ABSTRACT

Nowadays, technology and information develop rapidly. People are able to access and send information easily. These facts may lead to a security system problem. Therefore, a steganography can be used to protect confidential data and information by concealing a certain message. This undergraduate thesis studies about the application of steganography on the image with a Portable Network graphics (PNG) format with spread spectrum method and analyzing the picture before and after message insertion by calculating the value of MSE and PSNR.

The word steganography comes from the Greek word *steganos* and *graphein* which means a concealed writing. Steganography is becoming the most important research topic in information security such as digital images, video, and audio. Steganography is the science or art of concealing messages in the picture so that the existence of a message is only known by the recipient and the sender of the message. The best results of MSE and PSNR obtained after testing were MSE = 0,000084 and PSNR = 89,2222 with the number of keyword characters and the same message character = 3 in 300x300 pixel image. The image quality before and after message insertion are measured by calculating the value of MSE and PSNR. A good MSE value is closer to zero, while a good PSNR score is above 40db (decibels).

Keyword: Steganography, spread spectrum, PNG, MSE, PSNR