

RAG Analysis of HDR Transform Progress

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Design criteria

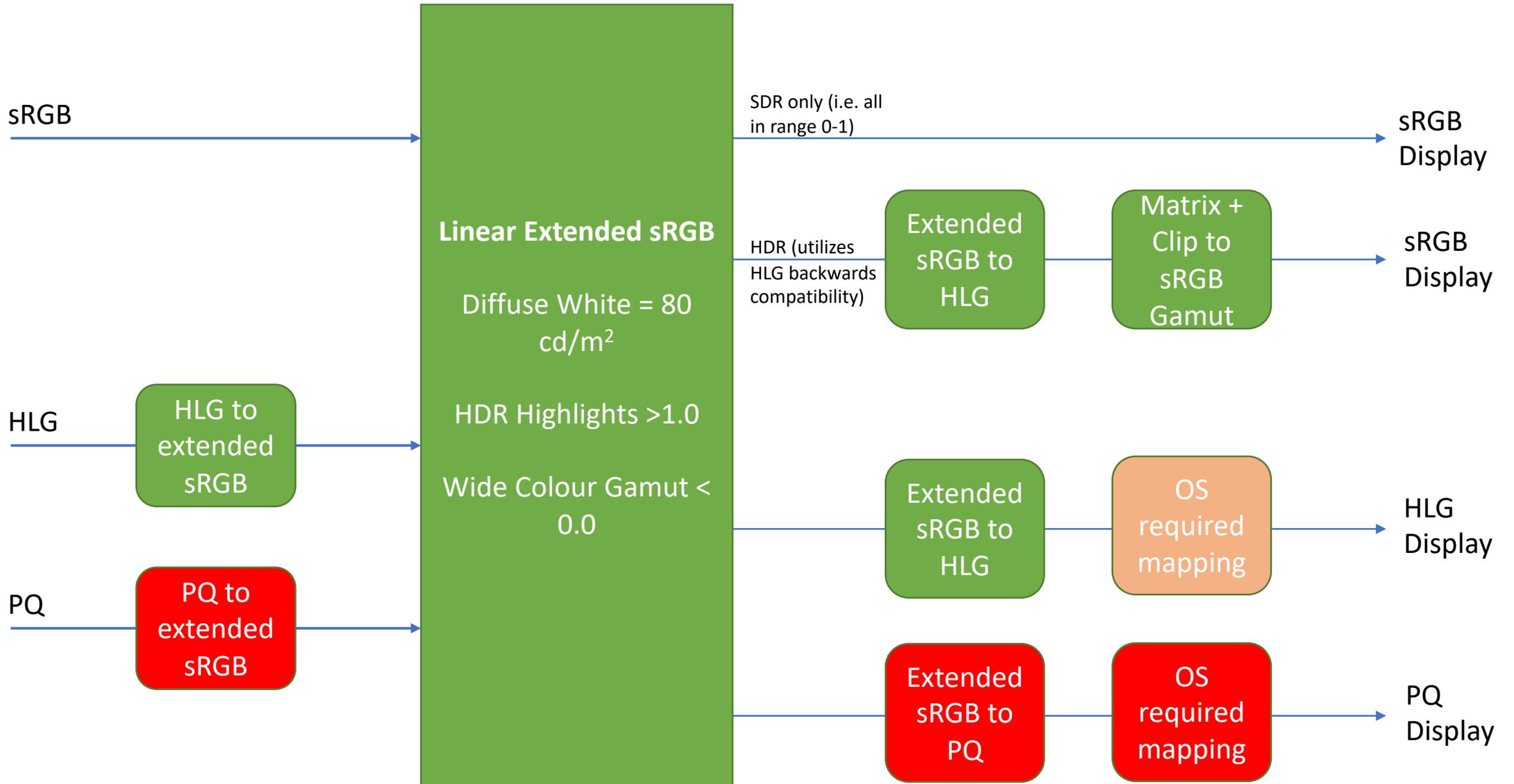
- HTML will need to be able to composite multiple input formats (sRGB, HLG, PQ) to any display (sRGB, HLG, PQ)
- sRGB, PQ and HLG have different interpretations of the value 1.0
 - sRGB = 80 cd/m²
 - HLG = Monitor nominal peak luminance
 - PQ = 10,000 cd/m²
- Most software is designed to work with sRGB, and end users will want to continue to use similar techniques and input values for fades, blends etc.

OS Criteria

- Windows has a user operated slider that chooses the absolute diffuse white level of a display.
- Software, such as browsers, is required to conform all output to this diffuse white level.
- macOS is more flexible, further work required with Apple.
- Linux??? Work required to understand X and Wayland.

Design so far

- The working space is extended sRGB
 - Linear
 - Values allowed outside range 0-1
 - Below 0 gives a wider colour gamut
 - Above 1 gives HDR highlights
 - Spec. says diffuse white is 80 cd/m²
- Example code required for
 - PQ and HLG to Working Space
 - Working Space with signals outside 0-1 range to sRGB display
 - Working Space to HLG and PQ displays
- Example code is JavaScript
- Minimal Viable Product (allows individual innovations)
 - e.g. 2020 to sRGB gamut conversion is a basic matrix + clip in example.



To Do:

- PQ to Working Space
- Working Space to PQ Display
- OS Required Mapping
 - Windows (PQ)
 - macOS
 - Linux

Github Link

- <https://github.com/w3c/ColorWeb-CG/pull/66>