

Abstract

Data security is an important issue in image as well as text data exchange. The time which is needed for securing images using encryption system is relatively high since the whole pixels should be encrypted. For decreasing the encryption time, partial encryption is proposed. The partial encryption will be implemented using RC4 encryption because RC4 needs relatively less encryption time. However, since the key length which is used for RC4 should be equal to the image size, then the key length should be long such that it is hard to remember by the users. Another method for generating the key is by repeating the short key until the repeated key length is equal to the key which is needed. This method will generate weak keys since the attacker may analyze the pattern of the key repetition. For overcoming this problem, Chaotic function is proposed to generate the key such that the key is rather random than just repeating the short key. Using the Chaotic function the level of key randomness is increased, which means the strength of encryption system will increase as well.

Key words: stream cipher, RC4, chaotic function, encryption.