ISDCF Main Meeting Notes – October 2, 2019

<u>Upcoming Meetings</u>

ISDCF November 20, 2019 - Potluck!
Immersive Audio Plugfest January 13/14, 2019 (Monday/Tuesday)
    Flower Street Deluxe
ISDCF January 15, 2020 Wednesday

Part 1: General Reporting

Housekeeping:
- Introductions around the room
- Set next meeting dates (above). Inter-Society pays for lunches.
- Thank you Universal for the facilities and parking.
- Thank you Universal for support of the Chairman.
- Thank you to Inter-Society for providing the funding for lunch, travel, general expenses and admin support.
- Thank you to Universal for the coffee and Susie for the treats
- Meeting notes from July '19 approved
- InterSociety requests you be a member! $500/company. You can join from the link on the front page of ISDCF dot com.
- 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. The information is on the front page of isdcf(dot)com. We have added the no-social-media request for discussions held at ISDCF.
    * 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.

Note: No drive on after noon day before ISDCF meeting. If you want to attend and have not added your name to the drive on, please CALL IN.

Attendance is at end of these notes.

Action Items from October 2, 2019

1. Please Join Inter-Society! http://isdcf.com/ISDCF/membership-status.html $500 per company per year, $100 individual membership.
2. Call meeting of AdHoc committee to discuss future of language and territory codes and work with HBO+ for long term solutions, Steve/Harold will call an ISDCF meeting to discuss.
3. NEW CONTENT for the immersive audio plugfest is DUE on November 15, 2019. Commitment to participation in January at same time…
4. Add screen gain, screen type, screen curvature to the images shown in DCPL reporting.

Delayed since the plugfest was delayed:
5. Post bitstreams for the immersive audio testing. Steve is planning another call to discuss.
6. Get content with full metadata to provide an opportunity to show TMS/Servers action with metadata. (Paramount/Deluxe?) Create test plan for demo…
7. Eikon to arrange for a demonstration of 3D content for variable Z playback. Prior to IBC?

8. Old - Request to see servers/TMS to use the SMPTE CPL metadata (i.e. extract FFMC flag). Call for participation in the Plugfest in November 2019
From Last Meetings (These items are on long-term hold until the next plugfest and/or standards have been finished.)
9. Make a test package with slightly different content in the CPL Content Title Text, PKL text, etc for testing at the next plugfest or to conduct a field test of systems to see where the user displayed content is from for different TMS/Servers.
10. Post new versions of the framing charts.
11. Get a new version of SMPTE-DCP B2.1 with fixed CPL.

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Naming Convention

Request to eliminate the word: "Promo" from the Content type field in the Naming Convention. Nope, strongly rejected. We need promo. If this is a problem in the metadata, then there may be something else is going on… we would need more information.

Note: we don't recommend using the naming convention for automation.

HBO started an internal document for language codes to solve issues for many aspects (packaging, labeling, streaming, UHD, etc.). Others recognized how useful this coding could be and MESA started to "formalize" it. Little did they know ISDCF had done a similar thing.

The ISDCF document needs to be updated - it's showing it's age. This may give us a chance to revisit our current use of language and region/territory codes to see how best to meet digital cinema needs - and perhaps work with HBO/MESA to collaborate. An issue is the difference between naming convention
and CPL metadata.

HBO was the inspiration for this "registry" but it is now a committee effort with many participants contributing and editing (although HBO is doing the entries). I'll use MESA LMT to indicate the committee that is working on the document.

Has there been a comparison made between ISDCF's codes and the MESA LMT codes? There is an Excel sheet that highlights the difference. Looking at the comparison that was assembled by Harold we noted that changes may be made, but we need to include obsolete codes.

Real need is to get the information in a registry for automation.

HBO agrees that the next step is a registry hosting of the information. The discussion suggested that an organization like SMPTE might have the appropriate location.

Deluxe said that about 700 codes are in active use today. The full list (of about 16K entries) is far too many for the MESA LMT list as well.

The goal is to have the naming convention to be the same as the codes used in the metadata.

