ABSTRACT

Currently the rampant pengcopyan and distribution of digital audio files illegally occurred because of the support of the number of audio recording and editing software. Of course the copyright holder is reduced because of the duplication effort, because the problem is needed watermarking techniques. Watermarking is a watermark embedding in digital data so it can protect copyright. Therefore the owner of the information will feel more secure when sending an information, without having to worry about damage to information or data sent. Watermarks can be logos, signatures or audio.

In this research audio watermarking using Discrete Wavelet Transform (DWT) and Fast Fourier Transform (FFT) method using image as watermark on audio, so this watermark has resistance to compression attack, LPF, and Resampling. This research adds Genetic Algorithm method (AG) that is method to find the optimum value on each parameter of insertion, so that AG method can give best parameter in terms of Payload, Robustness, and Transparency.

This research will show the result that AG can determine the proper insertion location so it has good resistance to LPF attack, resampling, and MP3 compression. The end result of this final project is to protect the inserted data to stay safe without any damage after being attacked. The parameters used to test the audio quality are Nframe = 512, N = 4, Nbit = 4, thr = 0.07 and Bit = 32. With the result obtained is BER=0.3, ODG=-0.9578, SNR=26.95273.

keywords *: Audio Watermarking, Discrete Wavelet Transform (DWT), Fast Fourier Transform (FFT), Genetic Algorithms (GA)*