ISDCF Main Meeting Notes – November 8, 2023
In person at Universal / Zoom

<u>Upcoming Meetings</u>

Thursday January 11, 2024 at Harman
Wednesday February 28, 2024

Thank you to companies that sponsored ISDCF for 2023.

2023 ISDCF Sponsoring Companies

2023 Sponsoring Companies: AMC, The Cinema Foundation, Christie, Cinionic/Barco, Deluxe, Dolby, EIKON, GDC Technologies, Harkins Theatres, Marcus Theatres, NATO, Paramount, Pixelogic, Qube, Samsung/Harman, Sharp/NEC, Sony Pictures, Texas Instruments, Universal Pictures, Village Cinemas Australia, Walt Disney Pictures, Warner Bros., Xperi/DTS

Part 1: General Reporting

Housekeeping:
- Zoom meeting (provided by ISDCF)
- Set next meeting dates (above).
- Thank you ISDCF for support of the Chairman.
- Thank you to Dean Bullock for providing general expenses and admin support.
- Meeting notes from September '2023 approved and to post to open website
- Legal reminder / press reminder / 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. Please no-social-media for discussions held at ISDCF.

InterSociety: Board Jerry Pierce (Chair), Steve LLamb, Susie Beiersdorf, Dean Bullock (secretary/treasurer), Mark Collins, Don Tannenbaum. Are you interested in helping guide the organization? Contact us!

Attendance is at end of these notes.

Action Items from November 8, 2023

1. Jerry to Doodle to find a time for Intersociety meeting (zoom only) early January
2. Please send candidates for Board Members to Jerry.
3. Expect invoices to be issued starting in December for 2024 (due first part of 2024)
4. A note should be given to exhibition to help them understand the playback issues and how to report to studios/mastering/equipment manufacturers when playback problems are found.
5. Begin a document for "Mastering Best Practices"
6. Create a "power point" for the screens to be created for the audio test content
7. Call another meeting of the security subcommittee
8. Chair to call a meeting of the metadata subcommittee to discuss the goals of the group.
9. Chair to contact ICTA to discuss future of terminology registry

===

Future of ISDCF - Financial Report

We have about $23K on hand. We should be good for 2023. Invoices for 2024 will begin being issued in December 2023.

A question on the continuation of the members rate of $4,000/year given the excess at year end. The chair thought that adjustments to the rate would be discussed at the end of next year (2024). The general concept is to have a reserve fund , but this has not been officially determined by the Board. This will be an active discussion and will be part of a broader discussion at the InterSociety meeting to be held early 2024. We anticipate modifying the member rate to meet ISDCF needs - no more, no less.

InterSociety Future (apologize for going down this rabbit hole…)

Intersociety was formed in 1978 in support of the film industry. It was a way of connecting the various associations and organizations and coordinate common issues. This included the ICTA, MPA, NATO and SMPTE. Over the years Intersociety was able to help this coordination and had a number of important projects. (One of which was to form ISDCF.) But over the last 10-15 years the needs have changed and the founding organizations are no longer actively participating at the same level and coordination is no longer a active mission of Intersociety.

So the Intersociety Board has undertaken a review of the Intersociety and ISDCF to determine the best path forward. Bottom line: Keep the legal structure of Intersociety (A 501(c)3 non-profit) but modify the Bylaws to reflect the new reality. Keep Intersociety as an organization that sponsors ISDCF and leaves room for other subcommittees that could be supported by Intersociety.

With that, the Intersociety Board shared the suggested changes to the bylaws and mission statements. The Intersociety Mission Statement seems to accurately reflect it's activities and goals. A new updated ISDCF Mission statement was proposed:

InterSociety Mission Statement

The Inter-Society for the Enhancement of Cinema Presentation, Inc. promotes interactive dialogue and information exchange between cinema-related entities with the goal of resolving issues affecting the overall cinema presentation.

ISDCF Mission Statement:

Proposed: **ISDCF promotes interactive dialogue, information exchange, and practical solutions for the manufacture, distribution, and exhibition of content in the Digital Cinema ecosystem.**

A document of the suggested changes to the Bylaws was shared (and is attached) and in discussion it was suggested to add Diversity/Inclusion as part of the new Bylaws.

Question: can a non-corporate member be a member of the board? The group discussion felt that any member (Corporate, Individual or Honorary) could be members of the board.