We need a repository of the various standards.

Action Items:

1) ISDCF should review the "delta" between our language/territory codes and the codes in the HBO+ document to try and make suggestions for the "right" answer. ISDCF AdHoc committee may be needed to feed to HBO+ committee. (AdHoc: Lefko H, Chris W. **Steve LL**, Mathew, John H, Mike R, **Harold H**.)

2) Where should this work **finally** be done? SMPTE seems to be the intersection for all the interested parties.

Presentation posted to: .4 https://isdcf.com/MeetingNotes/MeetingAttachments20191002.pdf (not used during meeting, but contains lots of info.)

https://www.mesalliance.org/language-metadata-table

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ISDCF Immersive Audio

Chairman's comments. It seems like we are not ready for another plugfest in November. No new content has been delivered. No one is strongly pushing for testing new hardware - in fact it is not clear that new hardware will be ready by November. We have had limited response for any restrictions. We don't have a new restricted set of content. As chairman - doesn't seem to be time.

One hardware company is implemented all aspect of the SMPTE standard so does not plan to have a restriction document.

One studio encouraged a plugfest in November since plugfests seem to encourage the move to a standard.

It seems that a November would not be any different than the plugfest that was conducted last time.

Plugfest - January 13/14 2020 at Deluxe Flower Site (then move ISDCF main meeting to January 15)

November 20 - CONTENT DECISIONS (no/no-go decision)

We expect to have the same immersive audio "killer reel" that was used last time (Mike Radford content)
Desire for restricted content using current Dolby Restrictions.

We need to have content available that will be tested. We need these to be accessible on some common location.

We expect:
1) the SAME test content from last plugfest (MRadford)
2) A constrained test content that only uses the features that current Dolby systems are known to playback
3) Other test content that other authoring systems have created

Other things for the plugfest…

Metadata display from CPL / Automation -
    Marker testing
    MCA sub-descriptors - Sound format selection (5.1/7.1)
    Show and Tell of what's there

    We need content that has all these fields filled in (i.e. short movies with full metadata) Paramount offered a title - assuming little or no playback.

Variable Z subtitles - may be part of the plugfest in January

Follow up on features of the SMPTE stream. Paramount is preparing test content to demonstrate what happens on various 3D systems. Eikon is doing the prep and can arrange for a pre-show in the next month or so for demonstration.
To demonstrate:
1. True (burned in) variable Z subtitles
2. Z subtitles that meet the minimum requirement of SMPTE spec (positioned at fixed Z position as indicated in the file)
3. Variable Z as rendered by the server

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EDCF Updates?

Annual meeting in Vienna November 27/28, 2019

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HTJ2K update

Presentation given by Michael Smith. (Posted to https://isdcf.com/MeetingNotes/MeetingAttachments20191002.pdf.)

The old JPEG2000 has a slow block coder. A change is to create a high speed coder (with same goal of royalty-free). Not expected to be backward compatible.

Easily to convert new to old/old to new without loss.

Demonstration made during meeting.

High-Throughput JPEG 2000 Decoding Demo Results

Results for 10-second clip of Meridian UHD SDR 10bit 24p

Test code stream	decoding speed (fps)	native (Mbs)	decoding (Mbs)	HTJ2K speedup factor	HTJ2K bitrate increase	Compression Ratio (X:1)
J2K - Lossy 400Mbs	24	394	393			15.2
HTJ2K - Lossy 400Mbs	111	414	1914	5x	5.2%	14.4
J2K - Lossy 800Mbs	11	785	366			7.6
HTJ2K - Lossy 800Mbs	91	824	3137	9x	4.9%	7.2
J2K – Lossless	2	3543	362			1.7
HTJ2K – Lossless	70	3726	10,932	30x	5.2%	1.6

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Archive of projects

IMF Archive - workshop October 25 in LALALand Deluxe
https://www.eventbrite.com/e/preserving-and-re-purposing-studio-productions-using-imf-registration-61699398562

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Digital Cinema Picture Levels

September 30/October 1 Testing held at two sites near Burbank to test procedures and get feedback.

