

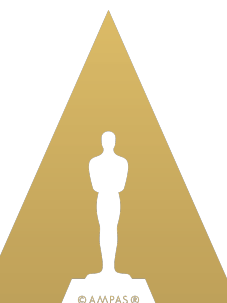


\ ACADEMY COLOR ENCODING SYSTEM \

ACES Update IMAGO 2017

Alexander Forsythe
Imaging Engineering Manager – ACES Technical Lead
Academy Science and Technology Council

\ ACEScentral.com \



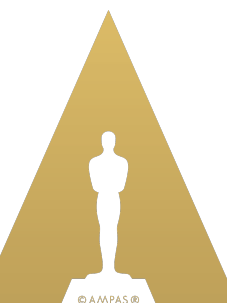
ACES news

- Released ACES 1.0 in Fall of 2014
- 2017 New Leadership
 - Chair
 - Annie Chang – VP Technology, Marvel Studios
 - Vice-Chairs
 - Rod Bogart – Director of Production R&D, HBO
 - Joachim Zell – VP Technology, Deluxe EFilm
- New working model
 - Adopting a more open source organizational structure
 - Virtual Working Groups
 - Focus on outreach ... global organizations, educational institutions, international film makers
- Planning the Roadmap for future versions of ACES



ACES in Production

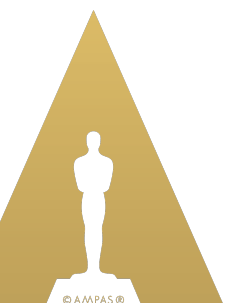
- Guardians of the Galaxy Vol 2.
- The Lego Batman Movie
- Steve Jobs
- Bahubali
- The Wedding Ringer
- Cafe Society
- Deliverance Creek



“I would never have been nominated for this
award without ACES.”

–*Theo van de Sande, ASC*

*2014 Nominee – A.S.C. Outstanding Achievement in Cinematography in Television Movie, Miniseries, or Pilot
“Deliverance Creek”*



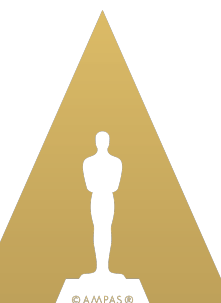
Why ACES?

- The global standard for feature film and television production
- Protecting the creative vision
- Enabling new technologies (HDR, wide gamut, VR, gaming, etc.)
- Vendor agnostic
- Leverages commonalities – Avoiding “Snowflake” workflows



What is ACES?

- Not a single piece of software
- A set of digital production standards, best-practices, and specifications for building image pipelines.
- A system for end-to-end color consistency (what you see is what you get on set, in dailies, in VFX, in DI and in the archive)
- A potential cost- and time-saver (but it won't cost you any more)
- Free



ACES
PRODUCT PARTNERS

ARRI



AUTODESK

Canon

codex

colorfront



DigitalVision



FilmLight

Firefly
CINEMA

FOTOKEM
FILM . VIDEO . DATA



MARQUISE
TECHNOLOGIES

MTI FILM

Panasonic

POMFORT^{fn}



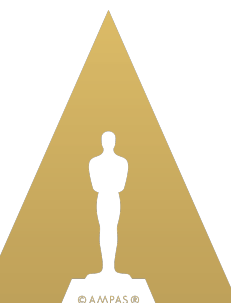
:SGO

SHOTGUN

SONY

technicolor

THE
FOUNDRY.



What ACES does for you

- Eliminates “secret sauce”
- Provides a common image interchange file format between all departments
- Simplifies communication between everyone handling and viewing images
- Enables non-proprietary high dynamic range (HDR) workflows
- Provides a standardized archival master file

