Abstract

Nowadays steganography is widely used to hide important information. Steganography is a technique of hiding messages in digital media that aims to make the existence of the message is not recognized by anyone else except the intended person. Algorithm commonly used in steganography is the least significant bit (LSB), where bits in media were replaced directly with the message bits. This algorithm is quite simple yet easily detected. To increase security without compromising the ability of insertion then be made to the new scheme LSB-based steganographic using chaos method and particle swarm optimization (PSO). Chaos method has been widely used in watermarking and steganography, one of the simplest method of chaos is the logistic map, logistic map is used to shuffle the bits of the message before it is inserted, while PSO is a simple optimization method that has been widely used in a variety of optimization problems with good results. The nature of chaos on the logistic map led to the sensitivity of the initial value, therefore the initial value of logistic map were optimized using PSO with maximum objective function of PSNR (peak signal-to-noise ratio), so that security enhancements can be done without compromising the ability insertion. Research results using PSO and chaos method on LSB-based steganographic proved to be better than the simple LSB. This scheme can improve the security and insertion capability than the simple LSB.

Keywords: *Chaos Method*, *Least Significant Bit*, *Logistic Map*, *Particle Swarm Optimization*, *Steganography.*