Question: if a past president is from the same company as another board member that should be allowed (the current language says no two from same company). We should modify to allow two from same company if approved by the corporate members.

Nominations for Board positions are open NOW and elections will be made first meeting of 2024.

We are not sure if we have a copy of the articles of incorporation for Intersociety. It is possible that Nebraska has a copy since that was where Intersociety was first formed.

Real Work
===
JPEG2000 decoder problem

Mission Impossible - An issue having problem with playback. Investigation has been on-going and we have a report of the current understanding of the problem(s).

Report given (slides attached). Overview: it's still a work in progress. We are not 100% sure of the details, but it's important that we share and discuss.

We *think* there are just three issues (there may be more):

1. '0xffff' Issue
2. 'Unbalanced Image' Issue– Under Investigation
3. 'GreenFlash' Issue– Under Investigation

The JPEG 2000 bitstreams are valid, they have playback problems on certain equipment.

The industry has known about issues and has "dodged the bullet" by re-encoding until it is magically fixed. The actual problem had not been identified.

Issue 1 was exhibited on certain systems. These system comprise about 20% of the digital cinema market. These systems are listed at end of service/end of life by the manufacturer. There is no hardware fix available. The code 0xffff appears at a particular place within the bitstream and it triggers the problem. (Details are known: **https://github.com/SMPTE/rdd52/files/13072829/cat862-j2k-constraint_v8.pdf**)

We now have a restriction document for new content to avoid this issue. Old content can be validated to determine if they have this condition that causes a playback issue (it is NOT a JPEG2000 error). An open source tool to test is available at **https://github.com/sandflow/note-1-validator** .

We should be concerned: of material created by a number of facilities, the error rate was 7.5% of 4K material. This means that MANY pieces of content will have an error. (The attached document shows the types of errors: Green/Purple 'tearing' and 'halo' effect appears during playback.)

New content must be constrained to avoid this known problem. This is the only solution possible. It should be incorporated into SMPTE's RDD52 - the existing constraint document for digital cinema content. See **https://github.com/SMPTE/rdd52/issues/8** for more information

The other two issues are under investigation. They were described and the attached powerpoint goes into a little more detail of what is known. It is not related to the first issue.

The group that has been studying these very hard to find problems continues to try to find ways to gather instances of playback issues and openly communicate what is known and what is not known. They are trying to categorize these problems. The goal is to get root cause of issues. It is NOT easy.

The Q&A from the presentation is repeated below:

Which encoders do these issues originate?
• To date, all the most commonly used DC encoding systems have generated content that has exhibited at least one of these three issues.

Can I determine which DCDM content will potentially have this issue(s) before encoding?
No, each issue can or may be highly content and situational dependent. Each encoding system may approach various content in different ways, it's possible to encode on two different systems and have different results.

What's the "fix"?
• The content will need to validated and/or re-encoded to constrain the J2C bitstream.
• It's possible that updates to hardware/software could eliminate one or more issues (0xffff issue not applicable).

So, this is a content issue?
• No, this is strictly a playback issue on legacy servers that are supported by old decoder chips that are no longer in production. There is little to no support to update these systems (both the chips and servers), so constraints must be created on content to accommodate. We have had to do similar things in the past for other equipment issues, such as done with SMPTE RDD52. To reiterate, the JPEG bitstreams have passed all the usual validation on standards as they currently are published.

Why is this happening now?
• That is a subject for conjecture and will likely never be known 100% for certain in all cases and may be a combination of multiple various environmental factors.

What's next for the remaining known issue(s)?
• Work is ongoing to create other possible constraints and validation tools to help the industry resolve the legacy playback issues specific to this equipment. In addition to being variable based on the encoding equipment and the multiple software versions used, this makes interoperability and root cause analysis extremely challenging, given the playback equipment is deemed obsolete and marked end of life by the manufacturer(s).

The group is trying to communicate and gather information. Studios and exhibition needs to be aware of the issues.

Q: How does an exhibitor report an issue?
A: If a problem is detected, please report to the studio. They would bring in the appropriate mastering/equipment manufacturers as needed.

Q: Can we provide an contact list to report issues?

After discussion we didn't find a common way to communicate (no email expander list, for instance). Please submit support request - including screen shots, audio samples, etc. It's important to have the UUID of the content and/or the KDM since it comes down to specific frames of content.

