**ABSTRACT** 

Nowadays, there are so many digressions in digital file, its because digital file is easy

to duplicate, and manipulate. One of solution for those problems is steganography technique.

Many method based steganography have attempted to provide better solutions. Plus

Minus 1 (PM 1) is one of embedding method in steganography. In this paper, PM 1 implement

adding/substracting 1 at non zero AC quantized DCT coefficient to change original value of

coefficient without affect the visual quality significantly.

In this paper, I have been designed and analyzed PM 1 steganography using genetic

algorithm for digital image. Genetic Algorithm (GA) is used to optimize performance, by

choosing proper PM 1 solution. Scaling factor at quantization process affect the two

conflicting requirements, capacity and robustness. For balancing those conflicting

requirements, scaling factor is set about 0,5. Gaussian noise was used for testing simulation

channel. Maximum value of noise variance allowed for extracting without error is 10<sup>-7</sup>. Any

addition over that level will crash the message.

**Keywords**: Steganography, Image, Plus Minus 1, Genetic Algorithm, DCT, Quantization

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