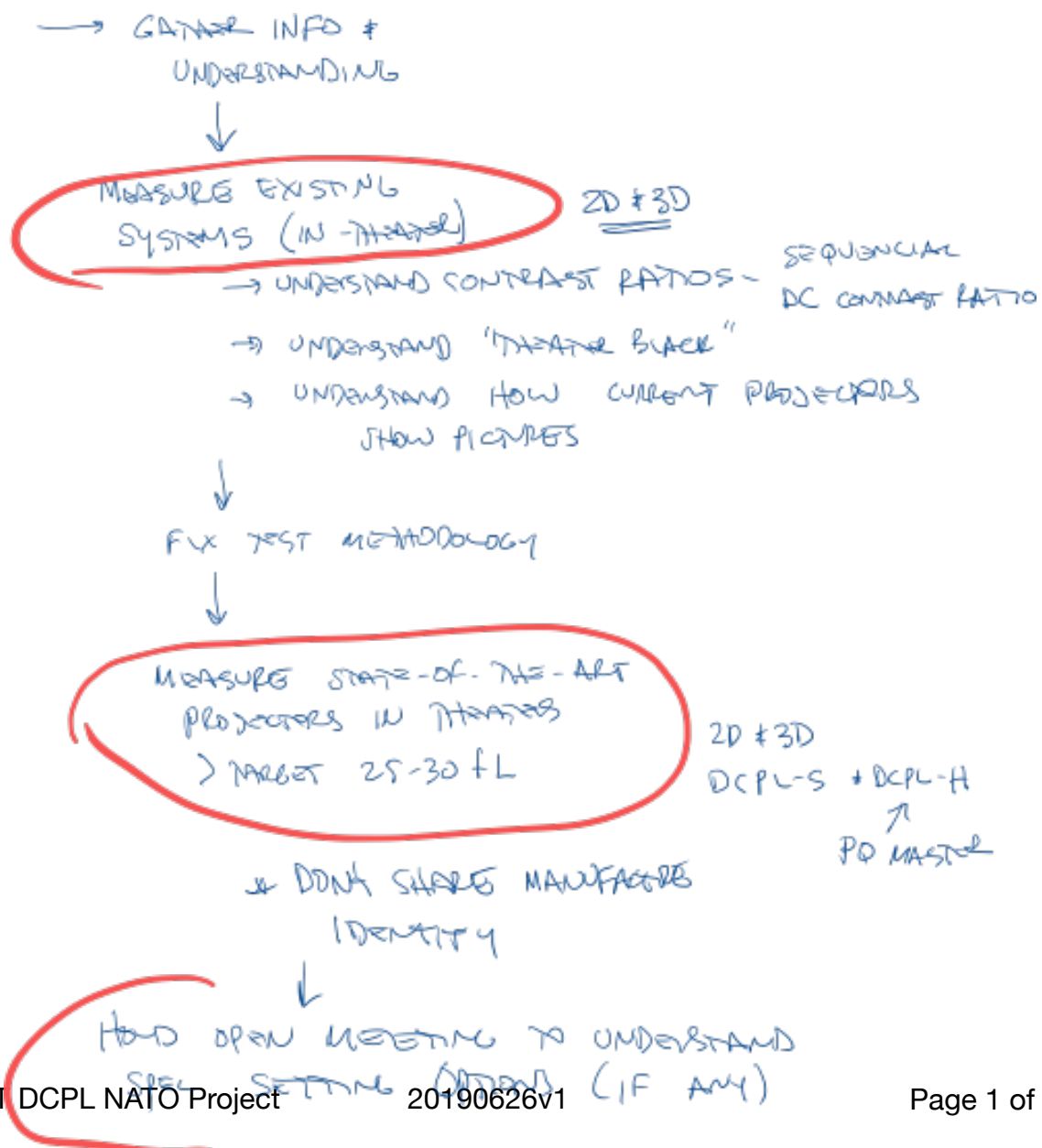


NATO call for projector/image demonstration

- > Need for projector replacement / upgrades over the next decade
- > Desire to consider higher brightness / higher contrast - especially for PLF theaters and 3D
- > Need to work with industry to understand benefits of higher brightness - creatives / manufactures / studios => Need to see it and talk about it.
- > Desire to understand in-theater experience (not just projector specs)

Need to gather some info and develop a test procedure for consistent demonstrations.



