ABSTRACT

The rapid development of technology and internet growth supports the need to access data and information exchange so it can be done quickly and accurately. Therefore the security and confidentiality of data is very important as the development of information exchange through digital media. To ensure the security and confidentiality of data, a technique to secure the data is required, one of the technique is steganography.

To overcome these problems, in this study steganography techniques will be combined with CS techniques. Implementation of the system is done by embedding a text message using Least Significant Bit (LSB) method on a grayscale image that is converted to Stationary Wavelet Transform (SWT) domain, then take one sub-band which is then converted into discrete domain Cosine Transform (DCT), also CS method implemented on stego-image for data efficiency when transmitted. Received data then reconstructed using Orthogonal Matching Pursuit (OMP) technique to get the information that has been embeded.

Based on several tests that have been carried out on the system, several performance results have been obtained with an average value including Peak Signal to Noise Ratio (PSNR) of 50.18 dB, Bit Error Rate (BER) 2.20 and Character Error Rate (CER) of 13.50 when testing without CS and the average Peak Signal to Noise Ratio (PSNR) of 35.40 dB, Bit Error Rate (BER) 36.78 and Character Error Rate (CER) of 76.50 when testing was done with CS.

***Keywords**: Steganography, Least Significant Bits, Discrete Cosine Transform, Compressive Sensing, Stego Image, Robust, Stationary Wavelet Transform, Orthogonal Matching Pursuit*