ISDCF Main Meeting Notes – June 29, 2017

<u>Upcoming Meetings</u>

Thursday August 10, 10:30am at Universal
Thursday October 19, 2017 10:30am at Universal (tentative)

Part 1: General Reporting

Housekeeping:
- Antitrust Disclaimer – The official antitrust guidelines are posted on our website and are linked from the main ISDCF page. A short verbal overview of guidelines was given.
- InterSociety will pay for all upcoming lunches!! Please become a member!!
- Thank you to Universal for the facilities and parking.
- Thank you to Universal for support of the Chairman.
- Thank you to Inter-Society for providing the funding for notes, travel, general expenses, LUNCHES! and admin support.
- Thank you to Universal/Intersociety for the coffee and treats
- Meeting notes from March '17 were reviewed and approved.
- InterSociety request to be a member! $500/company. Please Join Inter-Society! http://www.intersociety dot org / become-a-member / $500 per company per year, $100 individual membership.
- Legal reminder / press reminder - see antitrust guidelines on our website - http://isdcf.com/ISDCF/home/introduction.html. A verbal description was provided at the meeting.
  * Chatham House Rule:
    * When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.

Attendance is at end of these notes.

> **Action Items from May 10, 2017**
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> 1. Please Join Inter-Society! http://www.intersociety.org/become-a-member/ $500 per company per year, $100 individual membership.
> 2. Add link to Document 7 (language codes) to the digital cinema naming

convention Appendix #1ab.

3. Update Document 7 for the algorithm for selection of named language tracks (Harold H)
4. Add to breadcrumbs to test language codes for next plugfest.
5. Prepare a follow-on to the alternate delivery of audio language tracks (start with Harold's document) Jerry
6. Publish revised Doc 3, Doc 4, Doc 5.
7. Update and post Tech Document 12 -Ingest Behavior document
8. SMPTE 25css will consider ISDCF immersive sound plugfest

From Earlier Meetings:

9. Create a generic ISDCF framing chart to be freely shared
10. Techie group to discuss RPL timing - Harold, Dean/JP (Dolby), Tim R (TI), Bill E., Kevin (Christie). Jerry to send emails to Harold.
11. Subgroup to edit / recommend changes for Document 12 - RP for Ingest Behavior - Steve L to lead, Dean B, John H, Mike R, Jim W, Chris W, Bill E "volunteered" to participate.

ISDCF Forum:

Most are not using forum, but outsiders do visit the forum. The search words most likely are how to make a DCP or KDM.

A suggestion was to post comments that have come up on the reflector and include some of these on the forum. This idea was rejected. No one should summarize reflector comments for the forum. Basically if you want to post on the forum, go ahead and post on the forum. Don't post for anyone else, only yourself.

SMPTE-DCP - Updates

General: Last meeting there were known issues: about 600 sites have issues with server (120-ish sites) / TMS (320-ish sites) / or system that for some reason have problems. The server issue has been addressed and software updates are being distributed. The TMS issue

is also being addressed.

Disney:

> *Guardians*, *Pirates*, *Cars 3* all SMPTE-DCP (2D and 3D) 3,200 sites SMPTE (.02% error), 600 interop (software is now available DSS-100 (297)/DSS-200 (0) to move forward.) TMS (273) is slowly being resolved, others (279 issue sites - captions, audio routing or something wrong - not sure what). [Numbers US/Canada] **Goal: 100% SMPTE in 2018**

Paramount: *Bay Watch* (34 caption issues - as discussed below for language code). Six more titles this year. **All future 2D releases in SMPTE.**

Universal: *Happy Death Day* (Oct 13), *Thank You for your Service* (Oct 27), *Pitch Perfect 3* (Dec 22)

Fox - *Snatched*, *Diary of Wimpy Kid*, 5 titles to come. **Goal: 100% SMPTE in 2018**

Sony: *Rough Night* (3 issues - .1%)

WB: (no report)

Lionsgate: (no report)

International is also moving forward - UK moving forward - encrypted test files being exercised, Netherlands, Finland working.

