ABSTRACT

Growth of Information Technology, especially the digital information latterly experience of improvement rapidly. This improvement marked by many using and multimedia data distribution. Ease to access multimedia data causing needed a security system which can pacify the information from unconcerned sides. Various type of digital processing method for the security of various digital data types have been made available in this time.

Watermarking is one of way to protect the intellectual property of multimedia products (image/photo, audio, text, and video) by inserting information into the multimedia data. The insertion of information into multimedia data named as *watermark*, and watermark can be considered as digital signature or the digital cachet from valid owner for that multimedia product. Blind watermarking is one part of watermarking with its characteristic i.e. not being needed of image original at decoding process to see insertion message.

In this final assigment show simulation process and analysis performance watermarking technique in video MPEG by using *Discrete Wavelet Transform* (DWT) and XOR also scalling factor method for the embedding process and extraction process. Besides, to strengthen hiding technique and also improve security, frame of video must randomize before inserted to the watermark data.

Condition, that will be considered that anything are related with carrier video and embed video as data hiding, are kind of video application influence, size of video, number of video frames, location of hiding data in embedding and extracting system, and then robustness of video to any noise which is given such that *Noisse Gaussian*. More small value of MSE, then error numbers are less. In the contrary, more high value of PSNR, then quality product becomes better in steganograph system. Trying to get highest quality of embed video with minimum error, then MSE and PSNR have to be ≈ 0 and $\approx \infty$. In this final assigment,for embedding process, scalling factor method with 0.02 have PSNR 51.36 dB when condition with noise and PSNR 55.16 when condition without noise. In extraction process, scalling factor method with scale 0.1 have PSNR 22.74 when condition with noise and PSNR 22.27 when condition without noise. And also asses by subjective, MOS show average value 4.3 (fine category), nice to seen without troubles meaning.

Keyword : ***watermarking, DWT, embedding, extracting,MPEG***