ABSTRACT

Increasingly advanced technology allows us to exchange information in the form of text, video, image, and sound. The exchanges with the more easily it easier also to modify it. Because of these problems to keep possession of the necessary digital data watermark techniques in a host data such as pictures, sounds and video. Watermark technique is very important because it protects multimedia ownership, copyright identification, user identification, determination of the authenticity and automated monitoring.

Watermarking is the embedding process information to one of the host-data such as pictures, sounds and video (image, audio, video) so that information (watermark) can then be extracted and detected such information for a variety of purposes including the prevention and control of the spread of digital data that is protected by copyright. This research will discuss system design watermarking method Discrete Wavelet Transform (DWT) and Echo Hiding. The implementation this research is also done using MATLAB software and test the BER parameter, MOS, test-bed and ambient mode (at level / certain distance).

From incorporation method Discrete Wavelet Transform (DWT) and Echo Hiding can be generated audio watermarking algorithm which is more resistant than the methods that separate good and the quality, capacity and robustness. BER value obtained at the time of the attack were given stereo to mono, noise, speed change, echo echo and equalizer with BER values < 0.05 and when the attack LPF, resampling and MP3 compression with BER values > 0.05. And the minimum BER values obtained in ambient mode scheme by 0.24

***Keywords**: Watermarking, Audio Watermarking, DWT, Echo Hiding, Ambient mode.*