D5.5 Personalization for viewer preference and numerical optimization for Visualization

Grant Agreement nr	761544
Project acronym	HDR4EU
Project start date (duration)	July 1st 2017 (36 months)
Document due:	31/03/2020
Actual delivery date	25/03/2020
Leader	UPF
Reply to	marcelo.bertalmio@upf.edu
Document status	Submission version

Project funded by H2020 from the European Commission

Project ref. no.	761544
Project acronym	HDR4EU
Project full title	Enabling End-to-End HDR Ecosystem
Document name	Personalization for viewer preference and numerical optimization for Visualization
Security (distribution level)	Confidential
Contractual date of delivery	31/03/2020
Actual date of delivery	31/03/2020
Deliverable name	D5.5 Personalization for viewer preference and numerical optimization for Visualization
Type	Report
Status & version	Submission Version
Number of pages	36
WP / Task responsible	UPF
Other contributors	-
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Abstract	This deliverable presents a color management pipeline which can be used to translate image appearance between viewing scenarios which differ with regard to various perceptually impactful parameters.
Keywords	Color management, chromatic adaptation, inverse tone mapping, gamut mapping
Sent to peer reviewer	Yes
Peer review completed	Yes
Circulated to partners	No
Read by partners	No
Mgt. Board approval	No

Document History

Version and date	**Reason for Change**
1.0 27-02-2020	Document created by Trevor Canham
1.1 15-03-2020	Version for internal review
1.2 25-03-2020	Revisions in response to review: final version submitted to Commission

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1 EXECUTIVE SUMMARY

This deliverable presents a color management pipeline which can be used to translate image appearance between viewing scenarios which differ with regard to various perceptually impactful parameters. This pipeline is derived as a combination of a number of direct translation methods, each having been independently validated for converting between image representations which differ for a particular viewing condition parameter (viewer physiology, display spectral power distribution, size/viewing angle, dynamic range, color gamut, and ambient illumination color and luminance). The following deliverable will summarize the independent research efforts undertaken to derive each method, and then a preliminary architecture is presented, showing how all of the methods can be used in conjunction in a way which complies with our current understanding of how their physiological analogues are ordered in the visual pathway. The modularity of the architecture is highlighted, and a discussion is given on how it can be useful in the greater context of color management/color appearance and vision modelling. Finally, a discussion will be given on how the methods can be computationally simplified to promote real-time model performance for motion picture scenarios.