It will be important to inform exhibitors to know what is going on and how to report back to this group that is studying the playback problems. Informing all members of the ecosystem HOW to best report problems/would be of great benefit to the industry. Clearly identifying problems / equipment used makes it so much better to chasing down issues.

One reported that the Integrators would be first to call for their region of a problem. Each group may have a different "first person to call" when a problem occurs. Internationally we should inform the integrators about the problems seen so far so they can report other instances.

Do we need an on-line form to receive these reports? The study group is going to take this off-line to see if there is a way. Google Docs may be a problem internationally. ISDCF should not create an international support system.

The system is not broken now - we need to encourage more reports. We should have a "what to do if you see something like this" description that can be sent to a wide set of exhibition / projection booths. More to come in January.

Hat's off to the team that found the root cause of the 0xffff error. It required a significant amount of time/work to find it.

Note that new validation is being preformed - if you are a studio and get a report that content does not pass validation - Please DON'T release content that fails validation!

===

End of Life Recognition

One region is reporting an increased awareness that digital cinema hardware that is 10+ years old will need to be replaced/upgraded. Especially hardware that is listed by their manufacturer as End of Life. It's a shock and a distress for some exhibitors. (And something ISDCF has been discussing for a while!).

===

Intermission

One movie has been recently released that is over 3 hours long and some territories have asked for a break point to have an intermission. The filmmaker did not approve a break. But some exhibitors/attendees request this. We suggest that for long movies we include an intermission marker so an exhibitor can identify a place to take the intermission that is least disruptive to the story. (SMPTE-DCP only)

===

Long-play SOURCE, branched into reels for DCP release (Taylor Swift Eros)

There were problems in transfer and playback of this movie that was a long play title. A reminder to authoring houses - long-play can be problematic. It can have problems with captions and can cause issues for transfers of the large files. While not directly related, it is recommended that movies should be mastered in reels to assist in the design of DCP products. Should we create a "Mastering Best Practices" in encouraging 12 minute reels and discouraging long play to limit the size of all the elements. Create a Google Doc to begin gathering ideas. (JHurst, SLLamb, MRadford all offered to contribute.)

===

Audio Test Material

The committee held a listening session for the initial test content that might be considered for test content to highlight audio issues, in particular for non-perf (LED) screens. We found content that was very revealing. We are aiming to create a 10-15 minute piece.

We think this content will be useful for all theaters, not just LED screens.

===

Metadata subcommittee report

Hard to get it started. We need to have a discussion to see what would be the goal of the meeting. Originally one goal was to make the Digital Cinema Naming Convention not useful - and not be needed. It appears that will not happen. Maybe we don't need this committee?

What is missing is the driving force for a purchaser to request use of specific metadata. Maybe we could take list of Metadata and "what would be better if we acted on this information." We NEED exhibitors as part of the discussion so they could drive a feature request.

The Chair will initiate a Doodle to call a meeting. One part of the meeting will be to discuss and see if we need to have this subcommittee.

===

Security subcommittee report

ISDCF has a security (FIPS) subcommittee to discuss issues with changing security requirements of digital cinema equipment.

We held another meeting. Still no one has done the homework. We are looking for the impact of moving from FIPS 140-2 to FIPS 140-3.

Spending discussion time for how to certify equipment beyond an existing NIST test lab.

If you want to join this discussion, please email jerry@jerrypierce.org and ask to join the security discussion.

===

Legacy Equipment

How do we notify exhibitors that at some point in time you will need to upgrade your equipment? Jerry put together a possible note to send to exhibitors, but the discussion that followed was concerned that there are too many political/legal landmines in creating such a document or in any of the other suggested ideas.

We want to encourage studios and manufacturers to continue to notify users of potential risks of not preparing for upgrading end of life equipment.

Today if a distributor determines that a particular system is not longer approved to play their content they will rely on the current TDL to identify those systems and not issue KDMs. Generally the distributor will try and contact those exhibitors that have those systems and inform them it will not play a particular movie. This will be a shock - both for the informing and the missing KDM when the time comes.

It is known that current "end of life" equipment is being sold, purchased by small exhibitors, and installed for movie showing. It is a fact of life in today's economy.

Bottom line: this is not an ISDCF issue. Most feel that it is a business issue that should be dealt with in a business setting.

