

ABSTRACT

The development of information technology and the rapid require users to be more careful because of cyber crime is also increasing. Many people who have developed a variety of techniques of protection of digital data, one of the technique is watermarking. Watermarking technology serves to provide an identity, protect, or marking of digital data, either audio, image, or video. However, these techniques can still be hacked by people who are not responsible.

Therefore, it takes an effort to protect digital data. In this research, will be applied to removable watermarking scheme, using the digital audio data as an host audio for the audible watermarking that can be heard by the human sense of hearing (perceptible). It is intended that the audio data can be protected openly so that if there are others who want to get the digital audio data must have a "key" to remove the watermark.

This process is performed on the data that already known watermark insertion method, namely frequency hopping spread spectrum, so that the watermark can be removed so the quality of audio after the watermark is removed the better. In the extraction process and the removal of watermark to use "lock" the same during the insertion process. Results of the audio without the watermark will match the original audio with minimal distortion value.

In this research, obtained a system that can remove watermark in watermarked audio and audio quality to be better, with the result of the measurement parameters as follows: the average value of SNR audio after watermak removed is 29,346 dB, MOS is 4.4026, and the average value of the audio PEAQ after watermak removed is -1,327, as well as audio quality improved after the watermark removed.

Keywords: *removable watermarking, audio, copyright protection, perceptible*