

ACES Implementation Technical Advisory Committee

November 19, 2019



Agenda

- Introduction and ground rules (10 mins)
- ACES reorganization and role of the TAC (15 mins)
- ACES release roadmap (20 mins)
- Working Group status reports
 - CLF Implementation Working Group – Doug Walker (10 mins max)
 - Discussion (10 mins max)
 - AMF Implementation Working Group – Dan Tatut (10 mins max)
 - Discussion (10 mins max)
 - IDT Implementation Working Group – Josh Pines (10 mins max)
 - Discussion (10 mins max)
- Conclusions and Next Steps (10 mins)

Introduction and Ground Rules

- Introductions
 - TAC members invited by the ACES leadership team
 - TAC meets quarterly
 - Ensure ACES Working Group deliverables are consistent with ACES implementation strategy and goals.
 - Term is twelve months, with up to three consecutive terms allowed per participant.
 - The ACES leadership team feels your participation as a key stakeholder in ACES will greatly benefit the project.

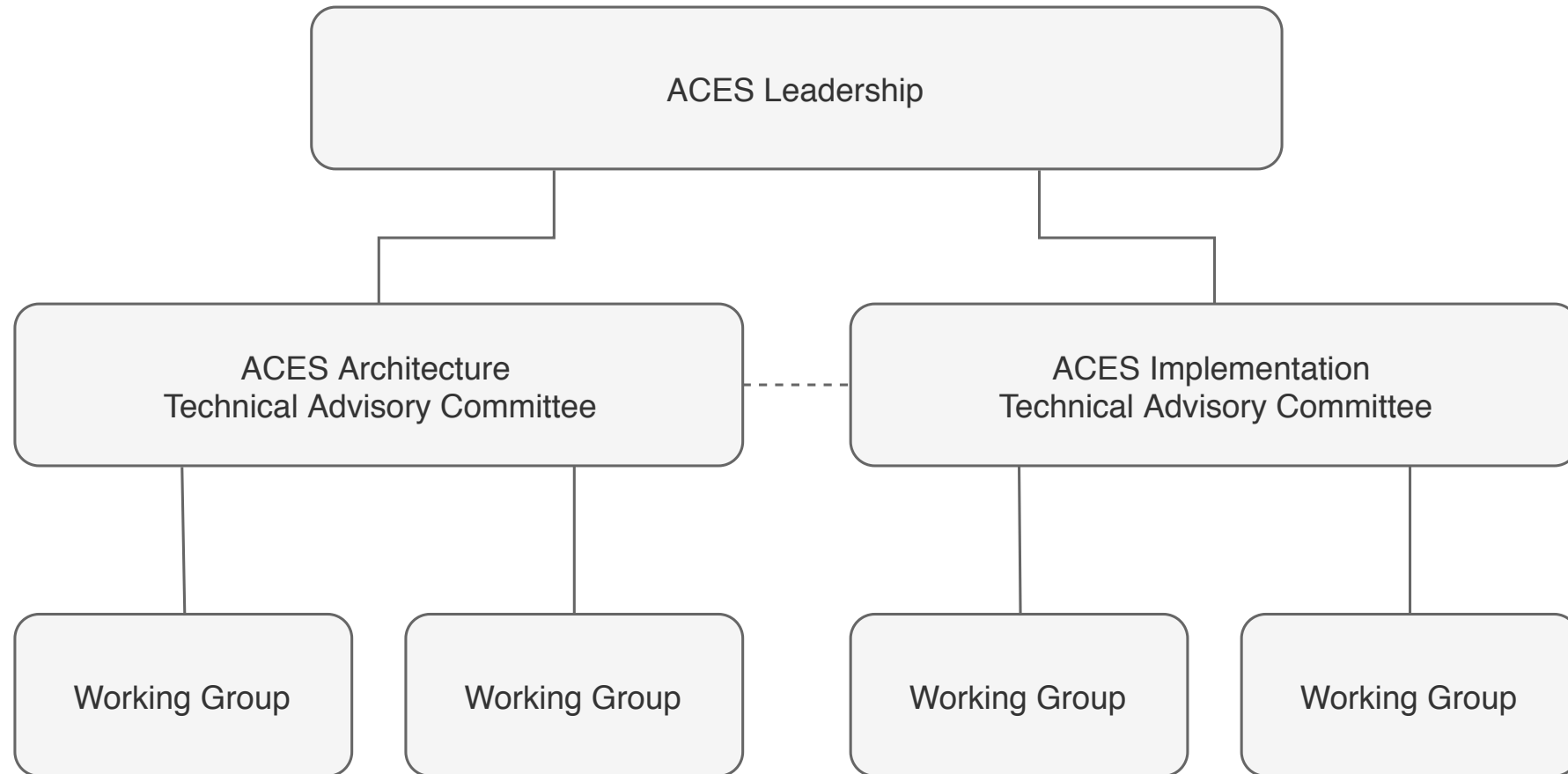
Introduction and Ground Rules

- Ground rules
 - TAC meetings are public and consider any comments to be public disclosures
 - Observers may attend via GoToMeeting
 - Meetings are recorded, transcribed and posted to ACESCentral.com
 - Participation is limited to TAC members and observers as recognized by the TAC Chair
 - TAC members can communicate between meetings in the TAC member section of ACESCentral.com