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Language Code - an issue that came up during Cars 3:

The feature had a closed caption track XML labeled "EN-US" and one of the trailers has a closed caption track labeled "EN". The closed caption device saw these as two different languages and put one on channel 1 and the second on channel 2 of their device.

What are the authoring guidelines? What should be the equipment reaction?

Bottom line: Follow the standard in authoring (EN-US, EN-UK, EN-AU and EN are all valid labeling). This is described in the standard RFC-4647 - language range is defined. This is referenced in the SMPTE standard for CPL. This is described in ISDCF Document 7 in more detail.

Suggestion: if there is only one closed caption track for a CPL playback (no matter what the code) that closed caption be put on the lowest display channel.

This is a topic for next plugfest. Added to the breadcrumbs:

We should test language codes for subtitles at next plugfest. One CPL with only one closed caption (CC) track. One with two CC tracks (EN and EN-UK). A playlist with first CPL with CC EN, second CPL with CC FR. A playlist with first CPL with CC EN, Second CPL with two CC tracks EN-GP and FR.

There is some "confusion" on where the language code comes from. From the CPL? From the RPL? Does a server issue a language code based on the CPL? the XML? It was decided to have SMPTE 21DC look at this and clarify.

Closed captioning systems determine languages from the RPL (they have no access to the CPL). Some servers built the RPL from the CPLs that will play. However, it appears that others may take it from the language element in the timed text XML file. On the authoring side, the timed text language element and the CPL language attribute for the reel should agree.

ISDCF Test Content

We have seen an increase in the number of requests for KDM for the posted ISDCF SMPTE-DCP Version B2.1 content. Good sign!

These was a question of a customer's requirements for a valid SMPTE-DCP package and what is posted on the ISDCF test content website. Bottom line: a customer may request different features than are included in the ISDCF test content - the test content is to be used for playback testing, not as a definitive set of authoring guidelines.

Test package B2.1 calls for MCA labels, no entry point subtitles, closed and open captions, markers, ratings. (For 3D subtitles - variable Z.)

Delivery spec from a customer needs to be documented. Just because it is "similar" to Test Package B2.1 - the only thing ISDCF can do is to see if a particular package meets the SPEC, not that it meets the customer requirements.

Markers: FFOC /LFOC / FFMC / FFEC. None, any or all of these would pass the specification. A particular customer may request none, some or all of these. This would not be a specification issue.

Aspect Ratios

One movie was released with varying aspect ratios (2.35 to 1.90 packaged in a flat (1.85) container). There was some objections by exhibition for this release - especially in Europe. Is there anything we can do? Information / metadata so exhibition would be aware of the issues?

Studios provide projectionist letters describing situations like this.

We generally agree that film makers are going to make creative choices and ISDCF can't really help this situation. Probably an issue to be discussed by exhibition.

The idea of a studio providing a title card saying something like "This movie was formatted to meet creative intent" - general belief that no director would encourage the use of this type of information.

Discussion for Alt Delivery of Content

A small group met to discuss delivery of additional content for movies: motion seat tracks, alternate spoken language, sign language, mystery science theater alternative additive track, etc. The question is: should there be a recommendation of how to delivery this additional out-of-band content. Is there a recommendation?

In our discussion the first challenge was defining nomenclature. We came up with five content delivery flavors, five ways of synchronization between playback and external device and finally ways of communicating to devices in the theater.

Content Delivery Flavors

1. **Common DCP playback (existing, DBox, Auro 11.1, video in audio track, FSK sync) [inherent sync]**
2. **Special Venue DCP - Standard CPL extensions (additional playback devices - not "standard" i.e. Dolby Vision, generic aux, DTS-X, uses MXF) [inherent sync]**
3. Non-Standard Special Venue DCP - non-standard CPL extensions (Atmos, Barco Escape, Cinema Giant Screen) [inherent sync]
4. PKL content delivery - Not CPL referenced BUT referenced by packing list. [externally defined sync]
5. Out of Band Content Delivery - "sidecar" - not CPL referenced, non SMPTE formatted content, no packing list referenced (MyLingo, Some motion seats, ScreenX) [externally defined sync]