To be clear, this is a NATO project supported by ISDCF.

	Theater 1	Theater 2	Theater 3	Theater 4	Theater 5	Theater 6	Theater 7	
Reference White (Center) (2D) fL	**19.2**	**17.4**	**13.8**	**12.3**	**10.7**	**7.7**	**7.9**	fL
Projector Black mNITS	53.0	25.0	14.0	30.0	8.7	26.0	7.0	mNits
Theater Black	0.56	8.30	2.20	3.50	0.25	2.57	0.13	mNits
Peak White (Left) fL	**5.3**	**14.7**	**3.2**	**4.3**	**4.9**	**3.3**	**4.9**	fL
Left Brightness (%)	27.4	84.7	23.4	34.7	45.6	42.6	62.1	Percent - higher is better - more uniform
Sequential Contrast	1,242	2,384	3,386	1,403	4,207	1,019	3,843	: 1
DCIC Contrast	771	997	1,353	816	973	591	1,412	: 1
ANSI contrast	(No time)	123	101	61	103.15	110.53	116.54	: 1
3D Peak White		8.90	4.06		5.11			Two screens did not have 3D, one screen did not ingest our 3D content and one screen we ran out of time.

Notes: it has been taking about 2 hours to test a screen. It takes almost an hour to load the content at each screen.

First test was at two high-end locations and we are looking at a number of high-end (PLF) screens, but the numbers may be misleading since we are not using content prepped for the screen. Only one screen was a traditional screen.

There were a variety of light sources for the screens, from xenon to RGB laser to laser phosphor. We only tested one-projector if there were two projectors in the room.

There was a discussion of the use of the term "Peak White" and as tested it should be called "Reference White." We were playing a file that was "DCI" white and code value "0" for the black. While we did (once) try to measure "projector white" (using the internal test pattern from the projector to measure the white), we decided that was not easy for measurements in non-expert locations. (And was generally hard to do and we didn't think it was as valuable.)

We included the "theater black" level (in milli-nits) and this was considered very important to the theatrical experience since many folks think "it's all about the black!" It was interesting that the very high end theater measured in August (3mNits) was about the average for these theaters and the one standard theater was in the mid range as well.

