DIGITAL WATERMARKING ON GRAPHIC IMAGE BY WAVELET-BASED FUSION METHOD

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A limited amount of information can be embedded into graphic images since they contain more smooth areas than natural images. That is, embedding a high-detail watermark image like most of Thai organization's logos into graphic original image without degrading the quality of the original image is very difficult. In this paper, we investigate the invisible and robust performance of our digital watermarking technique based on the wavelet-based fusion algorithm for embedding a high-detailed gray scale watermark image into 24-bit color Thai graphic images. The experiments are performed on sixty Thai graphic images which are categorized into three shades of color: red, green, and blue. (20 images per each color). The results indicate that our algorithm has the average of 33% PSNR with no significant difference between each shade of color. However, images having red and green color are more robust to the attacking than image having blue color.