Sync of external devices for playback

A. 430/10 ethernet sync
B. AES / FSK sync 430-12 - SMPTE sync signal
C. **AES / Binary Sync 430-14 - SMPTE sync signal**
D. Uses sync signal from server (LTC)
E. Audio fingerprinting sync

In Theater Communication:

i. IR link
ii. WiFi
iii. RF (FM, 802.15.4, etc.)
iv. None (no communication between playback and consumer device)

Problem to solve: Simultaneous (multi-language) spoken language playback

Master/Slave in-booth multiple CPL playback multiple boxes in the booth (that would evolve to single)

Playback multiple languages simultaneously to personal devices.

Desired approach: Use delivery flavor 2. (aux data with audio tracks in MXF) with Type C. AES/Binary sync

Harold Hallikainen wrote up a detailed analysis of these approaches - see below.

We discussed the importance of forensic marking of these tracks. Yes, they should be forensically marked.

We are not clear on the next steps for this discussion / almost recommendation. Bottom line: this language can be used by studios in the future for discussion with external parties. We will revisit next meeting to see if there is a place for this in our technical documents.

Harold's submission:

Alternate language delivery
The goal is to deliver a soundtrack (music, effects, dialog) with the dialog in a different language than the sound track delivered to auditorium speakers. The alternate language soundtrack is to be delivered to the patron using headphones. For best performance, stereo is suggested. Delivery to the headphones could by wired (though largely impractical), IR, or RF (including Wi-Fi or other RF technologies such as FM over RF).

Packaging for distribution
The simplest method to add stereo soundtracks would be to use additional channels in mainsound. The additional soundtrack would be output by a media block the same as the auditorium sound. No changes are required to media blocks in the field. The alternate soundtrack(s) can be encrypted and will be decrypted and forensically marked by the media block for delivery to external equipment for transmission to the headphones.

The second method of packaging alternate soundtracks would be to package them as AuxData. This would allow an unlimited number of alternate language soundtracks. There would be multiple CPLs that each reference a set of additional soundtracks. In the theater, the AuxData track could be converted to streaming audio by the IMB or an OMB. If the AuxData track is encrypted, the IMB or OMB would to be decrypted by the IMB or OMB and forensically marked. It would probably be possible for existing IMB hardware to decrypt additional audio (AuxData). Many IMBs use a dedicated DSP for forensically marking, and that DSP is generally limited to marking 16 channels. Forensically marking more channels either requires more DSPs or a more powerful processor and appropriate code. IMBs also have a limited number of AES/EBU outputs, so getting the additional channels "out of the box" can be an issue. If the IMB can stream the additional channels to Ethernet or possibly direct to RF (such as through a USB Wi Fi transmitter), getting audio out of the box becomes possible.

Use of an OMB communicating with the SMS using SMPTE 430-14 for content transfer and sync is another way of handling the AuxData. A limited number of systems currently support SMPTE 430-14. Further, because of security requirements, an OMB can be expensive.

We can deliver alternate language stereo soundtracks today by using additional channels of mainsound. Mainsound is currently used for 7.1 audio plus HI/VI (total of 10 channels). In addition, another couple channels are sometimes used for sync (binary or FSK) and motion data. That leaves four channels available which could handle two

alternate stereo soundtracks. Three languages (auditorium speakers plus two delivered by headphones) MAY be adequate for the majority of applications.

The ultimate solution would be AuxData, but there are costs involved and may require hardware replacement in the field (in addition, a method of transmitting the audio to the headphones is required, and this may require additional or replacement hardware).

Putting the additional soundtracks in mainsound COULD be a temporary solution though temporary solutions tend to become permanent.

Separate Delivery
Another approach (MyLingo, etc.) is to deliver the content separately and sync it to the DCP as it plays. This is currently done through audio fingerprinting. The soundtrack has to be provided to the alternate soundtrack creator so they can generate the fingerprint for sync and for them to get the music and effects to include in their alternate language soundtrack. There are concerns with security of the audiotrack.