The theater black was measured at normal (legal) theater light levels for these working theaters. (To be clear, with isle lights on to meet code for safe exiting.) We also measured the light on the screen when the light level was set to "trailer playback," and these were recorded, but are not on this chart.
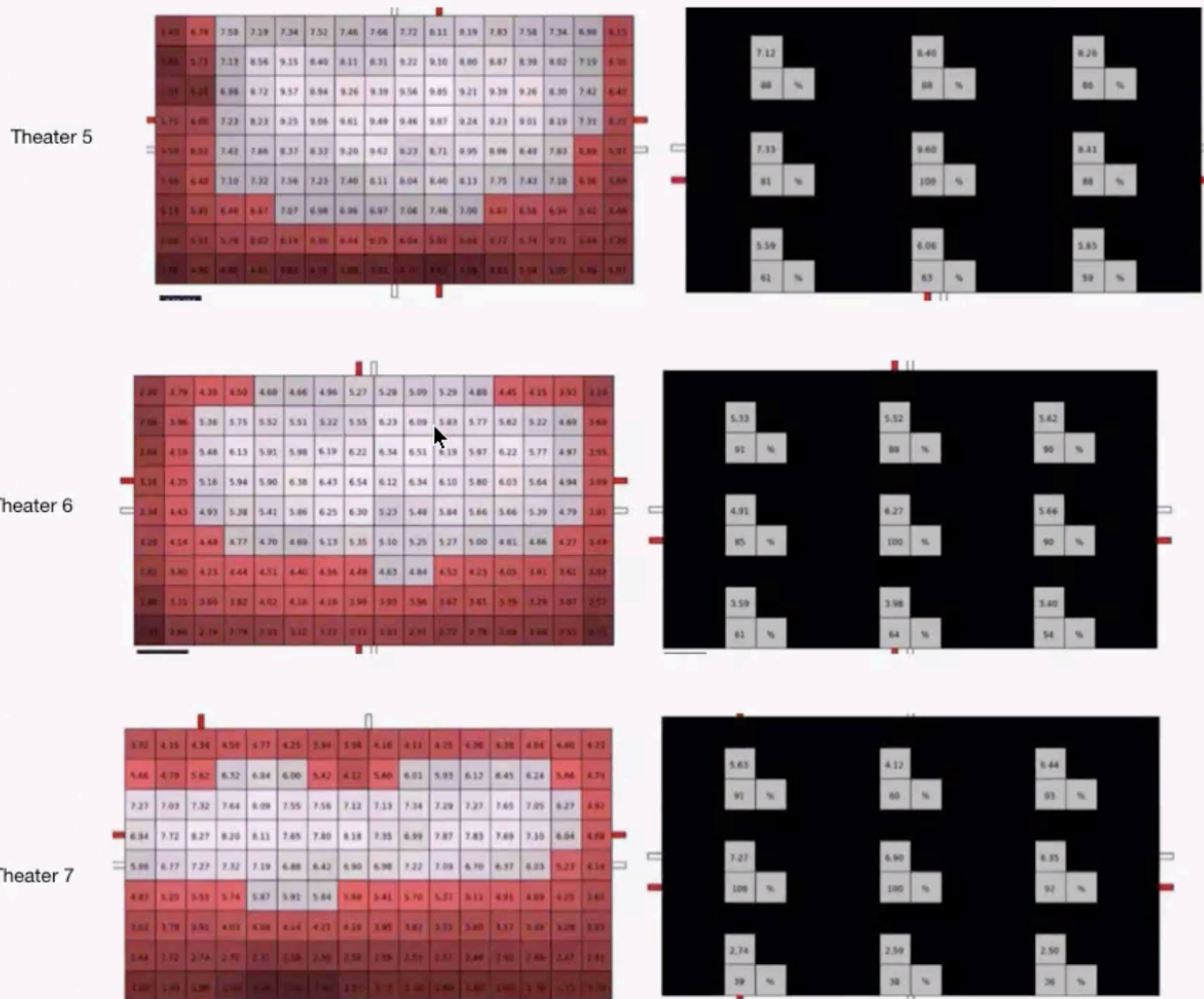
For some of the very low theater black levels we could see the left/right sides had more light than the center screen (where we were measuring) due to the side isle lights spilling onto the screen. Well, not a lot of light, but some.

We looked at the light on the far left of the screen using the SMPTE-ish 9 dice pattern. It was as low as 30% of the light level at the center of the screen. The SMPTE screen standard is much higher than that and in no case less than 10fL.

We showed images of the screen showing the full white and the 9 dice patterns (images above).

Do we record the screen type? Yes, in the details of the reporting. We will try to update the images to include screen types to the images posted.

ANSI contrast didn't tell us much. Why was the ANSI contrast so low? Due to 50% average picture level and the contribution from the audience reflection.

The DCIC Contrast seems to have some meaning, but we don't know if this correlates to the images we see. We did some image estimation, but it was not consistent and we started evaluation too late.

The sequential contrast ratio was also very interesting and in the measured theaters it seems to be higher than we would expect in regular theaters.

We also discussed the issue of why the peaks are listed in "FootLamberts" and the blacks are in "mNits". NATO would like to maintain the peaks in the old favorite measurement, but the blacks are better in Nits. (Think miles and meters.) There is some desire to not use consumer TV ways of measuring theatrical screens.

The chairman added a guess of what we might expect for a "standard" theater. He wanted to identify what is a screen that mastering houses would use as a target for a "standard" current generation theater. The current "standard" is a sequential contrast ratio of 2K:1, but without other real-world measurements.

The fall off was picked as 67%, but Ben indicated that SMPTE spec is 75-90% (or a minimum of 10 fL).

