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AN EFFECTIVE PICTURE COVERT ALLOCATION SCHEME WITH AUTOSTEREOGRAM

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ABSTRACT -Picture covert allocation scheme (PCAS) is a hide allocation method which decodes the secret by using the contrast capability of the human visual system. Auto stereogram is a single two dimensional (2D) image that changed into virtual three dimensional (3D) images while position with eye converges or variation. These two methods are combined via human visualization. In this paper presents a new picture covert allocation called (k n) PCA with auto stereogram. This work shares an auto stereogram stacking k-shares in which conceal image is recovered visually without several tools, but no secret information is received which fewer than k shares .These two methods are used to hide the given an image. In this hidden image decrypt by the receiver. The result of the decrypt image compared from original image give the high accuracy.

KEY WORDS: **picture covert allocation scheme, auto stereogram, covert image, fewer shares.**

I.INTRODUCTION

Pictures covert allocation (PCA) scheme is used to proposed only with black and white (binary) images. Many methods for grayscale images and for color images are used for futures. But, previous facility in a received image of reduced quality. In this method new gray-level visual cryptography scheme and the image quality in this proposed scheme is improved and provides high quality images as well as perfect (original) value to be reconstructed. The hidden image is based on Boolean operation and renewal operation uses OR, since further PCA schemes. Visual cryptography is a cryptographic technique which allows visual information to be encrypt. The encrypt information send to receiver. In decryption image becomes the work utilize someone to decrypt via sight reading. One of the best-known techniques has been recognized to Moni Naor and Adi Shamir, who developed it in 1994. visual cryptography can extend as (k, n) – threshold visual secret sharing scheme that divide n transparencies into covert information. It can be decoded must have k or more shares to stack. VC, a secret binary image is encoded into n shares of arbitrary binary patterns. The n shares are n transparencies allocated n provider and every one provider. No source knows the share given to another source. Any k or further providers can visually representation the secret image by envelop any k transparencies together. The secret cannot be decoded by any k-1 or fewer providers.

In the color visual cryptography developed in 1997. In the schemes produced to black and white images. In color VCS one pixel is changed into m sub pixels, and each sub pixel is additional divided into color regions. In each sub pixel, there is precisely one color region is color, and other color regions are black. The color of one pixel depends on the interrelations between the stacked sub pixels. In this paper used color cryptography techniques.

II. RELATED WORK

Sasikumar Yerramsetti [2]visual cryptography schemes which generate random and meaningless shares. This paper describe binocular VCS (2 ,n) BVCS and encryption algorithm is used. This algorithm to hide image shared pixels single image random stereogram (SIRDS). The encryption algorithm must used to construction rule. This construction rule produces Non pixel expansion shares of the VCS. This process used to the maximize contrast of the recover picture. To provide non expanded and high value secret image to reduce the risk of interception during the transmission risk.

R.K Sharma [3] suggests method of recursive information hiding images by random grids. This technique used to increase the information convey per bit shares. This process produced by the size of the shares. The method encrypts every one image random cipher grids. This technique produces the size of share in original image without any modification. The

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random cipher grids method give to conceal of image results (n, n) recursive hiding images.

Teng Guo[4] In this paper shows a new (k,n) TSISS technique. The previous research defect (k,n) sharing textual image and then fix up security defect AES encryption process. A new (k, n) TSISS is used for information only computational secure..This paper implemented computational security is used only secure purpose.

Wanli Dang[5] this presentation improve the quality of decrypt image. This paper XOR is also used. . In this paper executed by spilt the share image divide into two parts. Two parts are used in secret pixel, cover pixel.XOR operation is used to improve the visual quality in recovered image. This process is affect visually identify any one share.

