ABSTRACT

In this final project, several methods have been combined to strengthen and enhance the security side in the exchange process of the digital information or message. Some of the combined methods used are cryptography and steganography methods. Implementation of the built system is done by combining the application of *El-Gamal cryptography algorithm* in encrypting the message on application of the *image steganography* method in concealing the encrypted messages generated into a color image (RGB) on the *Discrete Cosine Transform* domain with the insertion technique of *Least Significant Bit*. Based on some tests that have been done on the system, the result of average performances score is showed by *Avalanche Effect* of 70.4828%, *Peak Signal to Noise Ratio* (PSNR) of 40.9554%, *Mean Opinion Score* (MOS) of 4,5024, *Bit Error Rate* (BER) and *Character Error Rate* (CER) of 0%.

Keyword : El-Gamal Cryptography Algorithm, Image Steganography, Discrete Cosine Transform, Least Significant Bit