ABSTRACT

Ease to access multimedia data causing needed a security system which can pacify the information from unconcerned sides. One of digital processing method for the security of digital data is digital watermarking. Digital watermarking is one of way to protect intellectual property of multimedia products by inserting digital watermark into the multimedia data. Blind watermarking is watermarking process where doesn't need original image at extraction process to get the insertion watermark.

This final project show a simulation of blind watermarking method in luminance channel at digital image by using wavelet transform. Luminance Channel obtained from color conversion of RGB which is later used to get spreading ratio of change value at subband. Besides, to strengthen hiding technique and also improve security, watermark data must randomize before inserted. It is conducted by using random number pattern which awakened with algorithm of pseudorandom number generator (PRNG).

After using objective and subjective measurement, finally concluded that wavelet method have shown good performance in blind image watermarking technique. This conclusion is based on fact that watermarked image had mean of PSNR more than 40dB and have value of MOS mean 4,8. Watermark extraction has good enough sensitivity level to information loose at watermarked image by attack. Besides, watermark also has good enough in robustness to Gaussian noise, JPEG compression and rescaling, so it can be use for authentication, but it still have a weak is susceptible from rotation attack.

Keywords : *Digital image, blind watermarking, luminance channel, PRNG, watermark, attack, wavelet*.