



Current plans for HDR in PDF

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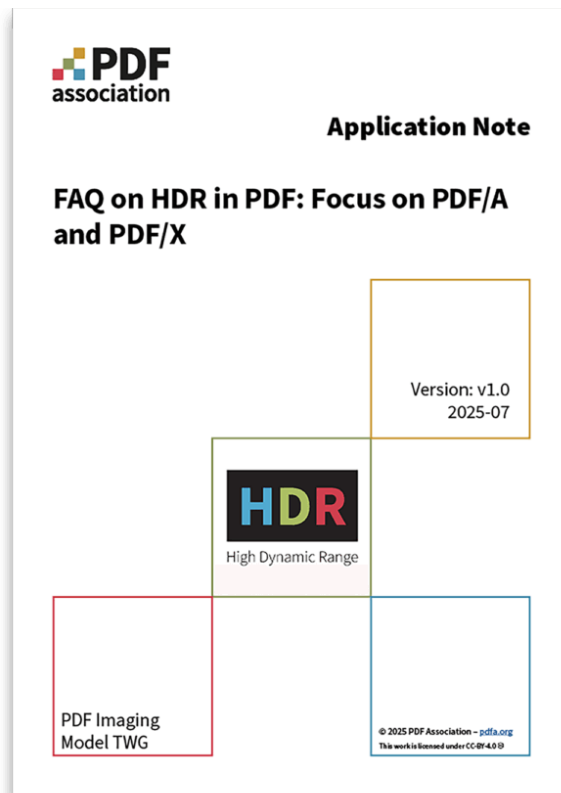
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Today

- PDFs may already have HDR information
 - HDR tags in JPEG 1 or JPEG2000 images
 - ICC profiles
(cicpTags eg. in image source profiles)
- Rendering will normally ignore HDR, prohibited in PDF/A and PDF/X
- New (July 2025) Application Note
“FAQ on HDR in PDF:
Focus on PDF/A and PDF/X”



PDF Association - Imaging model TWG

Evaluates new technologies

- Image formats
- HDR
- N-channel and transparency
(spot colors as process colors)
- Variable width fonts
- ...

Breaking PDF – when and how often?

Questions related to HDR in PDF

1. New PDF data structures
2. HDR for vector graphics, subset standards
3. HDR, CMYK and transparency

Questions (1 of 3): New PDF data structures?

- Will HDR in PDF fully rely on data structures in image formats or will there be new PDF structures or both?
 - Gain maps
 - cicpTag data
 - Adaptive gain curve

- If there are new PDF structures:
 - Where?
 - Which has priority if there is both?

Questions (2 of 3): HDR for vector, subset standards

- Will there be support for HDR for vector graphics and text?
 - => Otherwise white text in front of an HDR image will appear gray.
 - => Can we just rely on HDR in ICC or do we need PDF structures?
- What to do in subset standards (PDF/A, PDF/X) that guarantee consistent device independent rendering?
 - => That is conceptually different in HDR. Limit to SDR?

Questions (3 of 3): HDR, CMYK and transparency

- What is with HDR and CMYK?
 - Special case: Backlit print
=> Do we need HDR for CMYK?
 - What happens with implicit HDR to CMYK conversions?
Eg with a CMYK Output Intent?
- What is with transparency and HDR?
 - How will the transparency algorithms for blend modes be adjusted?
When HDR images overlap with a certain blend mode.
 - Can there be cascading HDR conversions?
HDR image with a gain map in a transparency group with an HDR blend color space.
 - CMYK transparency blend color space
HDR image is transparent in front of a CMYK background

Possible roadmap

1. Specify rendering for HDR in JPEG 1, JPEG2000, (JPEG XL) and ICC Profiles
 - Subset standards could control HDR support via Output Intent structures
2. Specify HDR data structures in PDF for vector graphics and text
 - A Color Space resource could cover Adaptive Gain Curve
 - The Extended Graphics State or images could cover Gain Map (similar to soft masks)
3. Resolve transparency questions
 - Constant alpha, soft masks, blend modes
 - Blend color spaces with HDR