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A Implementation on Reversible Texture Steganography

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ABSTRACT

This project presents an effective solution to enhance the security of RSA scheme. The objective of this proposed method is to eliminate the redundant messages which occurred in some values of n, the product of two prime numbers, and this problem is considered as a weak point in the RSA method. The solution of this problem depends on replacement of this value of n using a secure agreement distance in a set of all available prime numbers. The next step is selecting either one of the primes responsible for generating an alternative n or both primes from that set. In this project introduced modified RSA approach based on multiple public keys and n prime number. RSA algorithm is mostly used in the popular implementation of public key cryptography. In public key cryptography two different keys are generated in RSA one keys is used in encryption data and other corresponding key used for decryption. No other key decrypt the data. Even if it is efficient algorithm it is vulnerable to other person. With the help of all brute force attacks can obtain private keys. In this research paper new approach we used in prime number and multiple public keys. Which is not easily crackable .In here implementation RSA algorithm. Using some mathematical logic integer factorization and discrete logarithm problem.

Keywords: Steganography, RSA, Cryptography.

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I. INTRODUCTION

This project presents an effective solution to enhance the security of RSA scheme. The objective of this proposed method is to eliminate the redundant messages which occurred in some values of n, the product of two prime numbers, and this problem is considered as a weak point in the RSA method. The solution of this problem depends on replacement of this value of n using a secure agreement distance in a set of all available prime numbers. The next step is selecting either one of the primes responsible for generating an alternative n or both primes from that set. In this project introduced modified RSA approach based on multiple public keys and n prime number. RSA algorithm is mostly used in the popular implementation of public key cryptography. In public key cryptography two different keys are generated in RSA one keys is used in encryption data and other corresponding key used for decryption. In this research paper new approach we used n prime number and multiple public keys. In here implementation RSA algorithm .Using some mathematical logic integer factorization and discrete logarithm problem.

II. LITERATURE SURVEY

Otori and Kuriyama [1], [2] pioneered the work of combining data coding with pixel-based texture synthesis. Secret messages to be concealed are encoded into colored dotted patterns and they are directly painted on a blank image. A pixel-based algorithm coats the rest of the pixels using the pixel-based texture synthesis method, thus camouflaging the existence of dotted patterns. To extract messages the printout of the stegno synthesized texture image is photographed before applying the data-detecting mechanism. The capacity provided by the method of Otori and Kuriyama depends on the number of the dotted patterns. However, their method had a small error rate of the message extraction.

Patch-based algorithms [3], [4] paste patches from a source texture instead of a pixel to synthesize textures. This

approach of Cohen et al. and Xu et al. improves the image quality of pixel-based synthetic textures because texture structures inside the patches are maintained. However, since patches are pasted with a small overlapped region during the synthetic process, one needs to make an effort to ensure that the patches agree with their neighbors.

Liang et al. [5] introduced the patch-based sampling strategy and used the feathering approach for the overlapped areas of adjacent patches.

Efros and Freeman [6] present a patch stitching approach called "image quilting". For every new patch to be synthesized and stitched, the algorithm first searches the source texture and chooses one candidate patch that satisfies the pre-defined error tolerance with respect to neighbors along the overlapped region. Next, a dynamic programming technique is adopted to disclose the minimum error path through the overlapped region. This declares an optimal boundary between the chosen candidate patch and the synthesized patch, producing visually plausible patch stitching.

Ni et al. [7] proposed an image reversible data hiding algorithm which can recover the cover image without any distortion from the stego image after the hidden data have been extracted. Histogram shifting is a preferred technique among existing approaches of reversible image data hiding because it can control the modification to pixels, thus limiting the embedding distortion, and it only requires a small size location map, thereby reducing the overhead encountered. The current state-of-the-art for reversible image data hiding is the general framework presented by Li et al. [8].

III. PROBLEM STATEMENT

In the today's era the internet provides communication between people and facilitates for electronic payment, military communication and many others. This cause a major concern for privacy, identify theft, security etc. cryptography is a standard way of secure the data over the media. The proposed modified RSA approach is used for system that provides more security but less speed compare to RSA algorithm and improving security and efficiency in data sharing over the network. In our future work we will implement it for advance research such as secure transmission of file, video file, image file, etc. this may perhaps our future research topic using hybrid data encryption and decryption approach.

IV. PROPOSED METHODOLOGY

The three fundamental differences between our proposed message-oriented texture synthesis and the conventional patch based texture synthesis are described in following: The first difference is the shape of the overlapped area. During the conventional synthesis process, an L-shape overlapped area is normally used to determine the similarity of every candidate patch. In contrast, the shape of the overlapped area in our algorithm varies because we have pasted source patches into the workbench. Consequently, our algorithm needs to provide more flexibility in order to cope with a number of variable shapes formed by the overlapped area.