III.PROPOSED WORK

To combine the PCAS and auto stereogram, there are two possible ways. The first process is an auto stereogram. In these process establish the relationship between auto stereogram to conceal a secret image securely, and at the same time these scheme keep up the 3D effect in each auto stereogram. The second process is used to add some 3D information into shares of a picture covert allocation scheme meantime to make certain the contrast of the recovered hide an image. Advantage is has better 3D effect and hiding accuracy is good. As fig. 1

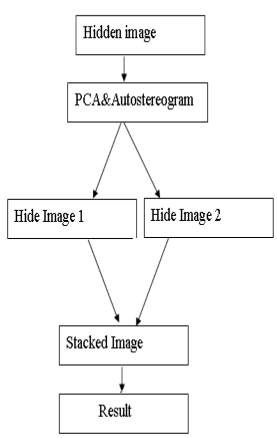

Fig.1 Overview of proposed work

A. *Algebraic Construction of picture covert allocation scheme*

In this section a simple construction of PCA schemes called algebraic construction are described according to with a few modifications.

1. *Column-Permutation Matrices and Polynomials*

In this process is define an n× n! Matrix C_n (v) called a column permutation (CP) matrix which consists of all n! Permutations of v. the given row vector v = [x1 x2 · · · xn], it also identify an equivalence class of CP matrices hCn(v)i and the concatenation operation defined with a monomial Qn i=1 xi and operation +, respectively

2. *picture covert allocation scheme for Gray-scale Images.*

In this PCA-GS average contrast and brightness offset in addition to the minimum contrast. In this section, (n, n)-PCA-GS schemes, average and minimum contrasts, and brightness offset are formally defined, and the polynomial representations of (n, n)-PCA GS schemes are described.

It is devoted to show that the optimal (n, n)-PCA-GS scheme, in the viewpoint of resolution, can be constructed by using the polynomial representation. Then, derive stretched upper limits of the average and least contrasts. Finally in, extend gray-scale images to color images with shades.

3. *Minimum Pixel Expansion of (n, n)-PCA-GS Schemes*

If the consists concatenation of matrix is the content of a basis matrix, it can be represented by the corresponding basis polynomial. But further explain in the next theorem that the basis matrices of any (n, n)-PCA-GS scheme can be represented by the basis polynomials The concatenations of CC matrices in the case that all the basis matrices contain no common column vectors except zero column vectors.

Input:

1. An entrance structure (k, n) on a set P of n members.
2. The premise lattices B0 and B1 of a (k, n)-PCAS with pixel development m
3. The shading c { ∈ b, w} of the pixels of the first mystery picture. b speaks to dark, and w speaks to white.
4. The shading c1, … ,cn∈{0, … , 255} of the pixels in the n gray scale pictures (depth maps).

Generation of the n shares:

1. New pixel extension m' = m + an (a will be a positive whole number) are organized in m'/v lines and v segments.

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2. Build n auto stereogram with separation parameters diminished to 1/v, in view of any past auto stereogram calculation.
3. Develop new premise network B'. Give B'[i] a chance to be the i-th column in B'. The m' components in B'[i] incorporates every one of the components in B[i] and a ci, and whatever other component is dark. Any segment in B' has at most k – 1 dark.

Output: The matrix B

B Auto Stereogram

To produce the visual illusion of a three-dimensional (3D) scene from a two-dimensional image an auto stereogram a single-image stereogram (SIS) designed. In order to observe 3D shapes in this auto stereogram, one must overcome the normally automatic coordination between accommodation (focus) and horizontal vergence (angle of one's eyes).

1. Depth maps

One of the examples of auto stereogram is depth map. Patterns in this auto stereogram show at different depth across each row. Depth map gray scale example auto stereogram: The black and white colors in the background represent a depth map viewing changes in depth across row. The wall-eyed depth map method is used in the example auto stereogram. Three planes across the x axis to the right encode. The background plane is on the left side of the image. The uppermost plane is exposed on the right side of the image. There is a narrow center plane in the center of the x-axis. Starting with a background plane wherever icons are spaced at 140 pixels, single pixels increase a exacting icon by changing it a certain number of pixels to the left. For case, the middle plane is formed by shifting an icon 10 pixels to the left, successfully create a spacing consisting of 130 pixels. A depth map is simply a grayscale image. Gray scale image represents distance between a pixel and its left equal element using a grayscale value between black and white. By gathering, the nearer the distance is, the brighter the color becomes.

