Abstract

The use of digital medical image now is more widespread [8]. The medical image needs protection because it has the possibility of passing through an insecure network. Several watermarking techniques have been developed in order to guarantee the authenticity of digital medical images. In watermarking, medical images into objects to be protected. However, medical images can actually be a media for data hiding such as patient medical records. Data hiding is done by inserting data into an image or commonly referred as steganography in images. Because the conversion of medical image can affect the diagnosis, then steganography will be done only in the region of non-interest. Vector quantization (VQ) is a lossy data compression technique that is quite superior and frequently used. Several studies utilizing the Vector Quantization in steganography [18]. In general, Vector Quantization based steganography scheme still has shortcomings related to the capacity of data that can be inserted. This study aimed to create a steganography scheme based Vector Quantization and graph coloring. Since the graph coloring problem has a high complexity, Particel Swarm algorithm Opimization will be used to get a solution. The results show that this scheme can embed 28678 bits equal to 10077 characters for 3936 pixel sized image

Keywords : Steganography, Region of non-interest, Vector Quantization, Graph Coloring, Particel Swarm Opimization