VERY DRAFTY VERSION

## Digital Cinema Picture Level Project

Digital Cinema Picture Level - DCPL

DCPL-S, DCPL-H, DCPL-Hc, DCPL-X (or maybe E).

S- Standard; H/Hc - High Brightness/High Contrast; X (or E) - Extended Highlights

Goal: to understand if we can define a DCPL-H level that would be compatible with current systems and achieves a need in the marketplace (around 30fL with 3D at 10fL or greater).

\*\*\* DRAFT plan (really drafty)

- Gather support / enthusiasm from industry
- Gather test content and detail test procedure
- **Conduct a field test of some current installed systems** (5-10 auditoriums?) **NOT AT HIGH BRIGHTNESS!**
  - To make sure test procedure works
  - To build a baseline of “as build” existing systems
  - Does not require getting new masters for high brightness until we really understand what we need.
- Revise test procedures / test content (FIX THE TEST PROCEDURES)
- Pick date and general plan for observing DCPL-H auditoriums
- **Conduct DCPL-H observations / Measurements**
- Hold meetings / discussions with industry participants
- Set DCPL-H and DCPL-Hc performance goals
- [Maybe submit to SMPTE to document for the world.]

\*\*\* **Test Methodology**

Content: We will be testing both 2D and 3D content at standard levels and high brightness levels. I propose using content **mastered** on the Dolby Cinema projector as the high brightness content although demonstration systems may be higher or lower brightness than Dolby’s standard. I think we can take that into account when we are viewing.

Naming:

2D14S is 2D content mastered at 14fL using standard Digital Cinema Gamma  
3D6S is 2D content mastered at 6fL using DC Gamma  
2D30PQ is 2D content mastered at 30fL using Dolby Cinema PQ gamma  
3D14PQ is 3D content mastered at 14fL using Dolby Cinema PQ gamma

“All number are variables.”

I picked 30fL for high brightness because that is close to the Dolby standard. We will ask for feedback from the industry - in particular projector manufactures to confirm that should be the starting point.

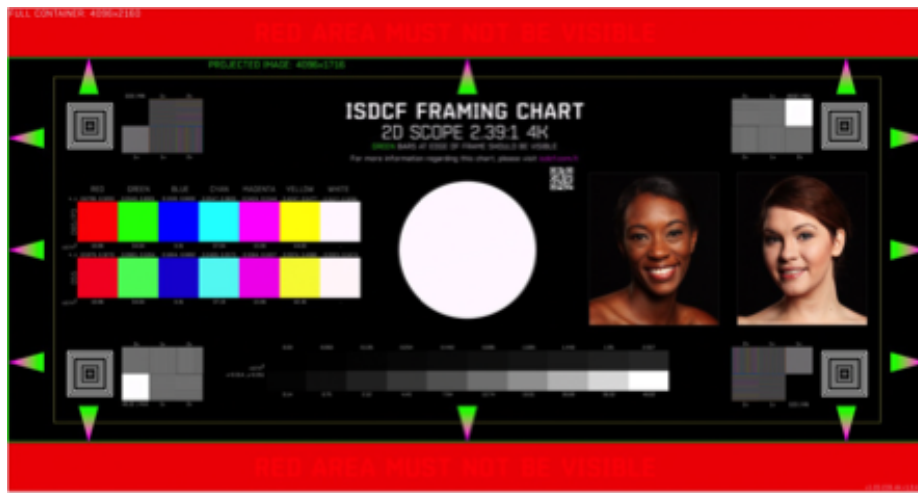
We would gather the test content in 2 ways to start - 2D14G and 3D6G - for initial tests since there is a fair amount of work to be done to create the PQ versions and let's make sure we are acquiring the right things...

