



D5.1 Initial Report on Environment Adaptation



sauce

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Abstract	<p>A key element that will allow for the reuse of smart assets will be tools which can transform between the many varieties of assets that fall under the wide net of creative media production. While there are many such transforms which have already been developed and successfully implemented in various production software packages, many incompatibilities exist between assets. This often results in unnecessary manual labor for the production to make new assets or convert older ones through some manual process. For transforming assets between different color representations, gamut and tone mapping methods are in development. For the purpose of personalizing assets to the display, viewing conditions, and perceptual behavior of the observer, methods for determining optimal system gamma, compensating for induction effects, and correcting for inter-observer perceptual variability are also being researched.</p>
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1 EXECUTIVE SUMMARY

A key element that will allow for the reuse of smart assets will be tools which can transform between the many varieties of assets that fall under the wide net of creative media production. From standard 2D images of real scenes to motion capture data in a virtual space, the many asset types that are being used in creative industries today have vastly different use contexts and compatibilities. Even when the scope is limited to a single type of asset - a 3D character model for example - there are still numerous variations on how data can be stored and represented. While there are many such transforms which have already been developed and successfully implemented in various production software packages, many incompatibilities exist between assets. This often results in unnecessary manual labor for the production to make new assets or convert older ones through some manual process. For this reason, a series of transforms must be developed to allow for content of different types and renditions to be automatically related to one another. Ultimately these will allow smart assets to become more versatile and applicable to different production contexts. For transforming assets between different color representations, gamut and tone mapping methods are in development. For the purpose of personalizing assets to the display, viewing conditions, and perceptual behavior of the observer, methods for determining optimal system gamma, compensating for induction effects, and correcting for inter-observer perceptual variability are also being researched. Finally, color pipeline utilities for the color stabilization and photorealistic color grading style transfer of assets are being improved and refined for workflow implementation. For the remainder of this document, technical summaries of these transformations will be presented, as well as a framework for implementing the transforms in the context of a smart asset database.