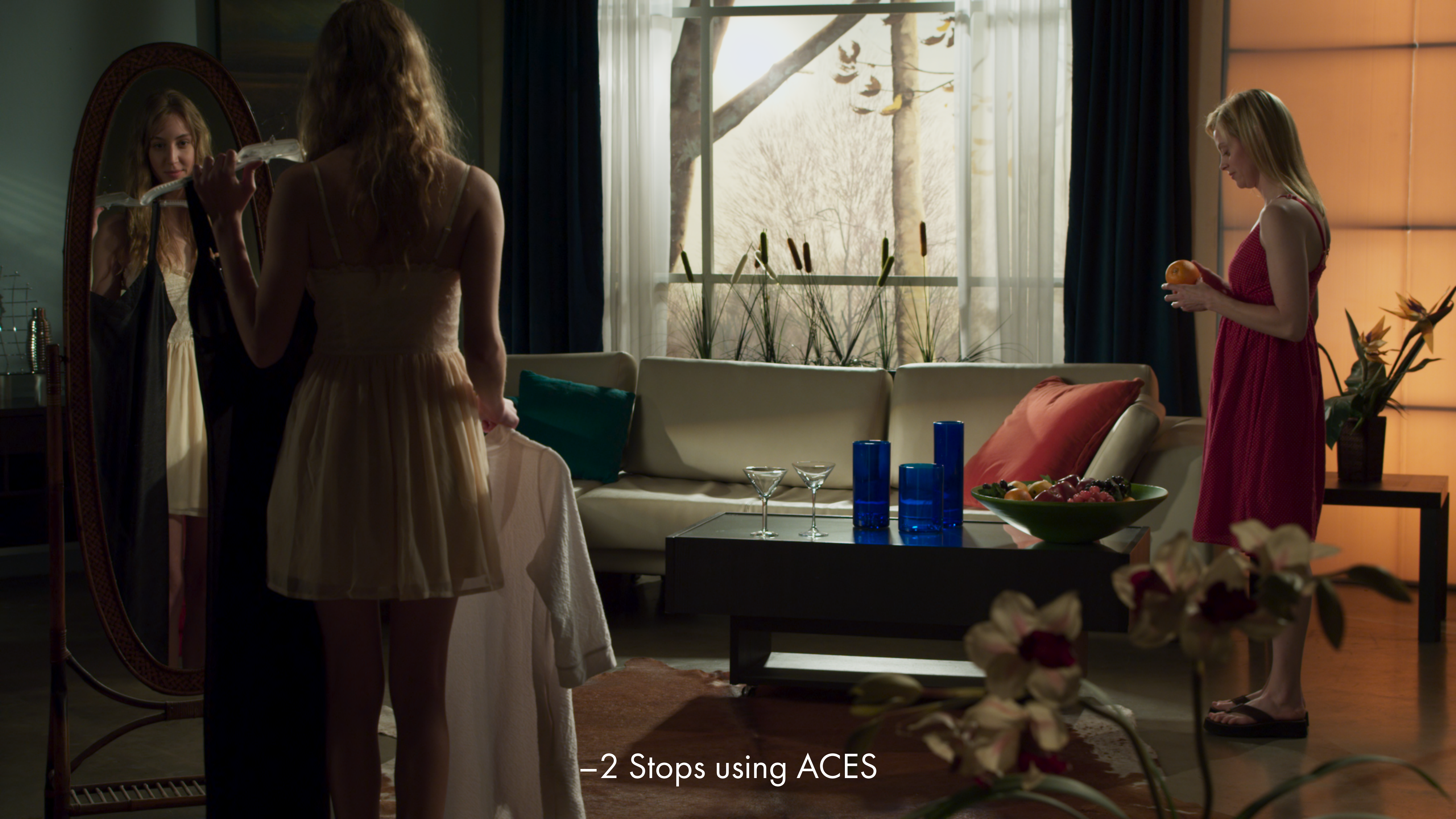




Normal Exposure

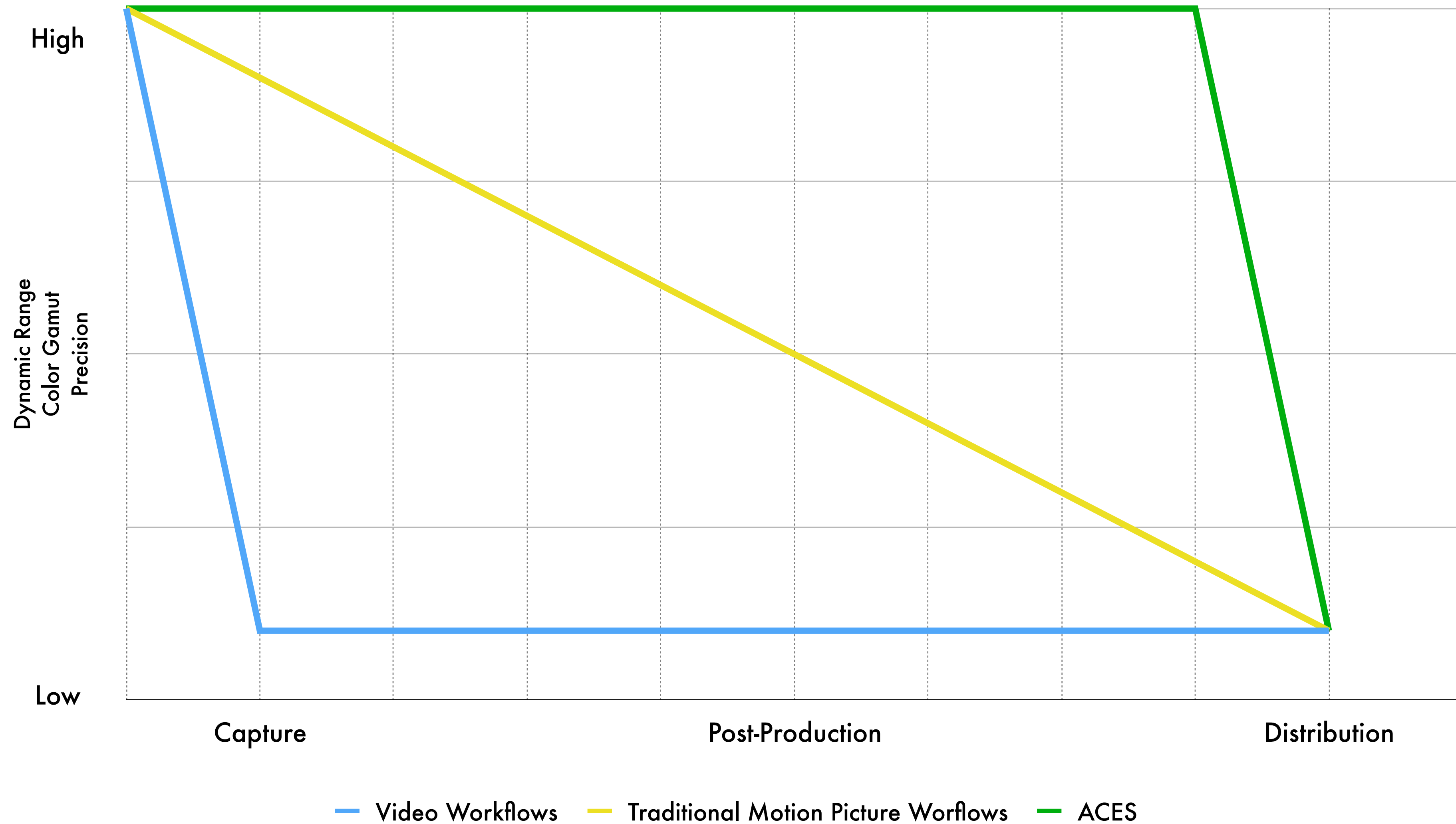


-2 Stops using Rec.709

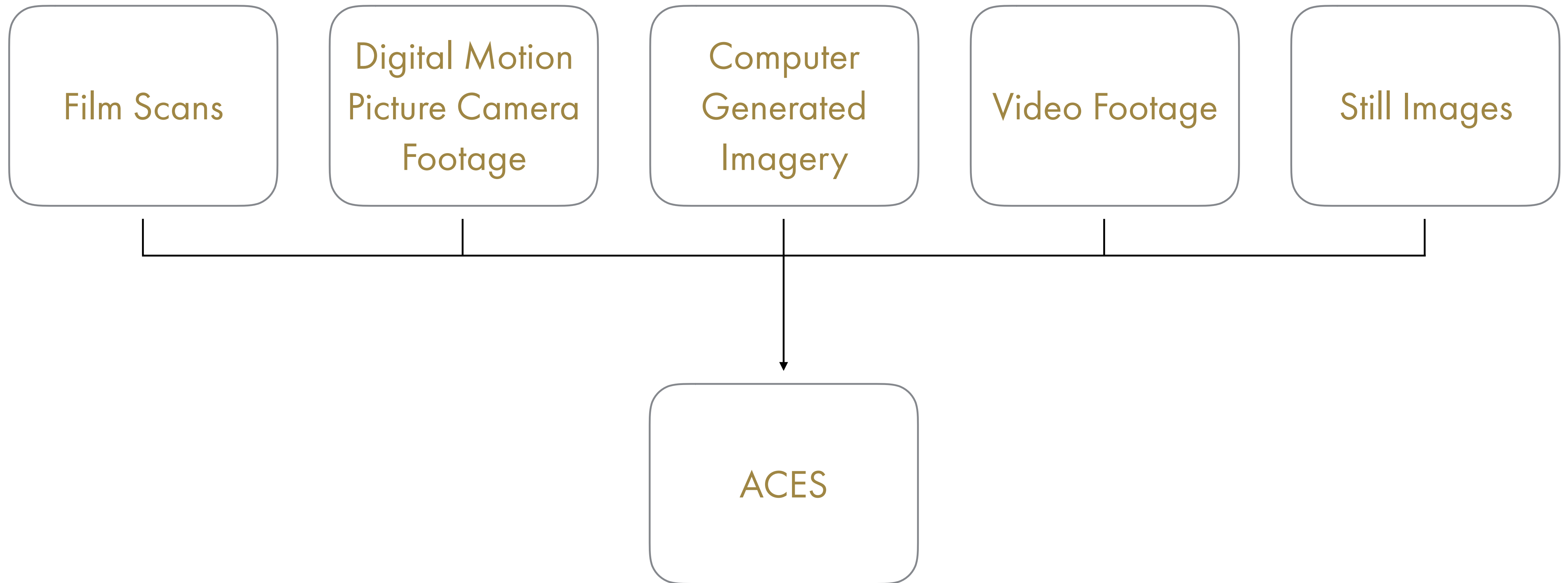


-2 Stops using ACES

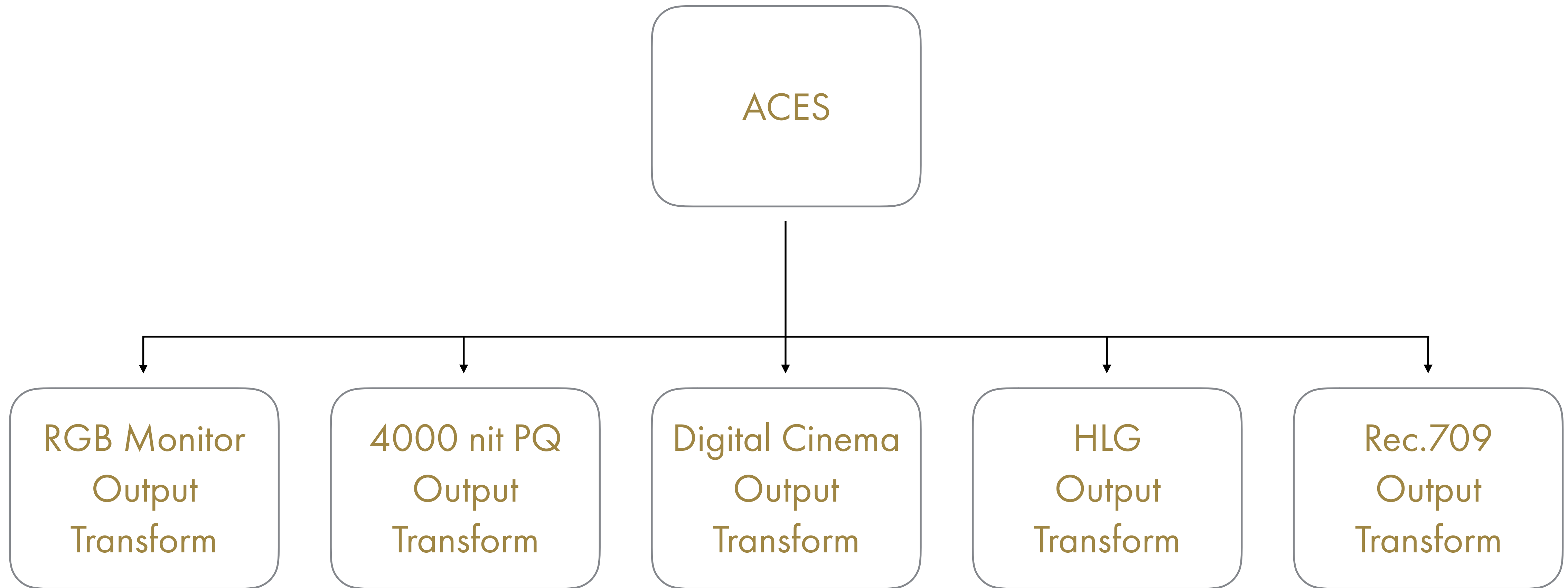
Image quality throughout the workflow



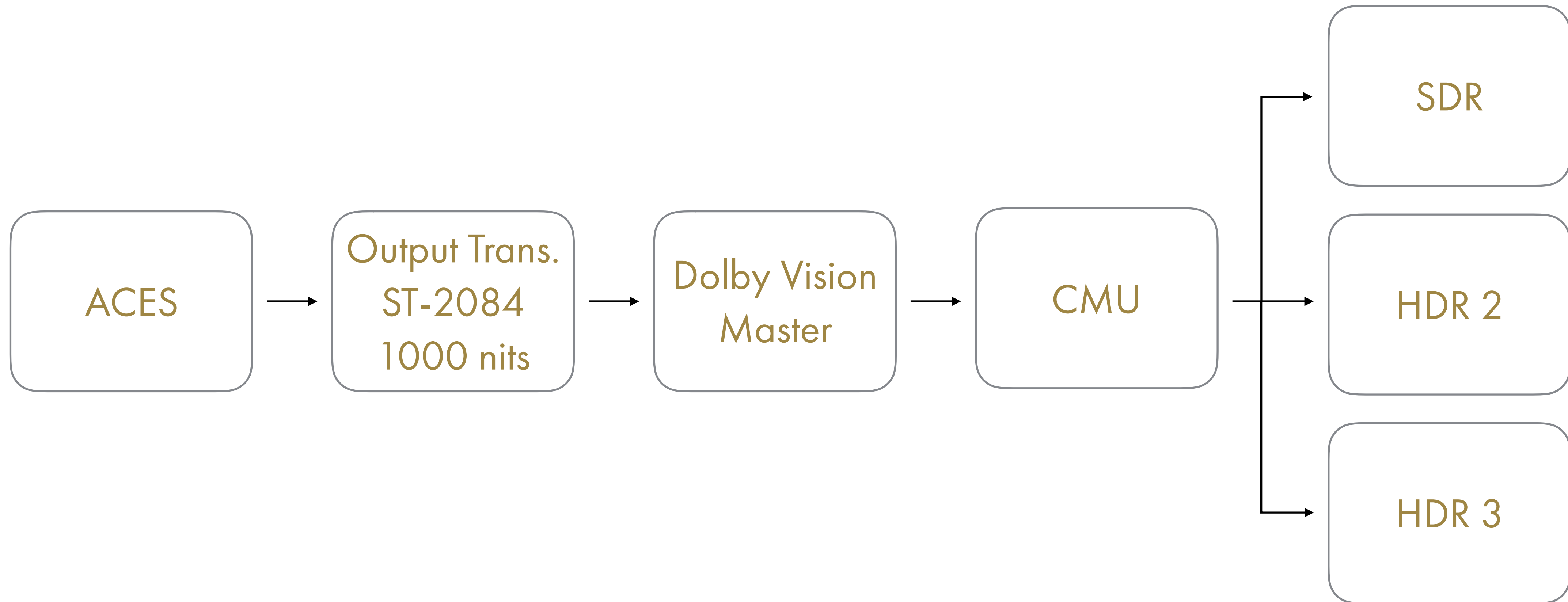
Maintaining image quality in ACES



Viewing ACES images



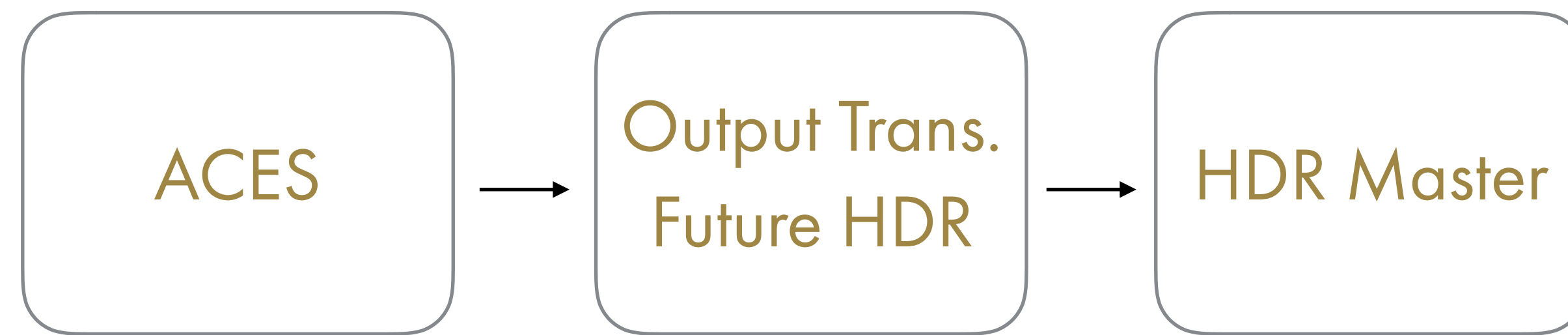
Working with HDR systems – Dolby Vision



Working with HDR systems – Hybrid Log-Gamma

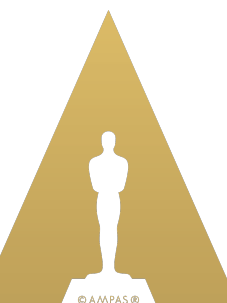


Working with HDR systems – Future HDR workflows



