ABSTRACT

Exchange, dissemination, duplication, as well as data manipulation easier in this digital era. Having considered this circumstance, protecting the copyright of multimedia files has become an important topic. One of way that used by researchers is watermarking.

In this research, we design an audio watermarking sistem audio watermarking based on Discrete Wavelet Transform (DWT) with Hybrid Discrete Cosine Transform (DCT), Statistical Mean Manipulation (SMM) dan Quantization Index Modulation (QIM). the design of an audio watermarking system will use the discrete Wavelet Transform (DWT) method that decompose the signal into low and high frequency subband. Discrete Cosine Transform (DCT) will convert the low frequency subband signal from time domain to frequency. Then do embedding process using Quantization Index Modulation (QIM) in low frequency subband and Statistical Mean Manipulation (SMM) in high frequency subband.

The result of this research shows this audio watermarking technique produce good resistance againts LPF, Resampling, Linear speed Change attack. Some of the host produce good resistance againts BPF, equalizer, echo, MP3 compression, MP4 compression. This technique showing good performane with having an average value of ODG= -3.75822., the SNR=33.51112 and the average value of BER= 0.141296347.

Key Word: Watermarking, Audio Watermarking, Discrete Cosine Transform, Statistical Mean Manipulation, Quantization Index Modulation, Discrete Wavelet Transform.