One person attending the tests indicated that theater 2 left side looked to him brighter than the center (the recording said 84%). He didn't know if it was because it was brighter or that we are used to a fall off.

Most of the screens are less than 5 years old - some are very new.

The theaters chosen in this first round of testing was thought to be better than normal theaters.

Next step will include something that might be used for subjective testing. Currently our thoughts are going to use still frames that can be shown. These can be obtained free of license and might provide a chance to "linger" on known frames for testing and subjective evaluation.

We will start with Jerry and Steve's pictures and replace these photos with those provided by cinematographers. If we can to use better pictures and to encourage cinematographer participation.

The first rounds of projectors are helping us to understand some new questions.

1) If you take a current theater and replace the projector with a new one, will the image be better? By how much? Will patrons care? Do the current projector specs tell the full story?
2) If you build a new theater, what are important aspects? How do you specify the room/ projector to have a better performance?

Lunch Break

Pete Lude Imaging Photometer presentation… (Posted to https://isdcf.com/MeetingNotes/MeetingAttachments20191002.pdf)

During the DCPL testing, they took the opportunity to test a batch of photometers.

They were testing Westboro Photonics P280 SU and Westboro Photonics WP 6120 E in addition to the spot sensors that were also in use.

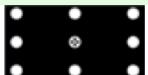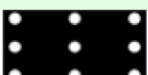The problem with spot meters is because of what's going on in the full screen:

Imaging Colorimeter results

7.5 mn
3.2 mn
19.0 mn
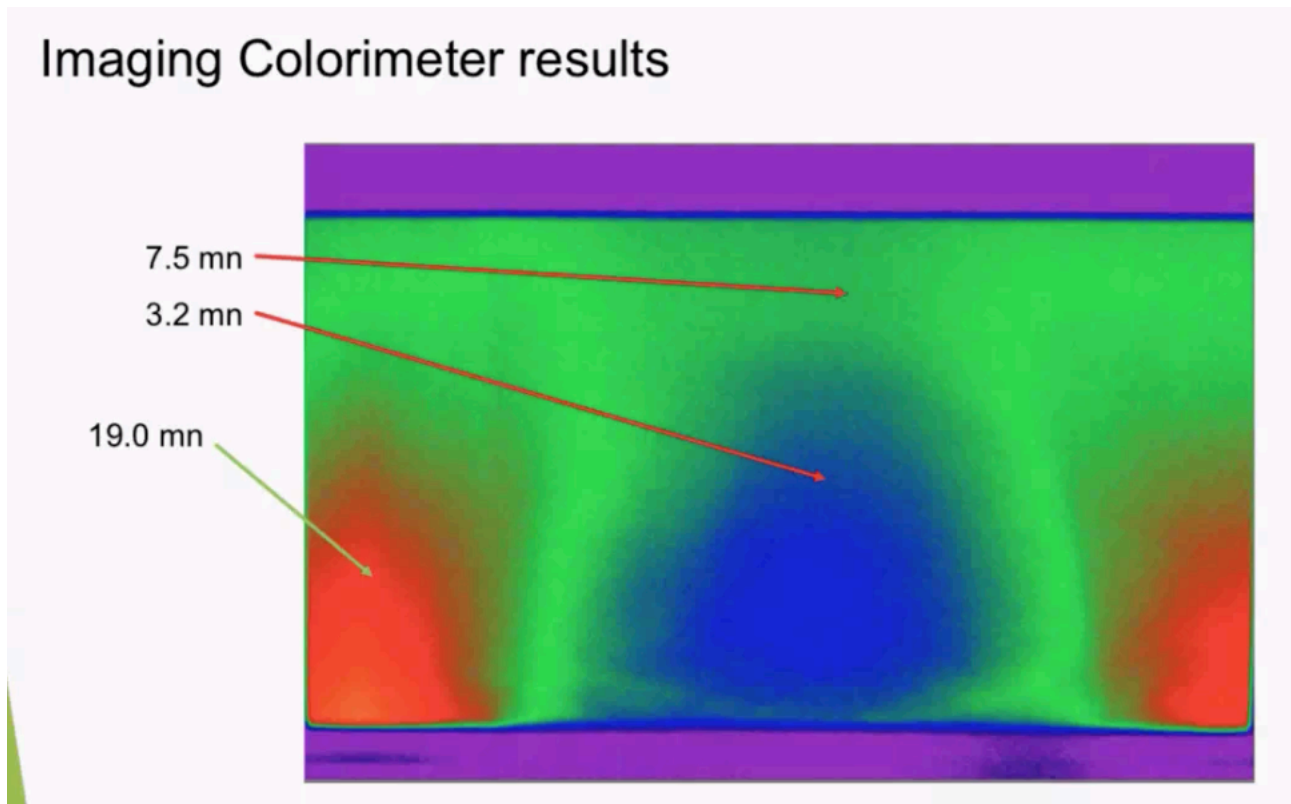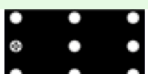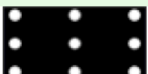
And what's going on in one example of the DCIC image:

