ACESNext...The Road to ACES 2.0

NAB Birds of a Feather

April 9, 2019

Agenda

- CLF VWG Update (10AM – 10:05AM)
- ACESclip VWG Update (10:05AM – 10:10AM)
- Announcement: Governance (10:10AM – 10:15AM)
- Announcement: ACES 1.2 and Discussion (10:15AM – 10:25AM)
- Discussion of Roadmap to ACES 2.0 (10:25AM – 10:40AM)
- Call to Action! (10:40AM – 10:45AM)

CLF VWG Update

JD Vandenberg

What Common LUT Format is

- A universal file format for 1D LUT, 3x 1D LUT, 3D LUT, Matrices, Range Mapping, ...
- Support for several of those transforms to be serialized within one file.

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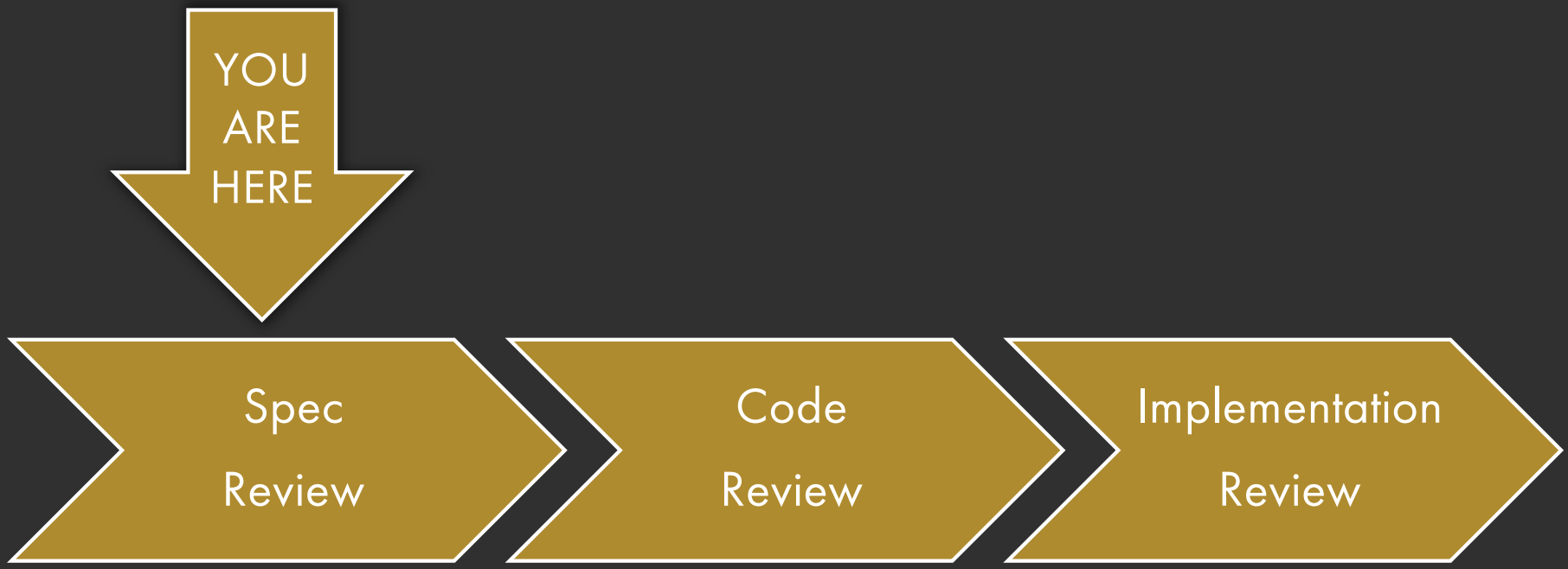
What Common LUT Format is NOT

- Part of ACES. It can be used with or without ACES.
- A hardware optimized LUT format
- A multi-branch color corrector transport format

CLF Virtual Working Group

CLF Virtual Working Group



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CLF Virtual Working Group

Spec review:

- XML formatting, Integer support, Required vs. Optional

Currently under consideration:

- List of pre-defined transfer functions
- Full invertibility
- Add nodes to specs
- Adding parametric functions (e.g. lin to log)

