ABSTRACT

The rapid development of technology as a means of exchange of information, must be balanced well with the security that ensure the preservation of information in it. In particular, image steganography need a good method that carrier in the form of images that have been inserted does not have a significant differences to the carrier origin and has a parameter value of image quality that good in terms of human vision that is seen from the MOS , SNR ,RMSE ,SSIM , BER and CER for text messages.

To meet that need, so now invented a method of inserting messages in this case bits of characters into the image on the spatial domain with the mapping insertion bits adjusting step horse (knight movement) in a game of chess and the insertion position of bit in a pixel adopt methods that already existed before, LSB (Least Significant Bits). With the wide range of possible pixels combined with the use of a key, it will be able to increase the number of possible pixel placement to a single bit of information that will protect the information from attack techniques of data collection were inserted for this method. Tests conducted with the insertion of text into 3 image carrier with the size 800 x 600 pixels in different characteristics.

From the simulation results for insertion of text in the image that has been done by the three keys that have been made, it was found that perfect MOS value obtained for all of the key. The best SNR, RMSE and SSIM generated by key = 1 and in terms of security, the best value taken from the key = 3 with a smallest probability value for the possibility of missing bits and the best BER value. From the generated parameters, the use of key in the L-Shape mapping effective to improve the security of secret messages, with trade-offs on the capacity side of the carrier when used key is greater.

Keywords: Chess Knight Movement, LSB, L-Shape