



D5.4 Real-time SDR to HDR conversion in a generic viewing environment



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1 EXECUTIVE SUMMARY

The introduction of HDR and WCG capable displays has created a large market for remastering pre-existing content, as display manufacturers want consumers to have as much content as possible with which to utilize these features. Generally speaking, these up conversion processes involve a re-distribution of the tone scale (inverse tone mapping) and an expansion of the original image color gamut (gamut mapping). At the moment this is a task that is for the most part done manually with the help of semi-automatic tools and has become a great burden of resources for those involved in post-production. For this reason, fully automatic inverse tone mapping and gamut mapping algorithms have been proposed at UPF. In this deliverable, a full formulation of the proposed inverse tone mapping model will be explained, as well as a series of experiments in which the model was optimized and validated by industry professionals in a post-production context. Additional methods for gamut mapping and viewing condition adaptation will be explained along with their validation procedures. Finally, a practical implementation of the methods in conjunction will be detailed.