

## **New Block Grouping Technique In Cover Image Selection**

**Mohammad Othman Nassar , Feras Fares Al Mashagba, Eman Fares Al Mashagba**

In this paper a new block grouping technique called “horizontal block grouping technique” is proposed and tested against three main factors; first: its ability to minimize the detectability of the resulting stego image. Second: host image distortion. Third: the time needed to choose the best cover from a collection of cover images. To test and evaluate the new horizontal block grouping technique we used four existing dividing ideas to divide the cover and the secret images into blocks of different sizes; for each block and its surrounding areas we calculated the mean, variance, and skewness as statistical measures. The collected statistics about each block will be used to find its similarity compared to the other blocks. Our proposed horizontal block grouping technique idea is to group the secret and the cover images blocks in a way that allow us to measure the similarity of 256 blocks for the secret image as a one group; with 16 groups created for the cover image which contains 4096 blocks. At last; the most suitable cover image for each dividing method that uses our new horizontal block grouping technique is chosen to hide the secret image within the chosen cover image using the least significant bit (LSB) technique. Wavelet based domain (WBS) and Fisher Linear Discriminator (FLD) were used to assess the robustness against detectability for the stego image, also we used the Peak signal-to-noise ratio(PSNR) to compare between the four versions (each version is implemented using our new horizontal grouping technique) in maintaining minimum distortion in the host image. The results show that (4×2) blocking gives the best security and the best minimum distortion, and (1×4) was the fastest version.

Nassar, Mohammad Othman, Al Mashagba, Feras Fares, Al Mashagba, Eman Fares, (2015), New Block Grouping Technique In Cover Image Selection, European Journal of Scientific Research