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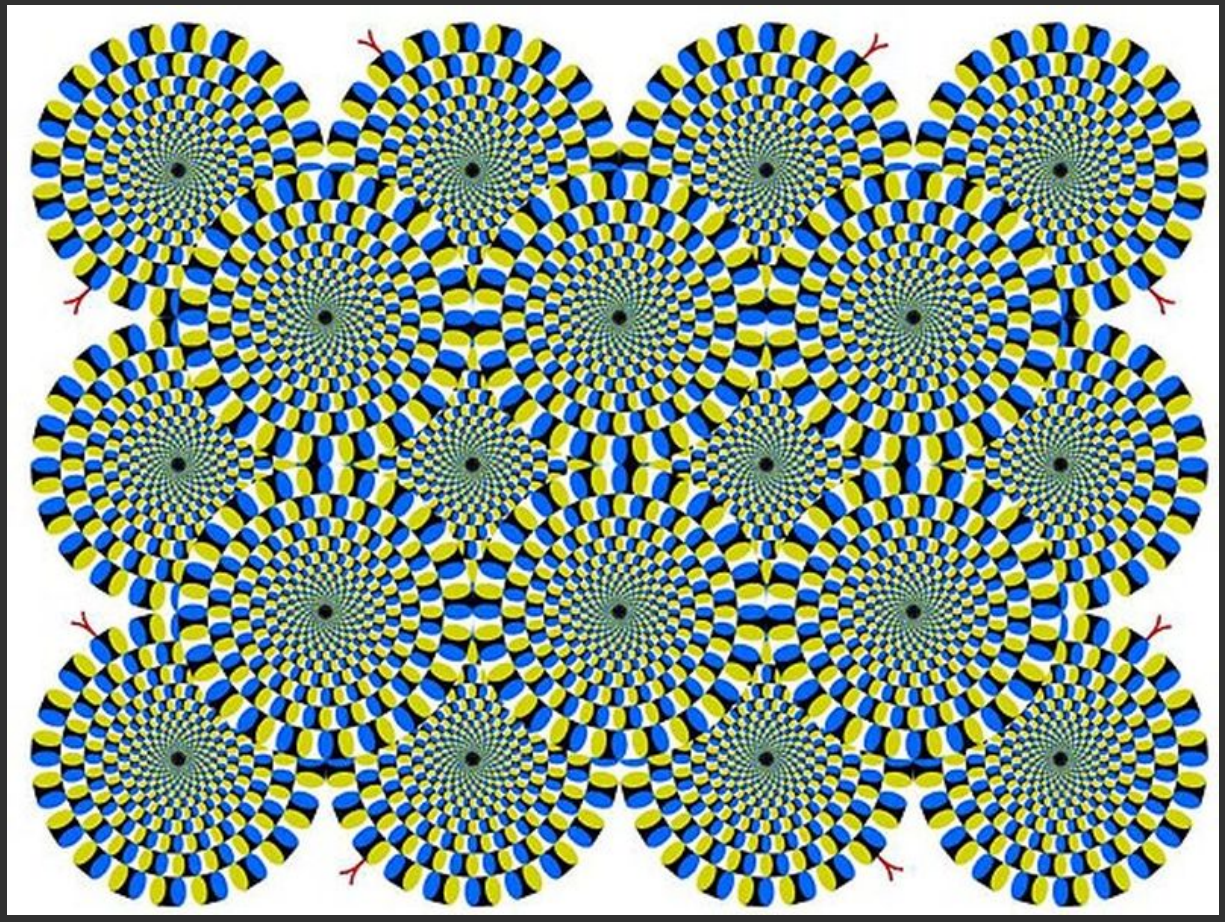
JOIN US



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ACESclip Update

Chris Clark

Goals of this ACESclip VWG

1. What are the **user requirements** of ACESclip metadata?
   - *Examples:*
     - *PRODUCTION: **how do I view this shot? (now)***
     - *ARCHIVAL: **how was this viewed? (years from now)***

2. What software or hardware is responsible for **creating, modifying, and reading** ACESclip metadata?
   - *Examples:*
     - *Cameras, on-set grading, dailies, VFX, color grading software*