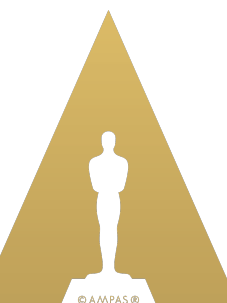
ACES Digital Archiving Standard

- The digital equivalent of the finished film negative for the archive
- Uncompressed, full dynamic range, color gamut and precision
- Fully specified encoding and intended display conditions
- All 6 Major Studios are investing in ACES archiving standards work at SMPTE
- Look for “ACES/IMF” coming soon...



Standards update

- SMPTE Standards
 - ST 2065-1 – Academy Color Encoding Specification
 - ST 2065-2 – Academy Printing Density
 - ST 2065-3 – Academy Density Exchange Encoding
 - ST 2065-4 – ACES Image Container File Layout
 - ST 268:2014 – File Format for Digital Moving – Picture Exchange (DPX)
 - ST 2065-5 – MXF — Mapping ACES Image Sequences into the MXF Generic Container
 - ST 2067-50 – Interoperable Master Format – Application #5 ACES (DRAFT)
- SMPTE Standards will be elevated to ISO standards via TC36



On-going Work

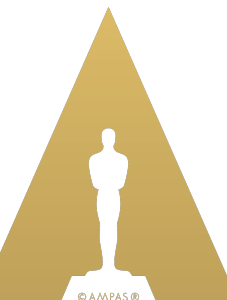
- Metadata via ACESclip
- Standardization of Academy Common LUT Format (CLF)
- Refined HDR ODTs
- Unified / Parametric Output Transform Model

The image shows two overlapping software windows. The top window is titled 'ACES Settings' and contains the following controls:

