional concepts have recently been agreed and added.

The draft of Part 2 is estimated to be 70% complete, with the MPEG and IP sections drafted, SDI under way and File Binding next.

*Impact: when standardized enhances the end-user experiences by avoiding lip-sync issues.*



**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 superseded when RP 2072 publishes.

**Status:** The previous Chair of this group has retired and a new Chair has taken over. The draft RP 2072 passed FCD ballot on 2012-11-27 with 11 comments to resolve.

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

**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:** This new project was approved on 2012-10-29. The group held two meetings during the Burbank round and developed an Ecosystem diagram.

*Impact: The Study Group will give guidance of what technologies/standards are required in a future UHDTV chain.*

**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.*

This was the first official meeting of the TC and it dealt with a number of administrative matters including approving the sub-groups below and setting the participating membership of the TC.

**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:** This new project was approved on 2012-11-21 and the SG was formally approved at the TC meeting 2012-12-06. The first meeting was set for 2012-12-12 and the work was characterized as “minimizing the nuisance variables” using today’s technology.

**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:** This new project was approved on 2012-11-21 and the SG was formally approved at the TC meeting 2012-12-06. The first part of this work will be integrating the output of the various data loggers that had been used.

**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:** This new project was approved on 2012-11-21 and the SG was formally approved at the TC meeting 2012-12-06. The first meeting is set for 2012-12-19 and the target completion is 2013-Q3.

**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:** This new project was approved on 2012-11-21 and the SG was formally approved at the TC meeting 2012-12-06. The first meeting was set for 2012-12-18.

**Other TC-25CSS Business**

**Proposed Project: Loudness for movies and cinemas**

A proposed work statement was reviewed and discussed; the aim is to parallel the BS.1770-3 work adopted for television. The proposal also mentions the excessive loudness levels that are experienced in some movie theaters.

**Status:** The proponents will fine-tune the proposal.



**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.*

*Impact: Metadata and Identifiers such as UMID are essential to automated workflows and a pre-requisite to achieving the potential efficiencies and cost savings of these workflows.*

**Topic: TC-30MR Publications in the Last Quarter**

SMPTE ST 400:2012 SMPTE Labels Structure  
Published 2012-10-02

**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 initial draft was circulated and the AHG held a teleconference 2012-11-16. Items requiring editing were identified and an updated draft will be posted by 2012-12-14.

**SG Project: UMID Application**

Unique Material Identifier (UMID) is standardized in ST 330. RP 205 covers application of UMIDs in Production and Broadcast Environments. This SG is studying whether further standardization would make the UMID more useful, particularly in Material location across various systems.

**Status:** The project Chair is finalizing an intermediate report that will be submitted before the end of December 2012. A final report, proposing standardization, is planned for the March 2013 meeting round. A set of seven UMID application principles has been proposed.

**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:** The group's report is complete and TC-30MR approved submitting the report to the EVP for use by SMPTE HQ.

**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 remaining work for this SG is to complete a report of conclusions from the earlier meetings.

One outcome from these meetings was a proposal to develop a SMPTECore based on EBUCore metadata with additional mapping to Movielabs metadata. Initial investigations have been productive and a SMPTECore project proposal will be set up.

#### **AHG Project: Revision of RDD18 - Acquisition Metadata Sets for Video Camera Parameters**

**Status:** This document is now published and the group will be disbanded.

#### ***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 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:** This AHG met during the meeting round and resolved some issues in the development of the WD. The target is for the document to reach CD status before the March 2013 meetings.

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

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

**Status:** The WD is close to completion, however it will be necessary to find a new document editor to finish the work.

#### **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.

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

#### **WG Project: Metadata Definition**

This Working Group (30MR10) coordinates 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.

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

**Status:** A large number of additions have been assembled for RP 210v14 and it should soon go to ballot. This version will conform to the current published ST 335 - i.e. with URN format and XML symbols. An issue has been found with the assignment of some ST 377-4: Multi Channel Audio element assignments that overlap with Digital Cinema Auditorium Security Message assignments. This is corrected in v14 and an [advisory note](#) will be posted on the SMPTE website.

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

**Status:** Many additional items have been added to the latest draft of RP 224v13 and this version will conform to the requirements of draft 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:** There have been many new additions and the editor is still working on EBUCore Class 13 additions.

**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:** This draft register will soon go to ballot for the first time, as its controlling standard ST 2003 is now published. Some items need finalization before the register goes for review.

