Separable Reversible Data Hiding in Encrypted Images

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Abstract— As we all know that know a day's importance of reversible data hiding in encrypted images is growing because of its following advantages or called it as features like losslessly recovered after embedded data in extract while protecting the confidentiality of image content .All previous method developed for reversible data hiding have major flaw in it .or may be subjected to some error like restortation.The current method i.e. our purpose method give real reversibility without flaw in it. i.e. error free main dramatics features of purpose method which make it comparatively good among traditional one is that it can embed 10 times payload for same images quality as previous method.

Key words: Reversible Data Hiding, Image Encryption, Privacy Protection

I. INTRODUCTION

The reversible data hiding (RDH) in images is a method by which the original cover can be losslessly recovered after the embedded message is extracted. The real time application of our method is widely used in medical imagery, military imagery and law forensics, in which no distortion of the original cover is allowed. The methods mentioned above depend on spatial correlation of original image to extract data. i.e., the encrypted image should be deciphered first before data extraction. To separate the data extraction from image decryption emptied out space for data embedding following the idea of compressing encrypted images. Compression of encrypted data can be formulated as source coding with side information at the decoder, in which the typical method is to generate the compressed data in lossless manner by exploiting the syndromes of parity-check matrix of channel codes. In our paper, we propose a method for RDH in encrypted images, for which we do not "vacate room after encryption" as done in previous method but "reserve room before encryption". In the proposed method, we first empty out room by embedding LSBs of some pixels into other pixels with a traditional RDH method and then encrypt the image, so the positions of these LSBs in the encrypted image can be used to embed data. Not only does the proposed method separate data extraction from image decryption but also achieves excellent performance in two different types:

(1) Real reversibility is realized only when data extraction and image recovery are free of any error.

(2) For given embedding rates, the PSNRs of decrypted image containing the embedded data are significantly improved; and for the acceptable PSNR, the range of embedding rates is greatly enlarged.

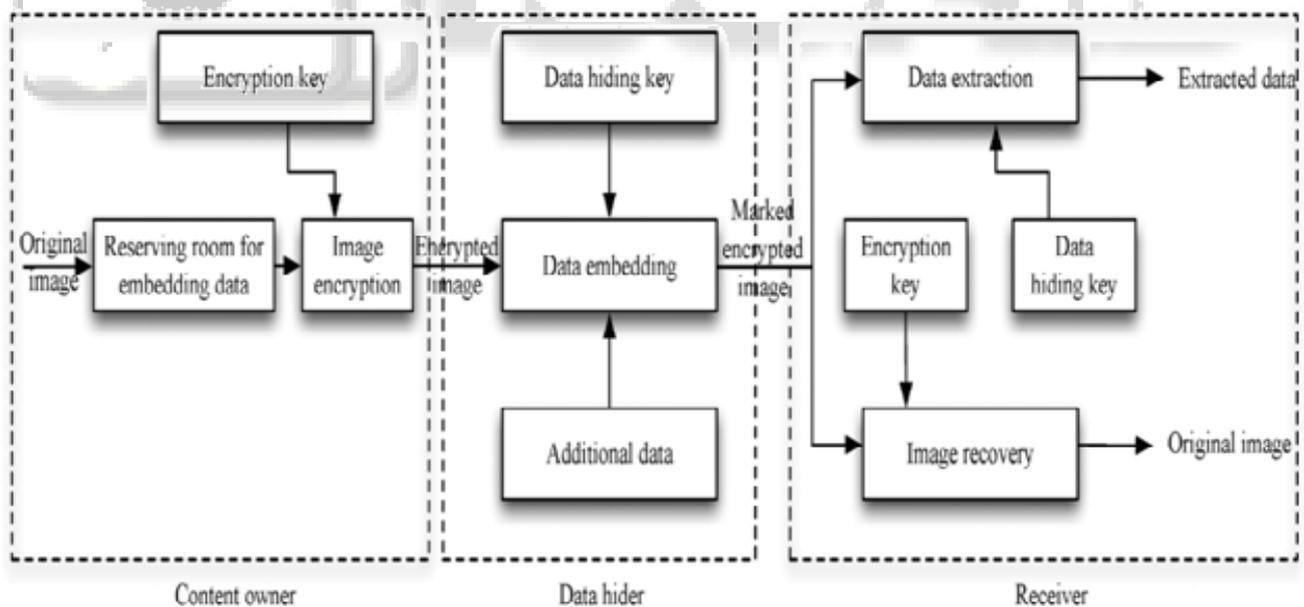## II. SYSTEM DESIGN

A. System Architecture:

Fig. 1: Reserving room before encryption framework

III. SYSTEM FEATURES

A. Encrypted Image Generation:

In this module, to construct the encrypted image, the first stage can be divided into three steps:

1) Image Partition:

The operator here for reserving room before encryption is a standard RDH technique, so the goal of image partition.

2) Self-Reversible Embedding:

The goal of self-reversible embedding is to embed the LSB-planes of into by employing traditional RDH algorithms. We

simplify the method in to demonstrate the process of self-embedding.

3) Data Hiding In Encrypted Image:

In this module, a content owner encrypts the original image using a standard cipher with an encryption key. After producing the encrypted image, the content owner hands over it to a data hider (e.g., a database manager) and the data hider can embed some auxiliary data into the encrypted image by losslessly vacating some room according to a data hiding key. Then a receiver, maybe the content owner himself or an authorized third party can extract the embedded data with the data hiding key and further recover the original image from the encrypted version according to the encryption key.

IV. CONCLUSION

Main objective of project is to provide the security while sending any important or secure data by encrypting images various online applications using the images. Project provides security to data which is encrypted in that using reversible data hiding encrypted images.

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