- ACES System Version: 1.0.3 (dropdown)
- Default Input Transform: None (dropdown)
- Look Transform: None (dropdown)
- Output Transform: ACES 1.0 Output - P3-D60 (dropdown)
- Advanced Settings ... (button)

The bottom window is titled 'Output Transform Advanced Settings' and contains the following controls:

- Output Transform Presets: ACES 1.0 Output - P3D60 (dropdown), Load Settings (button), Export Settings (button), Save (button)
- Display Primaries: P3 (dropdown)
- Display White Point: D60 (dropdown)
- Gamut Restriction: None (dropdown)
- Display EOTF: Gamma 2.6 (g=2.6, scale=48) (dropdown)
- Output Transform Tone Scale: Standard Cinema (dropdown)
- Surround: ☒ Dark, ☐ Dim
- D60 Simulation: ☒ Off, ☐ On
- Encoding Range: ☒ Full, ☐ Legal
- Help (button)



WELCOME

TO



THIS IS IT!

THE FILMMAKER'S PORTAL TO
EVERYTHING YOU NEED TO
KNOW ABOUT THE ACADEMY
COLOR ENCODING SYSTEM.

CENTRAL

We need your help ...

- Sign up for ACEScentral
- Follow ACES on Twitter @AcademyACES
- Let the ACES community know who they should be talking to
- Give ACES a try
- Send us your feedback :
ACEScentral or aces@oscars.org
- Let us know about ACES productions
- Wear your ACES hat!