**AHG Project: Draft EG 2074: Metadata Naming Guidelines**

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

**Status:** All FCD ballot comments have been resolved and the TC meeting approved sending the document for two-week review prior to a DP elevation ballot.

**Other TC-30MR Business**

**Proposed Project: DOI Name and EIDR Identifier representation**



These terms relate to Movielabs metadata:

DOI = Digital Object Identifier

EIDR = Entertainment Identifier Registry

**Status:** The TC agreed to set up a new project proposal.

**Process Issues arising from RP 2057 / AMWA AS-03 conflict:**

An issue has arisen because the same Group key UL value has been used in RP 2057 and in AMWA AS-03. This stems from an early agreement that AAF and MXF would use the same keys.

**Status:** The TC Chair showed a proposed agreement between AMWA and SMPTE to prevent this issue from reoccurring. There was discussion and the proposal will be converted to a liaison letter.

**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.

*Impact of MXF work: The various efforts on MXF are key enablers for interoperability and cross-vendor support of content exchange and processing in file-based workflows – in all media related applications*

**AHG Project: Amendments to ST 377-1:2011 and Bitstream Exchange**

When ST 377-1:2009 was published, certain topics were omitted because they needed more work or testing before consensus could be achieved. This project took on these topics for amendments to ST 377-1. One amendment was published and also rolled-up into the Standard published as ST 377-1:2011. Another amendment that focused on “Channel ID and Mono Source track properties” was published as Amendment 1: ST 377-1:2011 and this required amendment to ST 382, as Amendment 1: ST 382:2007.

**Status:** All amendments covered by this work are now published or in the publication queue. The group will be disbanded.

**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:** This document passed FCD ballot on 2010-02-28 with 61 ballot comments to resolve. The project was inactive for some time, but has recently been picked up again. Telecons are planned every two weeks to resolve 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 passed DP ballot on 2012-10-24 but has yet to go to ST Audit.

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

**Status:** An AHG telecon has been held and actions were agreed. Editing will restart on the draft.

**AHG Project: Revision EG 42: MXF Descriptive Metadata**

**Status:** This work will be completed after the ST 380 revision is finished, though the draft is well-advanced. The AHG has been discussing questions about support for multiple DMS schemes; this will probably be addressed in the EG 42 revision.

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

**Status:** A new AHG chair and document editor was appointed at the last meeting. A substantially complete document for discussion will be submitted to the AHG soon.

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

**Status:** The document was elevated to DP by voice vote at the meeting.

**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 passed FCD ballot on 2012-08-23. The document now has element and group UL's assigned by TC-30MR; this will allow the remaining two comments to be accepted.

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

The project name was formerly "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:** Ongoing. Drafts of Parts 1,2,3 went to two-week pre-ballot review at the end of 2011. Comments were received and most have been resolved. The documents need further work and another round of pre-ballot review may be held.  
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 has started.

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

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

**Status:** The group met at the Burbank meeting round and the revised document went to FCD ballot immediately afterwards, closing 2013-01-07. A request for registration of ULs in the document was submitted to TC-30MR on 2012-12-03.

**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, though it was noted that a set of comments on the draft had been posted to the group and that time would be needed to review them.

**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 passed RDD ballot and all comment resolution has been accepted. The document will proceed to ST Audit.

**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:** RDD drafting is progressing with an aim to have a ballot document by early 2013.

**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 elevated to DP by voice vote at the meeting.



**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 FCD ballot with no comments and was automatically raised to DP status.

**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 continues.

**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 clean-up of normative references as necessary.

**Status:** This is a new project, approved 2012-10-20. A revised draft has been posted to the TC for review.

***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 is well-advanced and the group expects this document to go to the TC for two-week pre-FCD-ballot review in the next 1-2 months.

*Impact: The work on an Archive Exchange format will provide the basis for standards that facilitate interoperable content exchange between archives, independent of physical media, or archive system vendor.*

**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 has retired and a replacement is being recruited.

**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 is ready to be posted by the TC for comment resolution review prior to DP ballot.

**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 two 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; the AHG awaits responses.

The Part 2 document was at FCD ballot at the time of the meeting, closing 2012-12-06. The ballot passed with five comments to resolve.

**New TC-31FS Business**

**Proposed Project: Amendment ST 379-2: MXF Constrained Generic Container**

This proposal was discussed in the TC. Concern was expressed about unexpected “knock-ons” from changing this “foundation” document. The TC decided that due to lack of a chair, the project would be set-aside for now.