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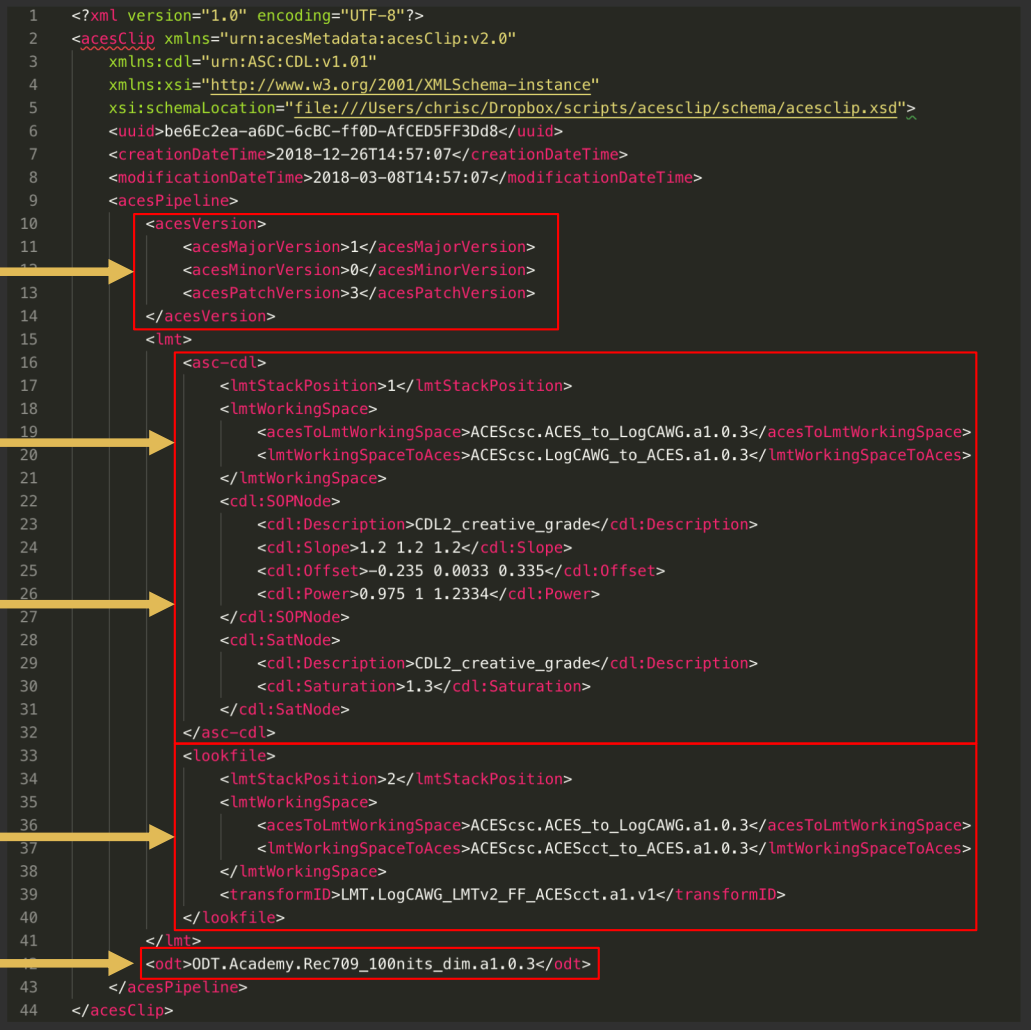
What ACES version?

Working Color Space

CDL?

LMT?

Which ODT?



```
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    xmlns:cdl="urn:ASC:CDL:v1.01"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="file:///Users/chrisc/Dropbox/scripts/acesclip/schema/acesclip.xsd">
    <uuid>be6Ec2ea-a6DC-6cBC-ff0D-AfCED5FF3Dd8</uuid>
    <creationDateTime>2018-12-26T14:57:07</creationDateTime>
    <modificationDateTime>2018-03-08T14:57:07</modificationDateTime>
    <acesPipeline>
        <acesVersion>
            <acesMajorVersion>1</acesMajorVersion>
            <acesMinorVersion>0</acesMinorVersion>
            <acesPatchVersion>3</acesPatchVersion>
        </acesVersion>
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                    <lmtWorkingSpaceToAces>ACEScsc.LogCAWG_to_ACES.a1.0.3</lmtWorkingSpaceToAces>
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                    <cdl:Power>0.975 1 1.2334</cdl:Power>
                </cdl:SOPNode>
                <cdl:SatNode>
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                    <cdl:Saturation>1.3</cdl:Saturation>
                </cdl:SatNode>
            </asc-cdl>
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                    <lmtWorkingSpaceToAces>ACEScsc.ACEScct_to_ACES.a1.0.3</lmtWorkingSpaceToAces>
                </lmtWorkingSpace>
                <transformID>LMT.LogCAWG_LMTv2_FF_ACEScct.a1.v1</transformID>
            </lookfile>
        </lmt>
        <odt>ODT.Academy.Rec709_100nits_dim.a1.0.3</odt>
    </acesPipeline>
</acesClip>
```

What's a must-have and what's a nice-to-have?

