

ABSTRACT

The internet at this time acts as a communication medium that is very often used to convey information or data. The ease of access and dissemination causes all information to be out of control so it is difficult to distinguish someone's work is genuine or fake. One way to solve this problem is digital watermarking, to prevent copyright theft by hiding digital data in the form of multimedia data.

This Thesis, discusses the design of an audio watermarking system based on Stationary Wavelet Transform (SWT) with the Hybrid Statistical Mean Manipulation (SMM) and Spread Spectrum (SS) methods. The design of this audio watermarking system uses the decomposition of audio hosts by SWT to produce audio signals with low and high frequency subbands. The embedding process using the SMM method is an embedding process by calculating the average in the audio host signal in one frame and is used for low frequency subbands. While in the high frequency subband, the SS method is used, which is a method that inserts audio data with a randomized Pseudo Noise (PN) Sequence so that it is more difficult to detect.

The results of this Thesis, obtained the best parameter with a value of BER=0, SNR=32.7859 dB, MOS=4 and a capacity (C) of 172 bps. Based on the optimization results, attacks on all hosts using the best parameters were obtained the average value of BER 0.1254.

Keywords: *Audio Watermarking, Stationary Wavelet Transform, Statistical Mean Manipulation, Spread Spectrum, Pseudo Noise*