**Proposed Project: ST 377-4 Amendment**

The main issue behind this proposal was correction of an error in a UL value and it was decided that HQ could correct this editorially, without creating a project.

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

The Chair asked the TC to review a proposal he had drafted on this topic. It outlines processes for adding xml symbols to ULs in TC-31FS 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***

EG 2069:2012, SMPTE ST 297 Optical SDI Networks



Published 2012-09-19

SMPTE ST 424:2012 (Revision of SMPTE 424M-2006), 3 Gb/s Signal/Data Serial Interface  
Published 2012-11-26

SMPTE ST 2022-5:2012, Forward Error Correction for High Bit Rate Media Transport Over IP Network  
Published 2012-11-26

SMPTE ST 2022-6:2012, Transport of High Bit Rate Media Signals Over IP Networks (HBRMT)  
Published 2012-11-26

### **WG Project: Mappings**

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

### **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: 1920 x 1080; 1280 x 720; 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 group anticipates ST 425-3 will be posted for pre-FCD-ballot review in January 2013. A strawman document has been prepared for ST 425-5 showing an overview of mapping methods. Work on ST 425-6 will start when ST 425-3 is complete.

*Impact: this work is relevant to all areas of realtime and uncompressed content exchange applications in the professional domain. With these standardized interfaces the industry can build interoperable products and users can define realtime production systems with functioning workflows.*

### **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:** Development of the document suite drafts has not progressed in the last quarter, but fortnightly teleconfernces will resume in 2013. A productive meeting was held during the Burbank week.



*Impact: This document (when complete) will be relevant for all facilities doing Stereoscopic 3DTV production*

**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.

**Status:** This is a new project approved since the last meeting round. Initial thought is to create a suite of documents based on the 2069 number used for the existing EG on optical networks:

Part 1 – Overview of SDI interface standards

Part 2 – Copper SDI networks

Part 3 – Optical SDI networks

**WG Project: Interfaces**

This Working Group (32NF50) coordinates 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.

The AHG meeting earlier in the Burbank week resolved many of the comments; at the TC meeting, TC-32NF reviewed and agreed changes to the project scope that would resolve some comments.

*Impact: Ultra-High-Definition is defined in two levels – as 4K and 8K formats for TV frame rates. This work is required for the exchange of realtime and uncompressed UHD TV images between systems in the professional domain, thus it will directly impact equipment manufacturers.*

***Topic: Video Jitter/Pathological Documents***

*Impact: This set of documents for jitter and pathological signals will ensure the quality of service in digital production environments.*

**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:** There is a plan to get these two documents completed and into TC two-week review early in 2013.



**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:** Some progress was made in the face-to-face meeting but more work to narrow the scope of work is required.

**SG Project: Jitter Definition, Measurement and Specification**

The purpose of this group is to write a “best practice” report on jitter measurement, leveraging techniques used in telecommunications.

**Status:** At the TC meeting, it was decided to disband this group as no volunteers could be found to do the research.

***End of Video Jitter/Pathological Project Topic***

**WG Project: Video Over IP**

This Working Group (32NF60) was established to handle all projects related to IP transport of media. See below for a new project proposal from this WG.

*Impact: The set of documents being developed in regard to video transport over IP will address the important need of the media industry to move towards IP-based infrastructures in professional media production. The standards will facilitate interoperability between systems.*

**AHG Project: SDI on IP**

Documents:           Draft ST2022-5: FEC for High Bit Rate Media Transport on IP  
                              Draft ST2022-6: High Bit Rate Media Transport on IP

**Status:** Both documents are published.

**AHG Project - 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:** A large part of this meeting round’s WG time was allocated to this AHG to discuss some issues with the latest draft of the document; good progress was made. The document is substantially complete.

**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:** All comment resolution has been accepted and the AHG requested a DP elevation vote for the document.

A vote was held at the TC and the vote passed.

**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 ST 352:2011.

**Status:** All comment resolution has been accepted and the AHG requested a DP elevation vote for the document.

A vote was held at the TC and the vote passed.

**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:** This project was approved since the last meeting round and is moving quickly in an effort to have its work complete by the Hong Kong meeting round. Weekly telecons are scheduled.

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

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

**Status:** This project was approved since the last meeting round. It has a target of end 2013-03 for completion of its report.