In this paper, we propose a novel approach for steganography using reversible texture synthesis. A texture synthesis process re-samples a small texture image drawn by an artist or captured in a photograph in order to synthesize a new texture image with a similar local appearance and arbitrary size.

We weave the texture synthesis process into steganography concealing secret messages as well as the source texture. In particular, in contrast to using an existing cover image to hide messages, our algorithm conceals the source texture image and embeds secret messages through the process of texture synthesis. This allows us to extract the secret messages and the source texture from a stego synthetic texture.

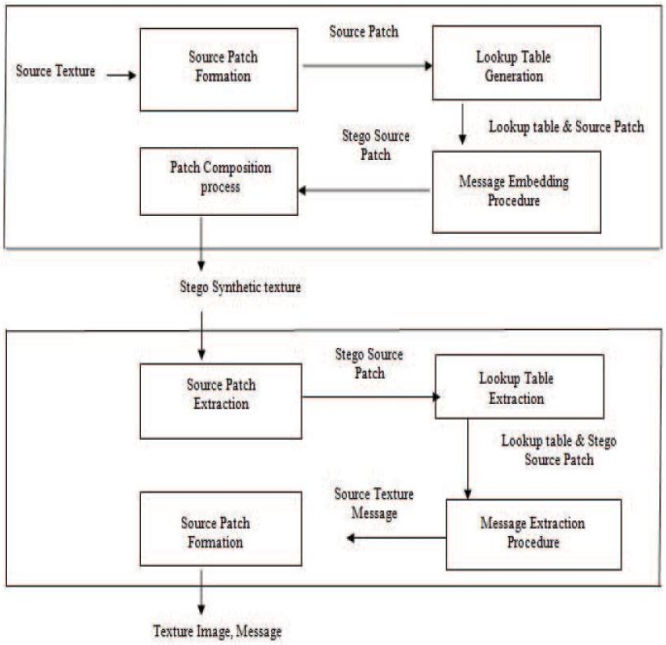
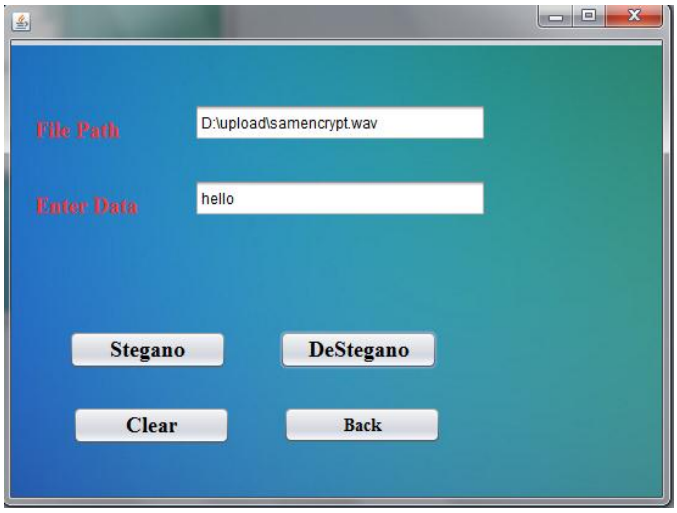
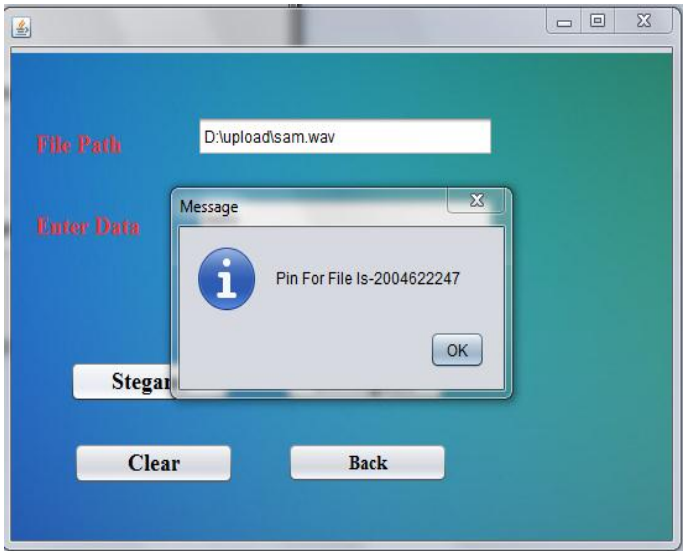


Fig 1. System architecture

V. RESULT





VI. CONCLUSION

With the proposed system we can embed the size of the image and provide high quality image which avoids the distortion of image quality which the existing system cannot. The proposed system is much more robust against any kind of attack and provide high degree of security to the confidential data hidden inside the image patches. The proposed system can be combined with other steganographic systems to provide high degree of security. With this system the message cannot be accessed by any person except the authorized person and who is having a secure key with him/her.

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