Abstract

Internet is a public channel and security issues, such as modification, interception and sniffing normally exist. Steganography is a common security technique that is utilized to solve or reduce those problems. A large number of methods is used for implementing steganography; as least significant bits (LSB), discrete cosine transform (DCT), discrete Fourier transform (DFT), Spread Spectrum coding and Perceptual Masking. This paper proposes a random and sequential LSB to embed the secret message inside the color image. The linear congruent generator (LCG) is a random generator that is used with LSB to hide a stream of bits in a bitmap image (cover image) to give a new image (stego-image) comparable to the cover image. Secret key for random LSB is a combination of four parameters (Seed, Multiplier, Non-common factor, and Cycle length). The proposed method employees red, green or blue channel to hide the secret message. Selection of channel based on the modification rate for each channel. The minimum modified channel in cover image is utilized to embed the secret message. Results show that random LSB is better than Sequential LSB in term of visual effect while the worst in term of execution time. Random LSB satisfies sufficient security to secret message due to requirements for random function parameters in the extraction process.
A Novel Approach for Image Steganography using LCG

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Index Terms

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Keywords

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