

ABSTRACT

This dissertation concentrates upon developing an Image Cryptographic System (ICS) which provides different techniques for Encryption/Decryption of **digital image data**.

ICS is divided into three distinct models: **New Image Format** model which allows the user to change the input graphics/image file formats (TIF,BMP,PUT) to new format called (IMG) format. **Pseudo Random Number Generator** model which generates pseudo sequence as keystream used for encryption. **Image Cipher Techniques** model which is used to accomplish image file primitives such as load image, save image, and allows the user to implement different digital image Encryption/Decryption techniques. These techniques are based on the following concepts; Transposition cipher, Fast fourier transform, Stream cipher, Combined two of cipher techniques, Additive cipher.

The minimum requirements for the ICS work are an IBM-AT 286, an EGA Adapter, an EGA monitor, and MS-DOS Ver. 3.3. The programming language used to design the ICS was TURBO C Ver. 2.