ABSTRACT

In this era, the development of technology is simpllify for human needs, especially in the field of technology and information. The accessibility to obtain some information generates a lot of hijacking case. Due to these hijacking case, a watermark technique is required. Watermark is a technique for embedding of data or information on digital media such as images, sounds and video. A watermark should be resistant to digitalization process, such as editing media, noising, blurring, etc. to be a good watermark, it must robust to attack, imperceptibility, and capacity.

In this final assignment performs a design and analysis synchronization on watermarking audio *stereo embedded byQuantization Index Modulation (QIM) with Discrete Sine Transform (DST) and Singular Value Decomposition (SVD) technique. First, the host* audio *will be read then the synchronization bit will be added and segmented. After that, the signal will be transform from time domain into frequency domain using DST method. Then, the matrix of DST will be decomposed by Singular Value Decomposition (SVD) into three matrices, that are U, S, and V matriks. After that, the host* audio *will be embed with watermark using QIM method.*

The results of this research obtained the best parameters without an attack with a value of BER = 0, SNR = 31.3473, ODG = -1.9098. For optimal parameters that have been done in the form of Low Pass Filter, Linear Speed Change, MP3 Compression, Resampling, and Delay on five different hosts generated average BER = 0.257. For best Parameters obtained on the host audio *guitar.wav with BER = 0, SNR = 25 dB, and ODG = -3.*

Key Words: *Watermarking, DST, SVD, QIM, SNR, BER, ODG, MOS.*