Sign Language
Somewhat related is the packaging and transmission of sign language. Some current systems do "on the fly" translation of the closed caption text to sign language performed by an avatar. The closed caption text is fetched from the SMS based on SMPTE 430-10. Machine translation is less accurate than that performed by a human signer, so there is a desire to deliver video of a human signer. A proposal for a temporary solution (which has the danger of becoming permanent) is delivery of compressed video in a track of mainsound. It would leave the IMB over AES/EBU to drive an external transmitter. An IMB COULD stream the video over Ethernet or directly drive an RF transmitter (for example, a USB WiFi transmitter).

A more standard method of packaging the video would be as AuxData. An IMB could decrypt the video and deliver it over Ethernet or through a USB RF transmitter. The AuxData can also be delivered to an OMB using SMPTE 430-14, but costs of the OMB may be significant due to security requirements.

Harold

Review Technical Documents on ISDCF website

Doc 3 - Delivery Recommendations - removed parts that have been standardized in SMPTE 429-9. Addition of formatting hard drives. Formatting update/clean up. Clearly identify differences between SMPTE and Interop packages.

This document does not cover DCP-specific recommendations - such as matching text in the CPL/Assets. Annotation text recommendation- as an example. Best practices are thought to be

important, but not appropriate for this document. Is there a need for a new document? Probably, but we need a champion for the creation of this document.

Doc 5 - Guidelines for KDM and Certs - Update for special auditorium KDM use ("DCI any" in particular). Call out on Selective Forensic marking.

Doc 12 - Ingest Behavior RP - Ingest behavior and transfer behavior - Next time…

Doc 4 - Audio Channel Recommendations - Assign audio channel 15 for sign language video. This means that channel 16 will be part of a digital pair. We anticipate that details of encapsulated video will be published at some time in the future.
There is a need to define CPL metadata and symbol for this added track. Just defining in this document is not sufficient. The main reason for adding to the document at this time is to lay claim to track 15.

PLUGFEST PLANNING

Is it time to have a plugfest on immersive object based sound? First test to be a functional test, the second test for a "killer reel" and the third test for critical listening?

Bottom line: the industry is not ready for a plugfest in the October time frame. SMPTE 25css has taken the offer back to the working group and will let us know when it's time.

JDCF

Report given on the cinema industry in Japan. The presentation is posted to http://isdcf.com/meeting (it will be moved to http://isdcf.com/files/20170629meeting in the future.)

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Making a DCP instructions…

Interesting article. Interesting thoughts on some aspects. Not 100% accurate but more so than many others I've seen.

http://jonnyelwyn.co.uk/film-and-video-editing/how-to-make-a-dcp-for-film-festival-projection/

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ISDCF Discussion List topic: The 7 hour DCP.

The 7-hour "movie." This is not typical and there is no specified limit to the length of a movie. But it does cause discussion and evaluation of how we have self-imposed restrictions so movies will play without problems. The real limit may be due to caption size limitation for each reel. One studio has arbitrarily breaks movies into about 20 minute reels - it helps being assured it will play and ease of updating if needed. In fact, long play audio (one continuous audio for the entire feature) has been a frustration since an update requires a full re-encode of the entire feature.

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ISDCF Discussion List topic: 1998x858 resolution

"AdScope" with 1998x858 resolution. We don't think it looks good, but no comment from ISDCF.

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Global Cinema Federation - (no logo yet.)

Announcement at CinEurope the formation of new group. 11 exhibitors and 2 industry groups (NATO and UNIC). The press release has been posted to the meeting folder. http://isdcf.com/meeting (it will be moved to http://isdcf.com/files/20170629meeting in the future.)

The worldwide nature of cinema has motivated the need for a global organization to address many issues.

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HDR/LED Walls

No update on the HDR recommendations. There is a clear need for an understanding of how to drive LED Walls.

There was a question about sound for LED walls, but no clear answers.

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Updates

SMPTE held working day. 5 year review completed
FIPS study group underway

No other reports. (EDCF, Vendors)
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Attendance on next page.