Please answer each of the questions below to the best of your ability and submit to tac@lists.aswf.io for consideration.

- Name of the project (existing or proposed):
  - rawtoaces is an existing project under the ampas github

- Requested project maturity level (select one): Incubation

- Project description (please describe the purpose and function of the project, its origin and its significance to the ecosystem):
  - Adobe lightroom and similar tools are great and provide nice user interfaces, however motion picture studios, and in particular VFX studios, need to have a batch-oriented tool for conversion of thousands of photos taken on set. These images will be often be used as texture reference, or for HDRI during rendering and demand the utmost in accuracy when converting them into the prominent color space used in production.
  - There was dcraw, but Dave Coffin does not seem to be maintaining this tool at the same rate he once did
    - dcraw seems to have issues producing correct ACES values
    - A number of libraries exist to open and read images, although they do not themselves provide tooling. Instead, these are integrated into other applications, most of which either do not provide good color control, are GUI similar to lightroom, or are only meant to handle a single frame at a time, and so not batch or motion picture oriented.
    - Pursuant to this batch processing goal, rawtoaces should provide this tooling in a manner that is able to be run on a farm (i.e. in OpenCue) with few arguments other than central configuration and the files to process, and where to put the output
  - https://github.com/ampas/rawtoaces Rawtoaces is a project started within the Academy to provide an OSS reference raw camera developer program that would take raw camera files (i.e. Canon .CR2) and output ACES compliant files, optionally using the ACES container reference implementation.
    - This project uses a publishable / recreatable mechanism to get spectral sensitivity data for cameras which is then applied in the conversion, which increases color accuracy

- - - The software tool never reached full maturity, and the original developer is no longer involved. As such, the code is interesting, but really the datasets and techniques are the primary value
  - Weta Digital has a similar in-house tool it uses for color reference photography developing as well as other sources such as mocap photo booth, high dynamic range (HDR) image merging, and IBL preparation. This provides improved color and physical light level calibration during the developing process. Similarly, it uses spectral sensitivity measurements for the calibration and related color processing. This is used to process hundreds of thousands of pictures annually at Weta. Some components of this use existing open source tools such as exiftool, rawspeed, lensfun, and exiv2. It is this core that will be extracted / combined, leaving the internal pipeline specific choices behind.
  - There are a number of components to the roadmap for this project:
    - Revive rawtoaces and rewrite, merge in, and otherwise combine as appropriate with the similar technology from Weta Digital.
    - Define a common dataset of spectral sensitivities that provide a good foundation for proper color handling across all cameras
      - More formally publish the capture mechanism to record this sensitivity data and publish it to the dataset
      - While AMPAS has a facility to capture this information, foster external capture and publishing to grow the dataset
    - Add a plug-in system that enables camera manufacturers to write to the plugin layer but still have their own camera SDKs that can be separately licensed to studios for developing against, in the hope that it encourages greater involvement on the part of camera manufacturers.
      - This includes motion picture and still cameras
      - Optionally enable the build system to compile these in to avoid runtime loading complexity
    - Provide a common place / reference implementation of how to extract camera metadata and put it into EXR and the ACES subset of files that enable more consistent carrying of data for downstream processing and archival
    - Provide a library that other wrapper tools such as OpenImageIO might use to access these developed frames directly, or provide a direct plugin there as appropriate
    - Longer term items:
      - Provide a landing place for lensfun if they need it

- - Provide a mechanism to share exiftool data with c++ such that this tool does not have to provide yet another data source for exif data.

- Please explain how this project is aligned with the mission of ASWF?
  - This will provide a tool and library that studios can use for color accurate conversion of reference photography. Further, it should improve the consistency, and perhaps the quality, of the metadata being stored in such developed images. This way, it furthers one of the original ACES goals of improved interchange. As such, while a small component of making a motion picture, seems to sit squarely in line with the mission of the ASWF.
  - The spectral sensitivity dataset to be provided will in itself be a useful reference for people who are analyzing imagery or otherwise looking to further improve how pictures are combined together to make a final motion picture.

- What is the project's license for code contributions and methodology for code contributions. ASWF maintains recommendations for contribution and licensing for hosted projects.
  - Following https://github.com/AcademySoftwareFoundation/aswf-sample-project
  - All the new code proposed would be under the Apache 2.0 license. Any code that is in the current rawtoaces project that is re-used will be re-licensed from the Academy open source license to Apache 2.0
  - The datasets will be re-licensed to conform with the recommended dataset creative commons license The existing code was Academy open source licensed.
  - The hard dependency on libraw will be broken, in favor of building a plugin-mechanism and / or configure time hard linking. This will enable people to dynamically use or not use particular components
- What tool or platform is utilized for source control (GitHub, etc.) and what is the location (e.g. URL)?
  - Github houses the existing rawtoaces project at ampas/rawtoaces
  - The Weta components are currently housed internally on gitlab

- What are the external dependencies of the project, and what are the licenses of those dependencies?

- - Current external software dependencies (subject to change during merging with Weta toolset) for rawtoaces
    - OpenEXR: modified BSD
    - CERES: BSD
    - Boost: BSL
    - Libraw: LGPL 2.1 (this will become an optional)
    - MD5 RSA
    - ACES container: Adobe OSS
  - Current build system: cmake
- What roles does the project have (e.g. maintainers, committers?) Who are the current core committers of the project, or which can a list of committers be found?
  - Alex Forsyth, AMPAS
  - Kimball Thurston, Weta Digital
  - Scott Dyer
  - Thomas Mansencal

- What mailing lists are currently used by the project?
  - ACES central, github issues

- What tool or platform is leveraged by the project for issue tracking?
  - Github issues / pull requests

- Does the project have a Core Infrastructure Initiative security best practices badge? Do you foresee any challenges obtaining one? (See: https://bestpractices.coreinfrastructure.org)
  - No current badge, do not foresee any challenges obtaining one

- What is the project's website? Is there a wiki?
  - Acescentral.org
  - github.com/ampas/rawtoaces

- What social media accounts are used by the project?
  - None currently

- What is the project's release methodology and cadence?
  - Ampas project dormant for 3 years

- ○ Weta project actively maintained internally, updated periodically to update to latest camera definitions, deployed as binary package to facility
- ○ Anticipate activating and using github actions to provide automated builds, deploy binaries using in-built publishing

- ● Are any trademarks, registered or unregistered, leveraged by the project? Have any trademark registrations been filed by the project or any third party anywhere in the world?
  - ○ None for the Weta components
  - ○ Once qualified, we may choose to use the ACES logo and branding