Color on the web CG teleconference

2022-10-10 @ 21:00 UTC

Attendees

- Pierre-Anthony Lemieux (meeting chair, CG co-chair)
- Chris Blume
- Chris Seeger
- Simon Thompson
- Chris Needham
- Chris Cameron
- Ken Russell (note taker)
- Lars Borg
- Rafael Cintron
- Reiner Fink
- Kelsey Gilbert

Administrative

Please carefully review CG rules/policies (https://www.w3.org/community/about/)

Please add your name to your GitHub user profile (https://github.com/settings/profile)

Calendar at:

- https://calendar.google.com/calendar/embed?src=nr9r5ibs0f4jcuebisd2lvie1s%40group.calendar.google.com&ctz=America%2FLos_Angeles
- https://calendar.google.com/calendar/ical/nr9r5ibs0f4jcuebisd2lvie1s%40group.calendar.google.com/public/basic.ics

Action items

Agenda items

HDR canvas PoC and specification progress

- https://ccameron-chromium.github.io/webgl-examples/canvas-hdr.html
- Uses the macOS built-in tone mapping, specifying things like max brightness.Tone-mapping, e.g of rec2100-hlg, is best left to the OS, who knows about the display characteristics. The implementation uses Reinhard curves in case the OS does not support tone-mapping.

- - ○ Display characteristics can be queried on some OSes
- Gamut mapping is in a separate patch, separate pass after tone mapping, in LAB space.
- critical to keep a stable graphic white when tonemapping
- delta between Chrome implementation and the specification?
  - mostly bugs
  - tew things missing from the spec: ImageData being uint16 or float32 - nice feature to have
  - implementation can specify 2D canvas to be float16 rather than uint8. Is this needed in the specification? Concerned about scope creep knowing that smaller specifications are easier to land into HTML specs.
- Please try the prototype implementation

HDR in PNG update

- First public working draft is ready
  - Includes animated PNG and HDR color signaling (cICP chunk)
- CICP signaling for HDR imagery is available both in the PNG cICP chunk and within ICC v4.4 profiles, which can be embedded in PNG
  - https://www.color.org/specification/ICC.1-2022-05.pdf

9.2.17 cicpTag

Tag signature: 'cicp' (63696370h)

Permitted tag type: cicpType

This tag defines Coding-Independent Code Points (CICP) for video signal type identification.

The colour encoding specified by the CICP tag content shall be equivalent to the data colour space encoding represented by this ICC profile.

NOTE The ICC colour transform cannot match every possible rendering of a CICP colour encoding.

This tag may be present when the data colour space in the profile header is RGB, YCbCr, or XYZ, and the profile class in the profile header is Input or Display. The tag shall not be present for other data colour spaces or profile classes indicated in the profile header.

- ICC profiles have been used to offer a (inaccurate) fallback for SDR PNG viewers that do not understand cICP or equivalent HDR color signaling.
- PNG specifies that cICP should take precedence over ICC profile when determining pixel colorspace
  - Consider adding cICP support to qCMS (https://github.com/FirefoxGraphics/qcms)
- There is no ST 2086 metadata in PNG and/or ICC

Next meeting

Meeting usually on Mondays around 21:00 or 22:00 UTC depending on time of year

Next meeting: 2200 UTC on Nov 7

- Canvas will be discussed in the second half of the meeting