

ABSTRACT

Audio watermarking is an information embedding technique in the form of digital data into a host signal (media host) in the form of audio files. Embedded information can be either bit, text, image, or other audio files. The embedded information is not allowed to be detected by the human auditory system (HAS). The embedding is done by a certain method so that the embedded information can not be retrieved and removed easily, and does not interfere with the quality of the original audio file.

There have been several studies done on audio watermarking using various methods. This research will apply watermarking on audio files with adaptive Lifting Wavelet Transform method. In addition, the Cepstrum method is used for transformation within the frequency domain. Compressive Sampling method is used for taking data acquisition taking. As well as the addition of the sync bit to mark the start of placement of the embedded watermark. Matlab software is used to process watermarking and system design.

Research that has been done with these methods can produce watermarked audio that has good quality and robustness to various attacks. The quality of a good watermark audio can be seen from the Objective Difference Grade (ODG) value of -1.66 and the Signal to Noise Ratio (SNR) which has a value of 24.18 dB on all hosts that have been tested with various attacks. In addition, watermark data resistance could be categorized good with Bit Error Rate (BER) value of 0.25.

Keywords: *Audio Watermarking, Compressive Sampling, Lifting Wavelet Transform (LWT), Cepstrum, Synchronization.*