

DCT BASED DIGITAL IMAGE WATERMARKING AND DE-WATERMARKING FOR COPY RIGHT PROTECTION

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ABSTRACT

The purpose of this paper is to develop a copy right protection in image using Digital Image Watermarking. Basically, the watermarking is developed for copyright protection of multimedia content, intellectual property rights, prevention of unauthorized access etc. In this paper we proposing watermarking that will not only hide the information but produce better results for MSE. PSNR, Embedding capacity and Extracting Capacity.

Keywords: *Embedding watermark ,Extracting watermark,PSNR(Peak Signal to Noise Ratio) , MSE(Mean Square Error)*

I. INTRODUCTION

The use of internet growing faster day to day and the need to display multimedia contents on the internet become necessary. Intellectual property right; documents are not fast information but YouTube, face book, Torrents, pirate bay such other video, audio, image, documents resource websites are now became water and food for youngsters across the globe so it is necessary to protect the rights of authors. so digital protection is necessary and in-avoidable. There are many popular techniques for this such as Steganography, Digital signature, Fingerprinting, Cryptography and Digital watermarking but Digital watermarking is proved best out of them. Digital watermarking is nothing but the technology in which there is embedding of various information in digital content which we have to protect from illegal copying. This embedded information to protect the data is embedded as watermark. Beyond the copyright protection, Digital watermarking is having some other applications as Broadcast monitoring, Indexing, fingerprinting, owner identification, etc. Digital watermarks are of different types as robust, fragile, semi fragile, visible and invisible. Application is depending upon these watermarks classifications. There are some requirements of digital watermarks as integrity, robustness and complexity.

The intention of this project is to come out with a design of a prototype for three phase energy meter. The function of this prototype is to calculate measured power and energy with high accuracy. The objective of this prototype design of a three phase energy meter is to be at a low cost, high precision accuracy in measurement of energy and power.

II. PROPOSED WORK

The goal of this project is to analyze the performance of color channel for DCT-based watermarking scheme and to propose a robust algorithm which resists various attacks like JPEG Compression, Addition of Noise and Cropping attack.

- 1) To develop an intelligent watermarking technique for copyright protection.
- 2) To ensure that copyright information is not lost if an image is altered.

III. METHODOLOGY

Fig 1: Block diagram of Embedding Watermark

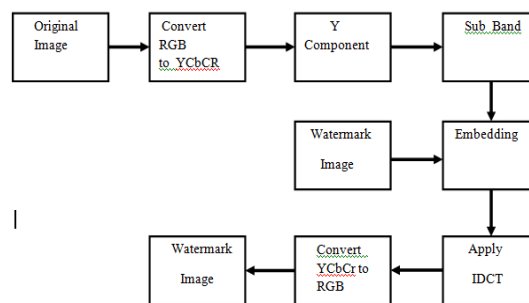
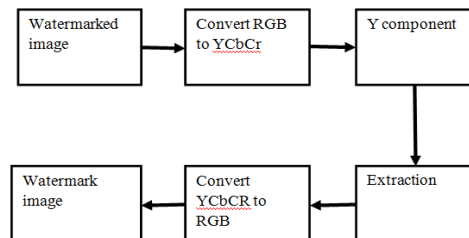


Fig 2: Block diagram of Extraction Watermark



IV. WORKING

Fig 1 shows block diagram of embedding watermark,

The Embedding is nothing but adding the sub component in any component.

The watermark embedding steps using this technique are following:

- 1) Read color original image.
- 2) Convert RGB to YCbCr component.
- 3) Separate the Y component only.
- 4) Apply DCT on Y component.
- 5) Embed the watermark image into the frequency sub component.
- 6) Apply IDCT on Embedding component.
- 7) Convert YCbCr to RGB.
- 8) Now we can get watermarked image.
- 9) We can check this watermarked image for Authentication.

Using this steps we can embed the watermark image into the original image, this process is known as embedding. It helps to improve the copyright protection of the cover image and robustness of the watermark in the watermarked image.

Fig. 2 shows block diagram of extraction watermark,

Extraction of watermark image from watermarked image is explained as follows and it is shown fig 2.

- 1) Read the watermarked image from output of Embedding process.
- 2) Convert the watermarked image i.e RGB to YCbCr component.
- 3) Apply DCT on YCbCr component.
- 4) Extract the watermark components from frequency subcomponent.
- 5) Then convert frequency sub component i.e YCbCr to RGB.
- 6) Get the watermark image from watermarked image.
- 7) Check authentication.
- 8) Calculate PSNR, MSE, SNR and NC.

V. FUTURE SCOPE

In our paper an efficient system for watermark embedding-extraction was proposed, but as it was mentioned before, everything strongly depends on the image contents.

VI. CONCLUSION

In this paper we presented a method of Embedding and Extracting watermark into colour image. The original image i.e RGB image is converted to YCbCr and watermarked by using discrete cosine transform (DCT). The luminance component Y of YCbCr image is considered for embedding watermark. This paper is very effective for watermarking and de watermarking authentication and also support more security.

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