ABSTRACT

The freedom of exchanging digital data over the internet has led to widespread copyright infringement at the moment. Data such as Audio and Video are data that are vulnerable to irresponsible party attacks that can be acquired authenticity. Therefore, it is needed Watermarking technology that can protect the data in order to prevent unauthorized copyright infringement from the original data owner.

Audio watermarking is a technique of inserting data (identity) into the audio without affecting the quality of the audio. In the design of audio watermarking system will be applied two methods that are expected to provide better security, such as Stationary Wavelet Transform (SWT) and Statistical Mean Manipulation (SMM). SWT method is used to decompose the signal into low and high frequency, but between input and output are equal so SWT has good capacity. While SMM is used for embedding by counting the mean (average) host audio in 1 frame at a very low frequency so resistant to attacks that attack high frequency.

Audio watermarking in this study has good audio quality results with average value of SNR = 31.28944 dB, average value of ODG = -0.562474, and average value of MOS = 4.5. The embedded watermark proved to have good resistance to various attacks such as, low pass filter, resampling, time scale modification, linear speed change, pitch shifting, MP3 compression and MP4 compression by generating average value of BER = 0.11594 of all hosts audio used.

Keyword : Audio watermarking, Watermark, SWT, SMM