ABSTRACT

Steganography is a technique in communication system, where information is concealed into a carrier media, such us image, voice and video, without make significant changes to the cover media. Different from steganography which hiding information in plain sight, cryptography applications are used to encrypt information so that only the sender and recipient can understand it. Both of this techniques can be combined so that the information can be more difficult to breaked. This system is designed using image steganography with text file (.txt) as hiding information that was encrypted before using DES algorithm.

SSIS is using spread spectrum method, where information that will be embedded into cover image is spreaded whitin noise that has wide band frequency. This noise is added then to the cover image. To anticipate an error along transmittion proccess, SSIS using Error Control Coding (ECC) with convolutional encoder in transmitter and decoder using viterbi algorithm in receiver.

From this simulation I (for storage), imperceptibility level of stego image is confined by the number of embedded bit in every pixel of cover image. The image criteria is not determining imperceptibility level. In simulation II, maximum capacity determined by the size of cover image it self, code rate of convolutional encoder and level of quantization. Image criteria (low detail, medium detail, high detail), the size of text file, and the number of embedded bit in every pixel of cover image are the parameter that determine imperceptibility level of stego image in simulation II. MOS subjective values with 30 samples show that received image has high quality (fine category) in multipath fading+AWGN channel with SNR upper than 22 dB.