Must-have examples:

- ACES viewing recipe
- Non-ACES working spaces (for CDLs, LMTs)
- Custom transforms (CLF?)

Nice-to-have example:

- History of viewing recipes, multiple recipes
- Framing info...

Where do we stop?

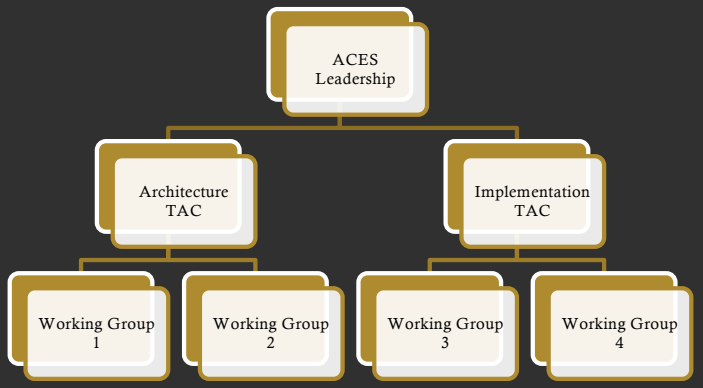
Our Workspace

- Discussion: www.acescentral.com
- Example files & meetings: aces.mp/ACESCLIP_REQ
- We welcome your input!

Announcement: Governance

Governance

- We have a process
  - Based on ASWF/Linux Foundation principles
  - ACES 1.2 is proof of concept
  - Governance Document – https://aces.mp/P-2019-001



Governance – Technical Advisory Committees

Architecture TAC

Member	Organization
Rod Bogart	ACES Vice Chair
Bill Baggelaar	Sony Pictures Entertainment
Alex Fry	Animal Logic
Joseph Goldstone	ARRI
Andrea Kalas	Paramount
Brian Karis	Epic Games
Harvey Landy	NBCUniversal
Mike Maloney	Marvel Studios
Thomas Mansencal	Weta Digital
Daryn Okada	Cinematographer
Josh Pines	Technicolor
Doug Walker	Autodesk
Mike Whipple	Netflix
Mike Zink	Warner Bros.

Implementation TAC

Member	Organization
Joachim Zell	ACES Vice Chair
Sean Cooper	OCIO
James Eggleton	Codex
Weyron Henriques	Deluxe / Efilm
Pablo Garcia	Mission Digital
Bruno Munger	ColorFront
Deke Kincaide	Digital Domain
Graeme Nattress	RED
Peter Postma	FilmLight
Patrick Renner	Pomfort
Nick Shaw	Antler Post
Dan Tatut	Marquise Technologies
Kimball Thurston	Weta Digital
Kevin Wheatley	FrameStore
Raymond Yeung	Dolby Laboratories

Confirmed TAC participants as of April 9, 2019. Subject to change.

ACES

Announcement: ACES 1.2 and Discussion

ACES version 1.2

- Release – Fall 2019
- New Features
  - New CLF specification
  - New ACESclip specification with versioning support
  - Non-ACES grading and custom LMT application space support (via ACESclip)
- Discussion

Discussion of Roadmap to ACES 2.0

ACES 2.0 Features Under Discussion

- New Features
  - Simplified RRT
  - Parametric Output Transform
  - Parametric Dim Surround Support
  - Production ready reference implementation
    - Interchangeable Programmatic LMT format
    - Interchangeable IDT format
  - Improved End-User Documentation
- Major Fixes
  - Gamut management (Blue problem fix)

Top 10 Listening Tour Request

Rank	Issue	Address in Release
1	RRT (invertible and separate the look)	2.0
2	ACESclip spec and implementation	1.2
3	LMT exchange and archive format	2.0
4	Fix negative values issues (gamut problems)	2.0
5	Realtime implementations	2.0
6	Custom IDTs	2.0
7	Parametric ODTs	2.0
8	Support for custom working spaces	1.2
9	Revisit AP0 and AP1	2.0
10	No look modifiers in RRT and ODTs	2.0

