ABSTRACT

The growing development of information technology makes the internet a necessity in the exchange of digital information. Telemedicine utilizes the advancement of telecommunications technology to exchange healt information or the result of a patient's diagnosis regardless of place and time limits. Data from diagnosis and data on patients transmitted through the internet have gaps that can be used by irresponsible people. Therefore we need a watermarking on medical images to maintain patient privacy and be safer from theft or abuse by irresponsible people.

In this final project, a medical image watermarking process which is inserted into the patient's data in form of two image using Discrete Cosine Transform (DCT), Discrete Wavelet Transform (DWT), and Single Value Decomposition (SVD). There is also a testing cheme for medical images that have been inserted with a watermark to determine the resistance of the watermark. The insertion process is done by combining the singular value of SVD results into DCT-DWT coefficient in the original image.

The result of the final assigment is a medical image that has gone through a watermarking process using DCT-DWT and SVD methods and testing using several types of attacks and compare with DWT-SVD method. DCT-DWT-SVD method is more robustness from noise salt and pepper, jpeg compression, and rotation than DWT-SVD method. From the test, DCT-DWT-SVD method has the PSNR value is 38,7244 dB, the BER value is 0,0516 and the SSIM value is 0,9802

Keywords: *Watermarking, Discrete Cosine Transform, Discrete Wavelet Transform, Single Value Decomposition*