===

Immersive Audio

We had a major release using the IAB naming (Taylor Swift Eros Tour). World Wide. No significant issues as a result. It might have needed better messaging that "if you want to play Atmos use the IAB track." Mostly an issue with Dolby equipment.

The IAB version was a VF (Version File). (So there was a fall back possible to the OV 7.1 version. We don't know if any actually did the fall back.)

===

DCI

DCI has released Version 1.2 of the DCI High Dynamic Range D-Cinema Addendum.

It includes a higher limit of 450Mbps for all content. It has been common for current systems (like Dolby Cinema). It was felt that new equipment would meet this requirement.

The DCI website has a "change log" on the website:

Changes to the HDR Addendum can be summarized as follows:
- Refactor specification by grouping requirements into color volume, DCDM, DCP and Reference Display sections
- Add specification for DCDM timed text
- Clarify ambient light level requirements
- Clarify distinction between nominal and quantized color values
- Clarify HDR DCDM permitted code values
- Clarify HDR reference display behavior when reproducing colors with luminance less than 0.005 cd/m2
- Loosen EOTF tolerances for projectors
- Specify maximum image compressed bit rate

===

Accessibility with smart phones

The CIT (Center for Innovation and Technology at the Cinema Foundation) is looking into this topic. CIT is meeting next week and it will be discussed. If you want to be involved, contact Bryan **bryanbraunlich@gmail.com** - the ED of the Cinema Foundation.

===

Projection Letter Proposal

CIT is moving forward with a service to provide exception letter distribution via an email blast service/Website. Contact Bryan if you are interested.

===

Naming Convention / IT issues for ISDCF

Nothing to report. Lots going on, but business as usual.

===

Terminology Registry

Initial terminology registry was started https://registry-page.isdcf.com/terms/
This joint ICTA/ISDCF project is stalled. Chair will contact ICTA to see what should be done.

===

DCP, Live & Event Content in the Booth

This will be dropped from ISDCF's agenda.

===

SMPTE update

SMPTE voting is active and working (for some). If you are a member of 27C and are not receiving ballot information, something is wrong. Contact Steve to figure it out and fix it.

A pre-announcement that SMPTE will offer open access to all standards for members. The SMPTE standards will be available in an easy to find on-line way. We saw a preview of the website!

SMPTE has moved away from IEEE web hosting and will be on the SMPTE.org site.

There is a new SMPTE document on subtitling: https://github.com/SMPTE/eg428-23 Mainly for Japanese subtitles

Best line: "Compared to the CTP, nothing is long."

===

The Cinema Foundation / CIT

New Volunteer Board Chair. CIT meeting next week.

===

EDCF

Next February convention in Amsterdam. They are planning CinemaCon trip and if anyone wants to host a visit, contact Steve LLamb.

===

Other

Light Steering projector installed at the Dunn Theater (Academy) and we might have a field trip in January.

Action Items from September 13, 2023

1. Security homework assignment: Create impact list that were necessitated by the change from FIPS 140-2 to 140-3 to product design. (Bullock to start)
2. Get the background documents that were considered when the CTP was updated. (Radford)
3. Metadata submission of what Deluxe uses on a daily basis (LLamb)
4. Write an open letter for exhibitors to be aware of possible EOCD (end of content delivery) in future. (Jerry/Lefko)
5. Studio to provide smart phone for accessibility details to ISDCF chairman

===

Attendance on last page.

InterSociety Mission Statement

The Inter-Society for the Enhancement of Cinema Presentation, Inc. promotes interactive dialogue and information exchange between cinema-related entities with the goal of resolving issues affecting the overall cinema presentation.

ISDCF Mission Statement:

Proposed:
ISDCF promotes interactive dialogue, information exchange, and practical solutions for the manufacture, distribution, and exhibition of content in the Digital Cinema ecosystem.

InterSociety Bylaw change Highlights:

- Elimination of the "Charter Member" class of members
- Voting for Board Members by Corporate Members only (and need 50% to be on board). One vote per corporate member. (Nominations by anybody)
    - Anyone can be on the board
    - Board can call for run-off elections as part of the election process.
    - No two board members may be from the same company, unless specifically approved by corporate members
- One Intersociety meeting per year (in January near ICTA) and all elections to be held at that time.
- An Executive Director can be appointed by the board. That person would be a voting member of the board, can be paid and in case of a board vote tie, their vote would be ignored.