Imaging Colorimeter results

R
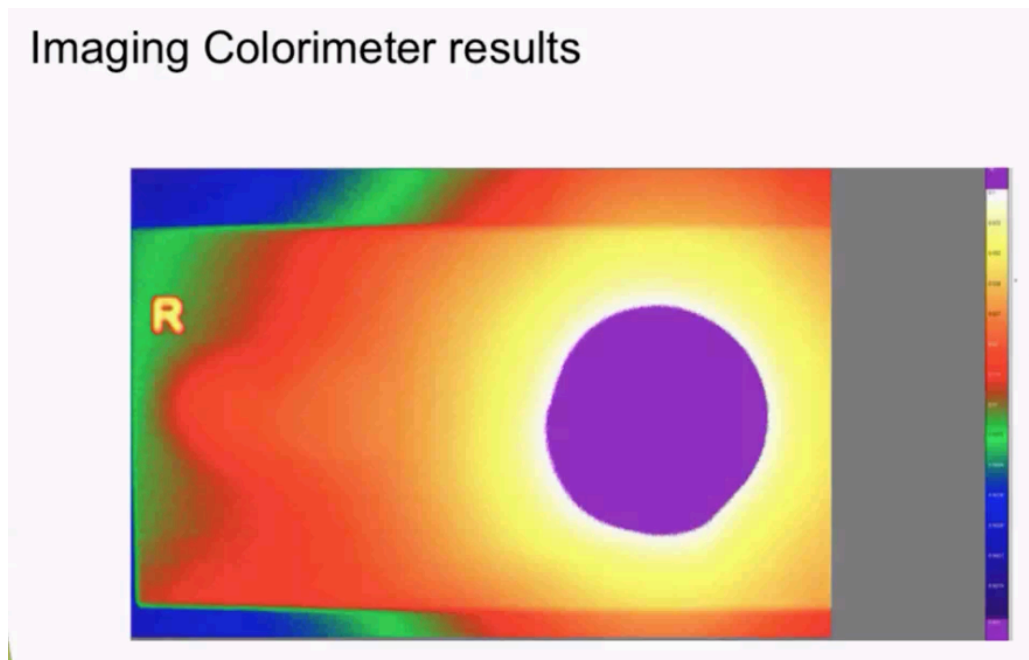
Where is the best place in the theater to put the detector? A matter of discussion, but probably the center of the audience. (We think 1.5 screen heights may be best given spot sizes of spot meters.)

Why are there differences between measurements in the theater during the testing? Lots of possible reasons… A short discussion of possible reasons - from the spot meters are looking at slightly different locations or angle or …?

A real benefit to this first round of testing was for the sensor companies to compare many sensors over a wide variety of screens.

