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WAVELET BASED COLOR IMAGE WATERMARKING

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ABSTRACT

A good quality watermarking scheme should have maximum PSNR, ideally Correlation Factor equals to 1and should have maximum watermark information hiding capacity. In this paper,copyright protection is proposed for a new colour image watermarking scheme. It is based on embedding multiple watermark bits into the luminance component or the blue component of a colour image in discrete wavelet domain. The intend scheme uses image normalization technique to reduce the effect of synchronization errors caused by geometric attacks. The extraction process does not require the original image. The scrambled watermark is embedded in middle frequency sub band. The security levels are increased by generating PN sequence which is depending on periodicity of watermark image. The image scrambling is applied by using Arnold Transform. The decomposition is done with the help of 'Haar' which is simple, symmetric and orthogonal wavelet and the direct weighting factor is used in watermark embedding and extraction process. The scheme results in exact recovery of watermark with standard database images of size 512x512, giving Correlation Factor equals to 1. The PSNR with weighting factor 0.02 is up to 48.51 dBs. The presented scheme is non blind and embeds binary watermark of 64x64 size.

KEYWORDS: Watermarking, Color Image, Wavelet Domain, Normalization, Geometric Attacks, Discrete Wavelet Transform, Scrambling, Color Space