 - Be courteous ... everyone is here because they care about ACES

ACES Reorganization and Role of the TAC

- ACES Reorganization
 - New ACES Leadership Team in 2016
 - Chair – Annie Chang (NBCUniversal)
 - Vice-Chairs – Rod Bogart (Epic Games), Joachim Zell (EFILM)
 - Reorganized the project oversight structure in 2019
 - Published P-2019-001 - ACES Project Organization and Development Procedure
 - Established Architecture and Implementation Technical Advisory Committees
 - Established process for forming issue based working groups

ACES Reorganization and Role of the TAC



ACES Reorganization and Role of the TAC

- Role of the Implementation Technical Advisory Committee
 - Provide stakeholder perspective on the development of ACES
 - Peer review and recommendation of Working Group deliverables to ACES Leadership
 - Ensure consistency of Working Group deliverables with the ACES implementation strategy and goals
 - Ensure Working Group activities are within their approved scope and that timelines are met
 - Review and provide feedback to ACES Leadership on Working Group proposals
 - Seek to reach consensus that is in the best interest of the ACES community

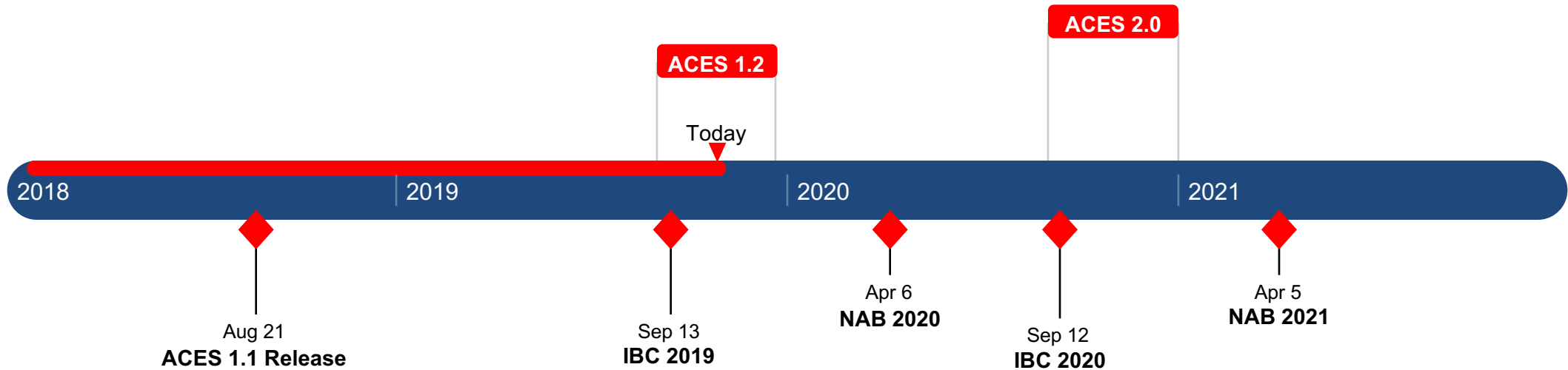
ACES Reorganization and Role of the TAC

The Implementation TAC does not engineer solutions to problems but serves as a body to provide guidance and expert advice to the Working Groups it oversees.

