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Review on Data Hiding Using Visual Cryptography

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Abstract:*Data safety is needs of research for avoid the hacking. There are many research related to security reason is internet security, cryptography etc. Right authority provide authentication, hide the information for privacy is only managed by Visual cryptography scheme. This technique is basically used for military and medical field. Data hiding techniques covered the original image by encrypted form and it's decrypted for recovered original image without loss the information. Data securely put in host media deterioration little is occurred afterword data transfer securely. No complex computation need for recover the data by stacking both images. Hackers not awake to attention sharing of image. When correct key of image is use easily decrypted the original information. In this paper, review is proposed for increasing securely recovers information by images.*

Keywords **: VCS, EVCS, secret, halftoning, cryptography, embedded.**

1. INTRODUCTION

To study of VCS techniques, how to generate covers to the shares, Embed the VCS into covering images by improving visual quality and decrease storage space comparative than well-known EVCS. Also increase the flexibility of user with this system by using different user interface technique. Now a day the transmitting of data by computer network is increasing rapidly and security of data is very important problem. To provide the security for transmitted data we can used Cryptography. It consists of two main algorithms 1) Encryption algorithm and 2) Decryption Algorithm. Encryption algorithm is change to readable text (Plain Text) into unreadable text (Cipher Text).Decryption algorithm is opposite to encryption algorithm .Computation skilled is required for above process to recovered the secret image. Naor and Shamir [5] invented base of visual cryptography. Focused on sharing secret images this sharing scheme is known as VCS. A secret image divided two random shares no information reveals in the secret image. The secret image bounded when stacking share1 and share2. Information is hide in the image is called encrypted and by human vision easily decrypted when used correct key of image. Visual cryptography utile is for low computation. Conventional visualize secret sharing technique generates random pixel to conceal secret information. Dealers cannot each share visually identify reason is suffering management problem. This suffering management problem is change by meaningful cover image add in each share in extended visual cryptography scheme. Substitute EVCS for reduced system by Integrated Embedded visual cryptography scheme. When stacking subset of shares then secret image easily visualize and save original information in it.

2. EXISTING WORK

Feng Liu et al. Propose traditional visual cryptography. It called Integrated embedded visual cryptography scheme because random embedded share change into meaningful share. Visual cryptography approaches gray image which is converted into binary image this technique is halftoning by using dithering matrix. In paper two algorithms is used one is halftoning process and other is embedding process. Black and white pixel pattern acquire gray scale using the dithering matrices. Every pixel generate covering shares, covering subset reduces percentage of black and convert into dithering matrices then embedded visual cryptography into covering share. Second process, embedding it includes embedding of all shares and stacking of these shares, also improvement on the visual quality of the shares such as reducing the black ratio of the covering subsets. Many advantages of proposed embedded EVCS has against different well-known schemes, such as the fact that it can deal with gray-scale input images, expansion of smaller pixel is unconditional secure, one participant carry one share and complementary share images does not require, and can be assigned for general access structure. [1]

Mrs. Bhandare Shital et al. proposed split many number of shares of secret image. These split shares get embedded selected color area of Cyan, Magenta, Yellow,

Black shares of the meaningful image. EVCS applied on color image as a secrete image these gives contrast image very clean and recovered secret color image which is not in previous Embedded EVCS. [2]

Ch. Priyanka et al. proposed meaningful shares produced by color visual cryptography. When a meaningful share uses the attention of attacker will not arouse. Author produced two meaningful shares for cover cypher table and secret cypher table is used for proposed scheme using halftone technique. Also it uses color visual cryptography, gray scale halftone, visual cryptography with perfect restoration, color visual secret scheme. They provide three steps for implementation such as Interface design using Applet frame work, Embedded Visual cryptography Implementation**,** and Integration**.** Color secret image decompose into Cyan, Magenta and Yellow images by visual color method. Then used to translate above color images into halftone image by halftone technique and a color halftone image can be generated. Colors of expressed pixels from the secret image. Then produced colors need to match in the cypher table so that a suitable block occurred. They indicate shares images with good visual quality which one pixel converted 2×4 block However, the size of the share remains the same as what happens in the 2×2 pixel expansion case. This way, a considerable part of the storage space can be saved.[3]

Mr. A. Duraisamy et al**.** In halftone technique using Error Diffusion Method difficulty reduces when increase visual quality and convert multi level image into binary image. Although other application. This application was developed using java desktop application. The application featured with four sections. Each section performs the following functions such as Shares Creation, Covering Share Creation, Embedded VCS and Covering Shares and stacking. In visual cryptography shares the error values to nearer pixels by error diffusion technique. So that it makes the binary image to achieve some effect as gray image. It also enhances the edges of image. In OR operation computation is more but easily read the information in image. Much more security is provide for encrypted original image using a key to scheme. The key may be a text or small image. This technique is more effective in providing security from illicit attacks. [4]

3. Black and White Visual cryptography

The principle Visual Cryptography Scheme (VCS) was first invented by Naor and Shamir [5] in1995 .Image format coded binary image to shares ie,share1 and share2. In table shows the one full black pixel and share1 and share2 produced share1*share2. That means Secret image is only shows when lay over share1 and share2.This black and white scheme no need of cryptographical computation. Decoded of the image is lack of contrast balancing so reused cannot possible from recovered image.

Table -1: Naor and Shamir's scheme

Pixel	Probability	Share1	Share2	Share1*Share2
	50%			
	50%			
	50%			
	50%			

4. COLOR VISUAL CRYPTOGRAPHY

Before 1997 black and white scheme is used E. Verheuland H. V. Tilborg, [6] was first used color visual cryptography. One pixel converted m subset this subset no. of part into c color.one color region one of them and other is black.stacking of sub pixel is responsible for one color pixel. c× 3 m pixel exapansion in c colors. E. Verheuland H. V. Tilborg, [6] pixel exapansion change by Yang and Laih [7] into c× 2. its not useful for generating share in this two schemes. Chang and Tsai [8] generate and share colorful secret image using index table, equal size two secret color image used for hide the information but one fault in this scheme is more space required when using index table.

5. Multiple Secret Sharing

Wu and Chen [9] research two shares used for the generated two secret. In black and white scheme only one secret share at a time. Binary image (secret) two random share basically used. Random share called as A and B .when A⊗ B indicates then first secret and anticlock rotate A then second secret obtained. More than two secret proposed J Shyu et al [10] but secured at a time only two shares.

6. ANALYSIS OF VISUAL CRYPTOGRAPHY SCHEMES

Naor and Shamir [5] main focused on contrast and expansion original image. one pixel indicated when pixel expansion m with its sub pixel. They provided reduction of resolution in the original picture also white and black pixel responsible for change in contrast in original image. Jung-san Lee al. [11] concern on accuracy, pixel expansion, security complexity of computation only if no display information of original image of each share then security is satisfied. Quality of rebuild secret image valuated PSNR measure.

7. CONCLUSIONS

This paper review on different author introduced cryptography. Naor and Shamir first invented black and white cryptography scheme of pixel expansion four and number of image one. But contrast balancing is problem for image reused. Author used different technique halftoning using dithering matrix, Error diffusion technique, single pixel into 2×4 block, color visual cryptography.

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