**Other TC-32NF Business**

**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 2202-6 signals in IP networks.

This is similar to VI switching but in the IP domain. The TC Chairs will adapt the submitted information into a project proposal.





**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.*

The two WGs below held meetings over three days, 2012-10-08 to 2012-10-10 at EBU, Geneva, Switzerland.

**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.

**Status:** A drafting AHG has been set up and regular teleconferences starting in the week 2012-12-17 will be scheduled.

**WG Project: Synchronization**

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

**Status:** The group is developing the two documents below; new drafts of both documents are planned before Christmas 2012.

*Impact: These standard should provide substantial business savings when implementing new production infrastructures.*

**Draft ST 2059-n: Generation of Signals from IEEE 1588 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 timing and SMPTE 12M time code from TAI time

**Draft ST 2059-p: 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.

**AHG Project RDD: Sony e-TSync Products - Transferring Synchronization Signals over an IP network**

This RDD defines the method of transferring a synchronization signal using an existing time synchronization protocol (IEEE1588).

**Status:** This document was sent for RDD ballot, which was still open at the time of the meeting.



**AHG Project: Revision of Date and Timezone Documents**

ST 309 needs a correction for a Daylight Saving Time Problem. EG35 needs revision to 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: Revision of EG 40:2002: Conversion of Time Values Between SMPTE 12M Time Code, MPEG-2 PCR Time Base and Absolute Time**

**Status:** The revised EG 40 is 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:** The AHG has met once since the projects were approved. The target is to get the draft amendments to two-week pre-ballot review before Christmas 2012.

**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:** The AHG has met once since the projects were approved. The target is to get the draft amendments to two-week pre-ballot review before Christmas 2012.

**Other TC-33TS Business**

**Possible need to revise:**

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

There was discussion about the possible need to add details of the Epoch to this document (when the Epoch details are fixed).



**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 schema changes for the BXF 3.0 items have been completed and the supporting documentation will start soon.

Ad-ID metadata is a recent addition to BXF 3.0 work. Work to incorporate the whole Programming Metadata Communication Protocol (PMCP) schema has been deferred to BXF 4.0.

**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 (was planned to be Part 4)
- ST 2071 Part 4: Core Capability Interfaces (was planned to be Part 3)

**Status:** Part 1 is in the queue for publication. Part 2 is awaiting ST Audit. Part 3 describes how various Service Discovery Protocols work with the Media Device Control Framework; the draft will be discussed at the next meeting. Part 4 has a device capability list that is completed and the group is now working on syntax for each standardized capability.

*Impact: Greater control flexibility and reduced costs of equipment and infrastructure*

**Other TC-34CS Business**

**Proposed 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:** Project review will close on 2012-12-24. There was also an FIMS update at the TC meeting, with details of a Repository Service Interface planned for FIMS 2.0.

*Impact: Detailed SMPTE review of the FIMS specification*

**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.*

**WG Project: Interoperable Master Format (IMF)**

The Working Group (35PM-50) coordinates the activities of a number of AHGs defining various aspects of IMF.

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

**Status:** This draft document is at FCD ballot closing 2012-12-26.

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

**Status:** This draft document is at FCD ballot closing 2012-12-26.

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

**Status:** This draft document is at FCD ballot closing 2012-12-26.

**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 currently at ST Audit. The ST 2067-4 OPL document will incorporate a contribution from the IMF audio group. At the WG meeting, a useful presentation on OPL was given; it helps to explain its purpose and relationship to the CPL.

**AHG Project: IMF Wrapping, Security & Packaging**

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

**Status:** ST 2067-5 is currently at ST Audit.



### **AHG Project: IMF Data (Text) Essence**

**Status:** Mapping from ST 428-7: 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:](#) IMF PCM Audio Essence; [Project:](#) Channels/Groups

**Status:** The group's following two documents are at FCD ballot closing 2012-12-26:

Draft ST 2067-6: IMF PCM Audio Essence

Draft ST 2067-8: IMF Common Audio Channels, Soundfield Groups and Group of Soundfield Groups

This AHG is considering work on IMF audio metadata and a document on "Preparing Audio for IMF."

### **[AHG Project:](#) IMF Sample Material Interchange**

This group has been set up to facilitate interoperability testing by making sample material available online. An initial proposal for the operation of this process has been drafted.

**Status:** Application #2 files have been uploaded and further contributions from Sony Pictures are expected soon.



## 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.