

ABSTRACT

DISPLAY MANAGEMENT FOR HIGH DYNAMIC RANGE VIDEO

A display management processor receives an input image with enhanced dynamic range to be displayed on a target display which has a different dynamic range than a reference display. The input image is first transformed into a perceptually-quantized (PQ) color space, preferably the IPT-PQ color space. A color volume mapping function, which includes an adaptive tone-mapping function and an adaptive gamut mapping function, generates a mapped image. A detail-preservation step is applied to the intensity component of the mapped image to generate a final mapped image with a filtered tone-mapped intensity image. The final mapped image is then translated back to the display's preferred color space. Examples of the adaptive tone mapping and gamut mapping functions are provided.

Fig. 1