Board Highlights

- Minimum 6 member of board, max 10 (including Executive Director) - 5-9 elected members
- Split board into 3 groups, alternating ending years.
- Terms are for 3 years - 3 per year open for voting

- No term limits
- Nomination of board members by membership (corporate and individuals)
- Election by corporate members only - one vote per company. Must receive over 50% of cast votes.
- Positions of President, VP, Secretary/Treasurer are selected by board members every year. No term limits, no mandatory rotation.
- Board of Directors and Members Intersociety meeting at least once a year (January)
- A Quorum for Intersociety is a majority of Corporate members
- InterSociety may form working group committees. These may be limited in duration or on-going. These working groups may form subcommittees as needed.
- Executive Director is a voting member of the InterSociety Board. If there is a tie, the Executive Directors vote is eliminated. Executive Director can not be an officer

- Diversity in Bylaws/in practice

	A	B	C	D	E	F	G	H	I	J	K
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Board Member	J Pierce	J Pierce	J Pierce	J Pierce	Open					
	Board Member	P Holliman	K Bakhru	S LLamb	S LLamb	S LLamb	S LLamb				
	Board Member	L Horner	L Horner	D Bullock	D Bullock	D Bullock	D Bullock				
	Board Member	M Collins	M Collins	M Collins	M Collins	M Collins					
	Board Member	S Beiersdorf	S Beiersdorf	S Beiersdorf	S Beiersdorf	S Beiersdorf					
	Board Member	D Tannenbaum	D Tannenbaum	D Tannenbaum	D Tannenbaum	D Tannenbaum					
	Board Member					Open					
	Board Member					Open					
	Board Member					Open					
	Executive Director	J Brenneman	E Von Hoetzend	E Von Hoetzendorff		J Pierce					

Classes of Members

Corporate Members - Pay membership fees (at the moment $4K/year for corporations above $5M in revenue/year)

  Delegated Representative from a Corporate Member- the one individual that can vote for that corporation (should this be two individuals?)

Individual Members - For individuals in small companies or independent that pay per person to attend meetings and participate in InterSociety activities (at the moment $100/year)

Honorary Members - For individuals that are invited to be part of InterSociety (free) no voting rights.
(Elimination of the class "Charter Members",)

Digital Cinema Legacy Equipment J2C Decoding Issues - Overview

6 November 2023

Introduction

- Multiple issues reported on recent releases affecting image playback on legacy equipment in the field, which have been 3 separate issues identified to date:

1. **'0xffff' Issue**

2. **'Unbalanced Image' Issue –** *Under Investigation*

3. **'Green Flash' Issue –** *Under Investigation*

NOTE:

- J2C streams and content are fully DCI compliant - issues due to decoding errors on legacy equipment

0xffff Issue

Visual Description (and examples)

- Green/Purple 'tearing' and 'halo' effect appears during playback

Other Q&A

Which encoders do these issues originate?

- To date, all the most commonly used DC encoding systems have generated content that has exhibited at least one of these three issues.

Can I determine which DCDM content will potentially have this issue(s) before encoding?

- No, each issue can or may be highly content and situational dependent. Each encoding system may approach various content in different ways, it's possible to encode on two different systems and have different results.

What's the "fix"?

- The content will need to validated and/or re-encoded to constrain the J2C bitstream.

- It's possible that updates to hardware/software could eliminate one or more issues (0xffff issue not applicable).

So, this _is_ a content issue?

- No, this is strictly a playback issue on legacy servers that are supported by old decoder chips that are no longer in production. There is little to no support to update these systems (both the chips and servers), so constraints must be created on content to accommodate. We have had to do similar things in the past for other

equipment issues, such as done with SMPTE RDD52. To reiterate, the JPEG bitstreams have _passed all the usual validation on standards as they currently are published_.

Why is this happening now?

- That is a subject for conjecture and will likely never be known 100% for certain in all cases and may be a combination of multiple various environmental factors.

What's next for the remaining known issue(s)?

- Work is ongoing to create other possible constraints and validation tools to help the industry resolve the legacy playback issues specific to this equipment. In addition to being variable based on the encoding equipment and the multiple software versions used, this makes interoperability and root cause analysis extremely challenging, given the playback equipment is deemed obsolete and marked end of life by the manufacturer(s).