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Top Staff Recommendation

Issue	Address in Release
Simplified Output Transforms / RRT	2.0
Invertibility	2.0
Single Stage Transform	1.1
Parametric output transform algorithm with presets	1.1
Use case / end-user requested output transform presets	1.1 / 2.0
Algorithmic tone scale	1.1
Standalone surround compensation algorithm	2.0
Standalone white point compensation algorithm	1.1
Robust fix to "ARRI Blue" problem	2.0
Technical documentation detailing design decisions	1.1/1.2/2.0
End-user focused documentation	1.1/1.2/2.0
Executive overview one sheet	1.2
FAQs for multiple audiences	1.1/1.2/2.0
Simplified ACESclip	1.2
LMT generator	?
Support for user defined working spaces	1.2
Deprecate some transforms (e.g. ACESproxy)	2.0
ACES file viewer	?
ACES Library with API (Making it easier for partners to implement)	2.0
Robust MS Windows support for CTL	?

ACES Day $100 test

(over $100 total)

Issue	Address in Release
IDTs for more cameras	2.0
Implement CLF	1.0 / 1.2
ACESclip with LMT support	1.0 / 1.2
Faster Implementations	2.0
Versioning	1.2
Add ODT for 1000 and 4000 nits	1.1
Improve grade-ability	1.2
Formalize UI Guidelines	1.0
Better Support for OCIO	OCIO 2.0
Butter support for ICC applications	?
Improve color fidelity and face tones	? / 2.0

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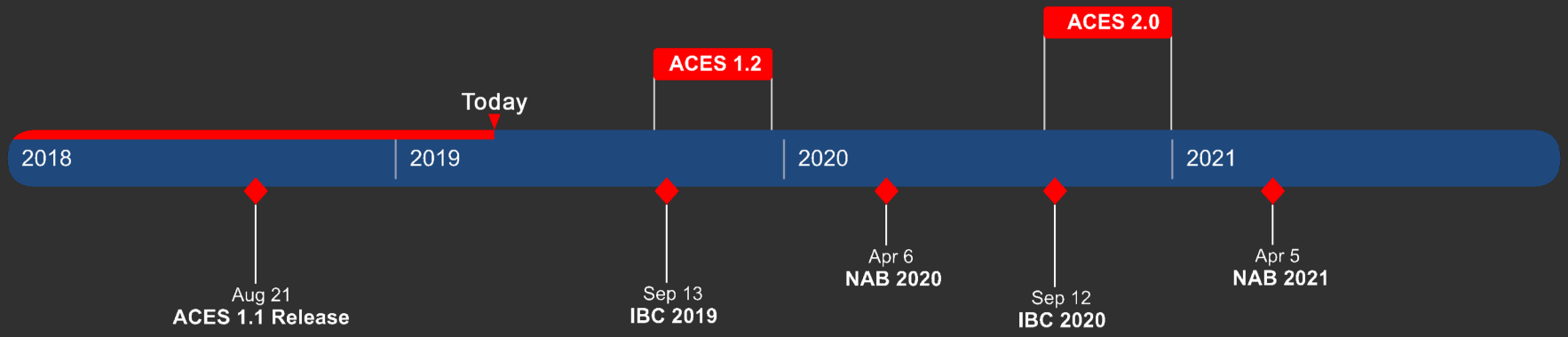
Release Timeline – for Discussion