ACES Release Roadmap

- ACES release roadmap announced at NAB 2019
- ACES 1.2 – Fall 2019
- ACES 2.0 – 2020
- Dependent on progress of Working Groups and community engagement

ACES Release Roadmap



ACES Release Roadmap

- ACES 1.2 Features
 - New Common LUT Format (CLF) Specification
 - New ACES Metadata File (AMF) specification with versioning support
 - Custom grading and LMT application space support (via AMF)
 - Minor bug fixes

ACES Release Roadmap

- 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)

Working Group Status Reports

- CLF Implementation Working Group
 - Chair – Doug Walker (Autodesk)
- AMF Implementation Working Group
 - Chair – Dan Tatut (Marquise Technologies)
- IDT Implementation Working Group
 - Chair – Josh Pines (Technicolor)

Report from the CLF Implementation Working Group to the Implementation TAC

Doug Walker, Working Group Chairman

CLF Implementation Working Group

- Success of standards relies on having high-quality implementations
- This VWG will be focused on helping CLF be successful
- Questions for the VWG include:
 - How should CLF implementations be tested and validated?
 - Should there be a minimal set of capabilities?
 - Should there be different profiles/levels of support?
 - What testing materials should be made available?
 - Should there be a reference implementation?
 - When/how should plug-fests be run?

CLF Implementation Working Group – Next Steps

- We want implementors to focus on implementation (not writing)
- The Implementation VWG should start with a "completed" draft
 - May require some weeks to get to that point
- First Implementation VWG meeting planned for December
- Implementors VWG may provide suggestions back to Authoring VWG:
 - Identify confusing language
 - Suggest improved descriptions to avoid ambiguities
 - Add additional example CLFs

CLF Implementation Working Group

Discussion ...

Report from the AMF Implementation Working Group to the Implementation TAC

Dan Tatut, Working Group Chairman

Group Mission

- Work on the implementation aspects of ACES Metadata File (AMF) in commercial/free products and systems
- Work with the design group on potential modifications if needed
- Develop the “AMF Toolkit” for implementers
- Promote the adoption of ACES Metadata File via the “AMF toolkit”

Deliverables

The group will produce a variety of deliverables (informally known as the “AMF toolkit”)

- Interoperability canonical test vectors for the primary use-cases
- Pseudo-code/algorithms to guide the implementers in their effort
- Propose support/interaction for AMF with various media transport formats
- Update the Academy Digital Source Master (ADSM) specification

Use cases

The group will focus its efforts on the support for the following use-cases

- Dailies/Editing
- VFX/Color grading
- Mastering/Archiving

Resources

Specification (Draft, November 2019)

- <https://acescentral.com/uploads/short-url/sfAy2B49C2kyKnbhmjFVooYedw.pdf>

XML Schema GitHub Repository

- <https://github.com/aforsythe/amf/tree/clean>

Implementation GitHub Repository

- <https://github.com/dtatut/amf-implementation>

Schedule

- The overall duration of the group's work: **2 months**
- Aggressive agenda: **first 4 weeks, 1 call per week!**
- We will adapt the frequency for the second part, based on results
- **First call on November 21st!**
- Following calls will be scheduled at a better time (APAC-friendly)

Contact

To join the implementation effort send an email to:

- Ricardo Rodriguez – rrodriguez@oscars.org
- Dan Tatut – dtatut@marquise-tech.com
- And check out ACESCentral.com

AMF Implementation Working Group

Discussion ...

Report from the IDT Implementation Working Group to the Implementation TAC

Josh Pines, Working Group Chairman

The Problem

1. Practice has shown unexpectedly large variability when the same scene is captured with multiple digital cameras and converted to ACES using the manufacturer's currently published IDTs
2. IDT's are created by the camera manufacturers
3. The recommended procedure for the generation of Digital Camera IDTs is detailed in Academy Procedure "P-2013-001 – Recommended Procedures for the Creation and Use of Digital Camera System Input Device Transforms (IDTs)."

Proposed Work

1. Provide guidance and tools to supplement P-2013-001 in the creation of digital camera IDTs.
2. Determine best practices for camera manufacturers and camera operators to ensure digital camera material comes into ACES with the proper exposure and color balance.

Deliverables

- Proposed deliverables related to #1 include:
- Documentation outlining the strengths and weakness of various IDT models
- Offer test procedures to camera manufacturers to verify camera spectral sensitivities.
- Recommended defaults steps in P-2013-001 where options are presented.
- Recommended datasets.
- A reference implementation of the procedure specified in P-2013-001.
- Test procedures to verify the quality of an IDT.
- Documentation outlining issues and potential solutions to minimize errors in exposure and white balance associated with converting camera data to ACES.
- Test procedures to verify exposure and color balance.
- Recommendations on test equipment.

IDT Implementation Working Group

Discussion ...

Conclusions and Next Steps

- Review of meeting outcomes
- Determine approximate timeframe for next meeting