

ABSTRACT

Medical data is the most important thing used in hospital as a representation of diagnosis from patient. Data security is a top priority because it is so secret that only certain people the content of the data. In Internet network used by almost everyone, data is difficult to deliver to particular party. Steganography is one of some techniques for data security ensuring that works by embedding data into certain media, such as images, videos, and documents. The final project is to produce a software-based tool to implement steganography in images.

Data and images preprocessing is performed consisting of converting Lempel-Ziv-Welch (LZW) compression result to bit and separating Region of non Interest (RONI) with Region of Interest (ROI) from a USG (Ultrasonography) images. ROI is the important part of USG that shows the condition inside the body, so data will be embedded in RONI. Building codebook is performed by using Linde-Buzo-Gray (LBG) algorithm as Vector Quantization reference in image compression. Data will be embedded in image block which is a part of refined graph, a refining of graph coloring which is using Genetic Algorithm which vertex is a representation of codeword in codebook, when images reconstructs.

The results show that data embedding using Vector Quantization and graph coloring using Genetic Algorithm give performance PSNR 27.8356 db and MHC 52056 bits that represents 4732 characters for image sized 576x760 pixel

Keyword : Steganography, Vector Quantization, Genetic Algorithm, Region of non-Interest