2. Random-dot

To determine the amount of horizontal shift needed for pixel, every pixel in the output image will be verified with the pixel of grayscale value in the depth map image. To do this scan every line in the output image pixel-by-pixel from left to right. Finally the number of depth planes must be smaller than the pattern width. This random dot auto stereogram is increased image with clear gradient on a flat background. Pattern consisting repeated random dots is used in fine-tuned gradient because it needs pattern image more complex than standard repeating-pattern wallpaper. Hidden 3D image will be appearing when the auto stereogram is viewed with proper viewing technique. This form of Auto stereogram are known as Random Dot Auto stereogram.

3. Animated

Animated auto stereogram. Image is used 800 × 400 version. When The brain recognize animated auto stereogram series of auto stereograms are exposed one modified into another at the time moving images are shown brain but all auto stereograms in the animation are created using the same background pattern, it is often possible to observe slight outlines of parts of the moving 3D object in the 2D auto stereogram image without wall-eyed viewing; from the static background plane visible the moving object's shifting pixel is well known.

4. Simulated 3D perception

The brain perceives 2D auto stereogram into 3D images. Since decoupling focus from convergence tricks the brain to see the eyes usually focus and converge in same distance it also called Accommodative convergence. When the brain seeing the Distance object seeing brain routinely flattens the lenses and rotates the two eyeballs for wall-eyed screening.

IV.RESULT AND DISCUSSION

In this proposed work is used to hiding image by using color visual cryptography (k,n) techniques and covert information transferred into text file. That covet image is compared with original image. The decrypt image gives high clarity and effective Fig.2 shows the process of hide the image.Fig.3and Fig.4 shows result of hiding images using auto stereogram and PCA with autostereograms.Fig.5 denote the result of retrieval process of image. Fig.6 shows the result of secret text for image.Fig.7 shows the original image of the hiding text.

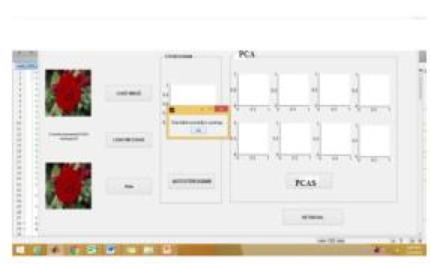

Fig.2 Hiding Images

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Fig.3 Autostereograms

Fig.4 PCA with Autostereogram

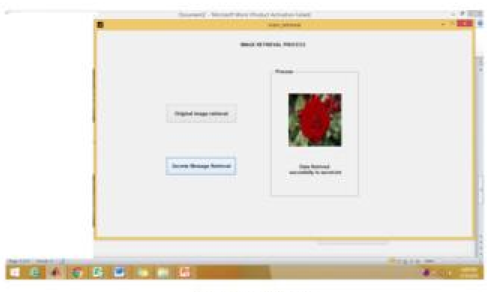

Fig.5 Image Retreival

Fig.6 Secret Text

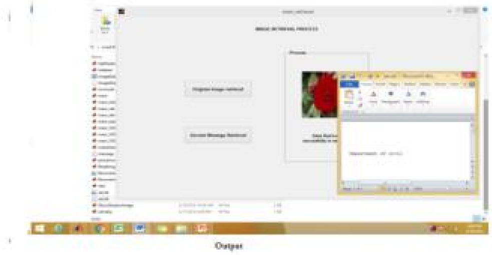

Fig.7 Original Image

V. CONCLUSION

In this paper proposed (k, n) developed a method PCAS and Auto stereogram used in color visual cryptography technique for using in covert image. Using this method compare from original image to received image gets high accuracy and also secure and effective manner. In the future plan to expand this work to use recursive room empty encryption algorithms for hiding the image.

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