1	**Center Measurements**							
check	NATest9DiceTar_TST-1_C_51_2K_20190916_SMPTE_OV							
2								
3	NATest_ISDCF_FrameChart		ISDCF framing chart	47.5	48.1	48.0	54.4	Not as enhanced
check	NATest9Dice_TST-1_C_51_2K_20190916_SMPTE_OV			47.4	47.8	47.4	55.5	
4								
check	NATestWhite_TST-1_C_51_2K_20190916_SMPTE_OV		Full White	48.3	48.5	48.7	57.7	
	Interal Projector white							
check	NATestBlack_TST-1_C_51_2K_20190916_SMPTE_OV			0.014	0.018		0.017	
		Douse Projector Black - Theater Black		0.0022	0.0052		0.0022	
		Douse projector - Trailer level black		0.055	0.055		0.061	
6	**LEFT SIDE DETECTOR**							
check	NATest9Dice-TargLeftC_TST-1_C_51_2K_20190916_SMPTE_OV		9 dice with left-center target					
7			9 dice normal					
check	NATest9Dice_TST-1_C_51_2K_20190916_SMPTE_OV			11.1	15.6	9.5	20.1	all on center location
				35.8 left dot aim	22.0 aim center dot			CR120 moved to left side
8			Full White					
check	NATestWhite_TST-1_C_51_2K_20190916_SMPTE_OV			13	16.2	10.0	20.6	
9								

An interesting note: at one laser phosphor screen the image was SO sharp that the moire pattern with the sound holes caused image distortion on the faces in the ISDCF framing chart.

Another interesting note - one meter seemed to give a different reading when reading left side on screens that had RGB laser, but not on other light sources.

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SMPTE-DCP Updates

Jack Watts provided this update:

- Usual software updates not being performed in existing territories resulting in requests for IOP back-ups. There are some crucial s/w updates for specific brands that <u>need</u> to be installed for the sake of your release. Device vendors, integrator & exhibitor comms need to be improved.
- Where both IOP and SMPTE Compositions have been supplied to SMPTE ready territories, KDMs are being requested for IOP versions over SMPTE. Should not be the case. Further comms required.
- Challenges with testing in Eastern European territories such as the Balkans and some existing countries. In order to mitigate against this going forward and to prevent the SMPTE Transition from dragging over multiple years, last week I made a proposal to UK based Studio reps to migrate to SMPTE-A for all current purposes where they would normally use INTEROP. Proposal available upon request where a Studio' UK counterpart has yet to share it or to interested parties. We aim to discuss at the next meeting.
- smptedcp.com annual metrics also available upon request, as per IBC presentation.

Maybe it's time to move to SMPTE-A for most distributions (without encrypted subtitles). This is being considered by EDCF.

Perhaps it's time to move trailer distribution in SMPTE-DCP type A.

https://www.smptedcp.com/status

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21DC Document Maintenance

New group formed, much like that being held in 35PM. If you are interested, please join the group.

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Update to SMPTE standards - B2.1 documentation - RDD underway

The language has been circulated to a small group of proponents. Lots of good feedback!

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High Frame Rate Releases

Gemini Man is on the way… Being released in 3D60 and 2D24 (except for a few premier versions at 3D120).

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Review of Action Items from last meeting.

Action Items from July 31, 2019

1. Please Join Inter-Society! http://isdcf.com/ISDCF/membership-status.html $500 per company per year, $100 individual membership.
2. Post bitstreams for the immersive audio testing. Steve is planning another call to discuss. Nope, but things are delayed…
3. Get content with full metadata to provide an opportunity to show TMS/Servers action with metadata. (Paramount/Deluxe?) Create test plan for demo… Nope, but things are delayed…
4. Eikon to arrange for a demonstration of 3D content for variable Z playback. Prior to IBC? Month of August? August 29? Nope, but things are delayed…
5. Compare ISDCF's language codes to the MESA/HBO document codes. Distribute the link to the MESA document. Done.
6. Studios are encouraged to internally find who is supporting the MESA work internally. CJ will reach out to Craig at MovieLabs to coordinate. Done.
7. Create DCPL discussion list. Done

8. Old - Request to see servers/TMS to use the SMPTE CPL metadata (i.e. extract FFMC flag). Call for participation in the Plugfest in November 2019
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