Abstract

Fidelity of image and robustness of data in watermarking have always been the considerations in the development of watermarking techniques. In this final project entitled *Optimalisasi Teknik Watermarking menggunakan Discrete Wavelet Transform (DWT) pada citra digital,* a watermarking technique on digital image is developed by means of transforming RGB color space into YCbCr color space, and then segmenting the luminance channel produced by the transformation using K-means algorithm before the watermarking with Discrete Wavelet Transform in conducted. The development of such technique is based on a problem whether the transformation of color space and image segmentation affect the fidelity and robustness of the watermarked image.

From the analysis conducted by the writer, it is found out that this watermarking technique, based on the PSNR value, does not produce images with better fidelity than other techniques can produce. However, the PSNR value showed that the robustness of the data is better. Thus, by means of image segmentation using the luminance channel and Discrete Wavelet Transform, the watermarking technique on digital image can be optimalized in terms of the robustness of the watermarked data.

Keywords: *Watermarking, Discrete Wavelet Transform, Luminance. K-Means.*