

## ABSTRACT

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Title : PERFORMANCE ON BASED LIFTING WAVELET TRANSFORM STEREO AUDIO WATERMARKING USING COMPRESSIVE SAMPLING AND SYNCHRONIZATION TECHNIQUE WITH EMPIRICAL MODE DECOMPOSITION METHOD.

The latest developments of digital information has play roles in the manipulation of multimedia data such as audio, images, text or video. Ease of access and duplicate the multimedia data has caused serious problems for the protection of copyright. Therefore the necessary technology to protect digital content to prevent copyright infringement. The potential solutions in the digital audio signal is marked with a key, invisible or not felt by human senses, but audio files remain secure against attack from Parties that want to destroy.

Watermarking is a way of concealing certain data/information into any other digital data. The data to be inserted is called watermark while digital data in audio called the host. The insertion of information into digital data is done in such a way so as not to damage the quality of the data disisipi. Data watermark must be extracted back and is similar to the original so as not to be detected by the senses of hearing human auditory system (HAS).

In this task use the technique of Compressive Sampling and synchronization on audio watermarking method with Empirical Mode Decomposition and wavelet lifting transform. Audio watermarking which has been designed to be performed an analysis of the good qualities that already give watermak analysis and robustness of watermark signal processing against attack. And used some parameters to evaluate the quality of the audio that terwatermark like see the value of SNR (Signal to Noise Ratio) or ODG. And resilience against attacks with the parameter value which the BER close to 0.

The result of this research shows that bit synchronization can determine the correct insertion position so as to produce good watermarking audio resistance on LPF attack, resampling, speed change, mp3 compression and delay. The optimum parameter is also able to improve the quality of watermarking audio by having an average value of SNR of 18.63, the average value of ODG is -3.66 and the average value of BER is 0.25.

*Key Words : Audio Watermark, Lifting Wavelet Transform, Compressive Sampling, Synchronization, Empirical Mode Decompositio*

