ABSTRACT

We are attempting to make a software that will take a bitmap format picture and hide the main object of the image in the background of the image. The real image can be obtained using an encryption key which will be known, only by the sender and receiver.

We are using counter shading technique to match the intensities of the pixels in the image. An image will be disintegrated into a large number of pixels. Each pixel has 4 bytes containing the CMYK values (Cyan, Magenta, Yellow and Key). We are interested in the value of K, for all the pixels. We will run an iteration operation to find the Key values of all the pixels, find the average value and then change the Key values of all the pixels to this average value. By doing so, the intensities of all the pixels will be the same and hence the object of the image will be hidden in the image itself.

From the user’s perspective, this software will be an image encryption software or a camouflage software. It will have a minimalistic user interface. This project has mainly been designed for communication of images between defence personnel. But it can also be used as an image encryption software. The user will just have to load a bitmap image to the software and he will get a camouflaged or encrypted image.

In counter shading the objects body will have two shades of color, upper half of the body will be of darker shade and low half of the body will have lighter shade.

When light falls from top, the upper half of the bodu gets lighter shade effect making it look similar to the shade in lower half of the body. Now by comparing the intensity of each pixel in the image and by making them almost equal we can hide the object in the image.