#### Test Content:

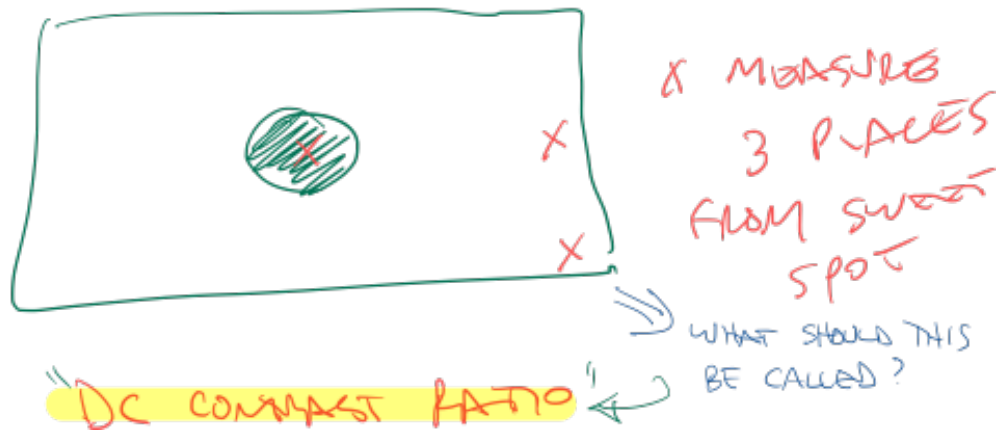
1. Framing and color charts - the ISDCF framing chart (see [ISDCF.com/t](http://ISDCF.com/t) for image) mastered in 4 ways - 2D14S (done), 3D6GS (new), 2D30PQ (new) and 3D14PQ (new)
2. Full white/full black (for sequential testing - 4 ways)
3. Center white dot - 4 ways - for inter-frame contrast measurement
4. STEM content - include ASC for mastering - 4 ways
5. 4-6 content clips - 4 ways

#### Test Devices:

1. Light meter - able to measure to 1mNIT to a high of 500NIT
  1. Generally, measure screen in dead center, lower left corner, and upper center for black and white measurements (3 places)
  2. Set meters at 2 screen heights back, center and far right seats (2 positions)
  3. Total of 6 measurements (x6)
2. Color Meter for 6-30 ftL measurements
3. People - Many with strong opinions - tell them what they are seeing.



CHECK WHITE POINT  
RGB COLOR POINTS  
WHITE BRIGHTNESS  
GENERAL FOCUS CHECK



## Testing

-> Target screens about 40' - use from 35-45' screens

First set up - prior to "showtime" The set-up adventure to make measurements.

Set time for people to attend after the set up. Conduct the set-up in both 2D and 3D prior to the "show."

1. Record location, projector type/brand/model
2. Record screen type and fill
3. Load content / confirm working system and projector set-up
4. House lights at normal feature levels
5. PRE-SHOW TEST / SETUP
  1. House lights at "Walk-In Levels" - Douse projector, measure darkness (x6)

6.
  1. House lights at “Trailer levels” - Douse projector, measure darkness (x6)
  2. House lights at “feature levels” - Douse projector, measure darkness (x6)
  3. Display framing chart measure center white, color patches and the black
  4. Display full white, Measure (x6)
  5. Display full black. Measure (x6)
  6. Center dot. Measure (x6)
  7. Corner dot. Measure (x6)
  8. Repeat for 3D content
1. MAIN SHOW - start at published time for folks to arrive, they are welcome to arrive early for the set-up. During the “show” we will not have sound on, we will encourage discussion and record discussion for later notes. We will have a leader encouraging the discussion.
  1. Observe the STEM content
  2. Observe the test clips
  3. Do MAIN SHOW again with 3D content

Summarize the Project so far... Do NOT identify projectors or auditoriums - summarize results only.

Hold discussions following all auditorium tests to evaluate the testing methodology and question if the numbers tend to reflect what people see.

Create plan for the next stage of the High Brightness testing...