Release Timeline – for Discussion

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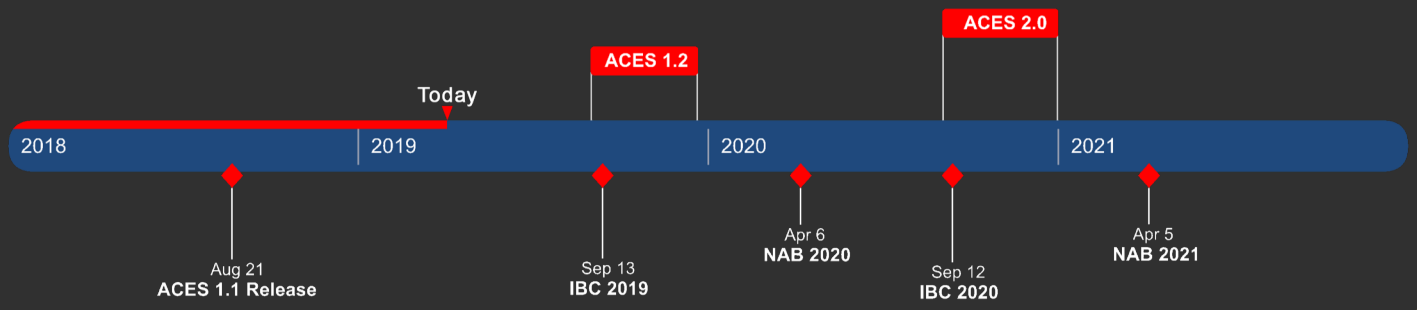
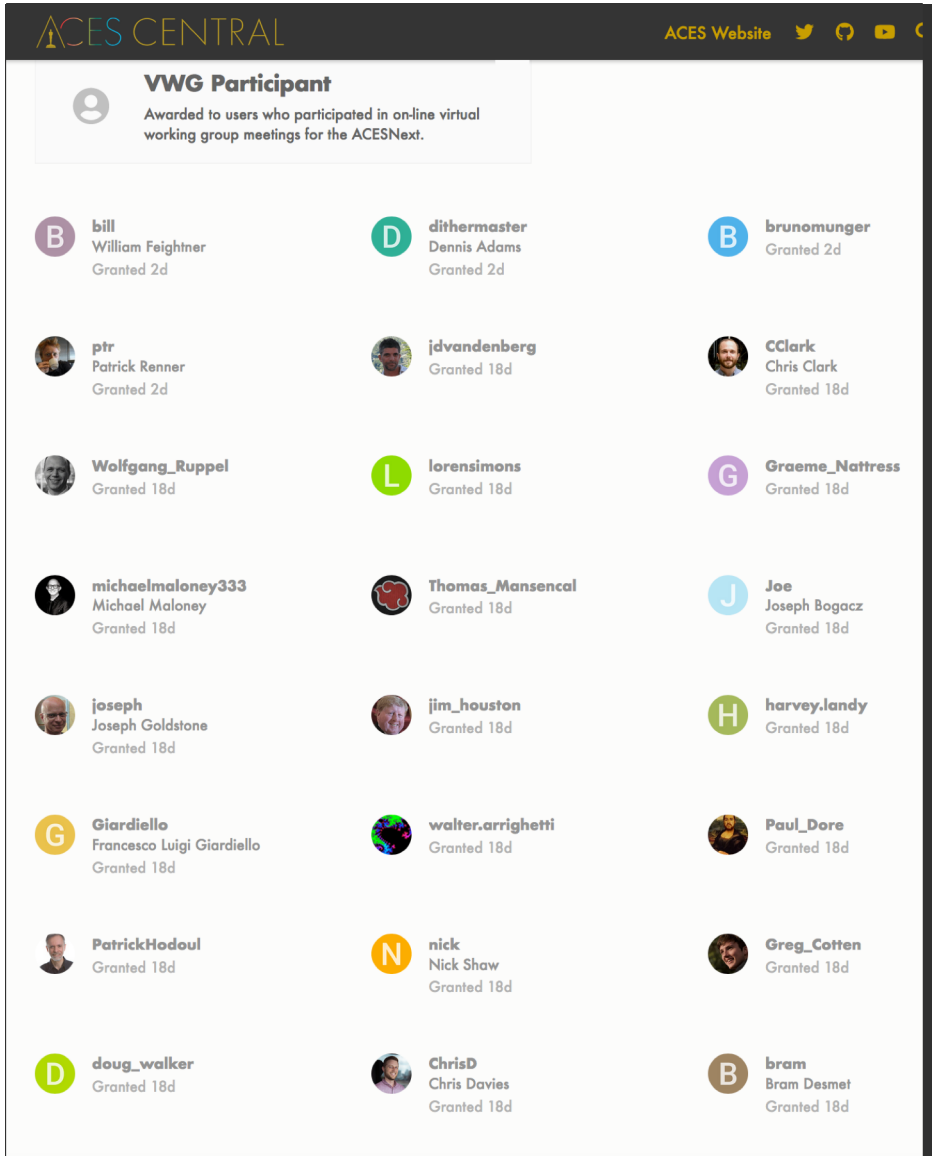


Call to Action!



Call to Action!

- Join the CLF and ACESclip VWGs
  - Document repository https://aces.mp/VWG_HOME
  - ACESCentral for discussions https://acescentral.com/c/aces-development-acesnext
- Proposals under evaluation
  - IDT
  - Gamut Study
- Proposal Form – https://aces.mp/wg_proposal_template_v1

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