A Survey on Reduction of Transmission Risk & Extracting Digital Image for Sharing

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ABSTRACT: Now a days in encryption/decryption process a natural -image-based VSS scheme (NVSS scheme) are proposed to shares secret images. In conventional method of VSS technique secret images that are stored in the form of digital, has shares which appear as noise pixel or sometimes a meaningful images. This increases the interception risk during the transmission of messages. In a natural -image-based VSS scheme (NVSS scheme), to reduce the transmission risk one way is that to hide the noise like share. NVSS scheme can share one digital secret image over n.1 arbitrary selected natural images, this selected images are called as natural shares. In a natural -image-based VSS scheme (NVSS scheme), the natural shares may in the form of photographic images, web images or hand painted pictures etc. The safe shares can be in digital or printed form and can be delivered to those who were involved in NVSS scheme process. This gives the safe natural shares transmission as compared to shares in another form like noise-like or meaningful shares. To share a digital image using various procedures and options, in NVSS scheme randomly chosen images are impervious in encryption phase, hence in NVSS scheme it is inoffensive as it is using only one noise share for sharing the secret image.

KEYWORDS: Visual secret sharing scheme, extended visual cryptography scheme, natural images,   transmission risk.

I. INTRODUCTION

A technique that encrypts a secret image into n shares, with each participant holding one or more shares is visual cryptography (VC). Secret images can be of different types: images, handwritten documents, photographs etc. Sharing and delivering secret images is also known as a visual secret sharing (VSS) scheme. Conventional shares, which consist of many random and meaningless pixels, satisfy the security requirement for protecting secret contents, but they suffer from two drawbacks: a) A high transmission risk because holding noise-like shares will cause attackers' suspicion and the shares may be intercepted. Thus, the risk to both the participants and the shares increases, in turn increasing the probability of transmission failure. b) The meaningless shares are not user friendly. If the number of shares of image increases, it becomes more difficult to maintain the shares, which never give any information for identifying the shares. In the process of encryption plain text will be encrypted to hide secrete message. A key will be provided to encode it and send that encoded text from source to destination. Other side in decryption process received encoded message will be decoded by using the key and original message will be decrypted. The secrete message extracted from encrypted message. The shared secrete key is used for encryption decryption process.

II. RELATED WORK

The objective of this study is to reduce the transmission risk of shares. In the NVSS scheme digital image is shared via public internet. When the number of shares increases transmission risk is also increases .The proposed NVSS scheme share a digital secret image over natural images. Instead of altering the contents of the natural images, the the proposed approach extracts features from each natural shares and uses the encryption decryption algorithm for secure transmission
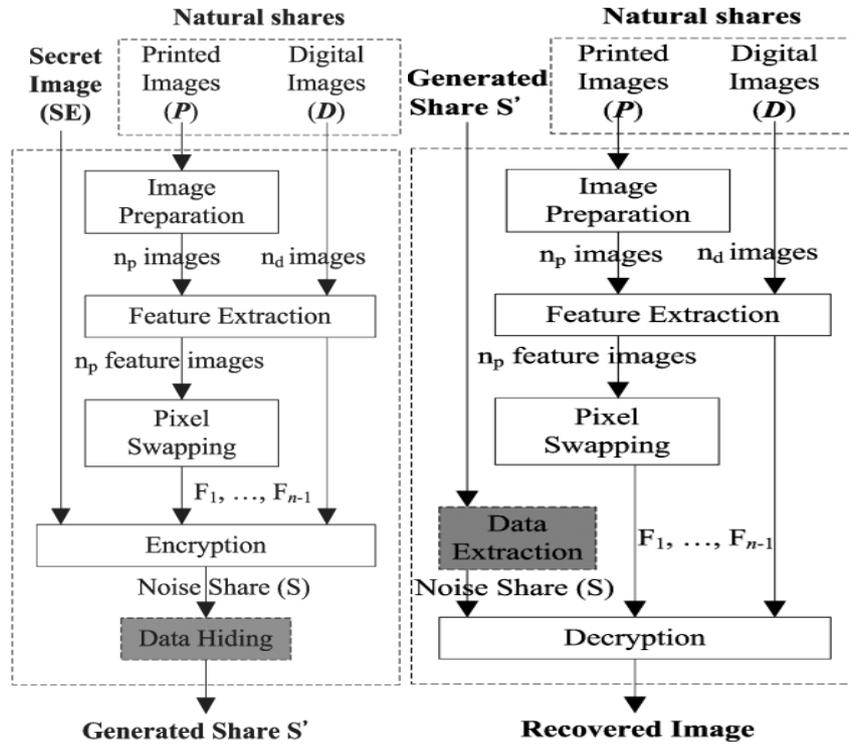
Fig. The encryption/decryption process of the (*n, n*)-   NVSS scheme: (a) encryption process,
(b) decryption process.

III. PROPOSED ALGORITHM

A) Feature Extraction Process

1. The Feature Extraction Module The feature extraction module consists of three processes binarization, stabilization, and chaos processes. First, task is a binary feature matrix is extracted from natural image then; the stabilization balances the occurrence frequency of values 1 and 0 in the matrix. At last, the chaos process scatters the clustered feature values in the matrix. 2. The Image Preparation and Pixel Swapping Processes The image preparation and pixel swapping processes are used for pre-processing printed images and for post processing the feature matrices that are extracted from the printed images. The printed images were selected for sharing secret images, but the contents of the printed images must be acquired by computational devices and then be transformed into digital data.
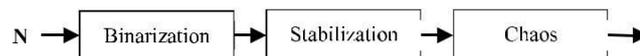
Fig: Block diagram of feature extraction

B) Encryption/Decryption Process

Encryption: Input images include *n* -1 natural shares and one secret image. The output image is look like a noise-like share image. Decryption: Input images include *n* -1 natural shares and one noise-like share. The output image is a recovered image i.e. image with secrete message.

C) Hide the Secret Noise-Like Share

The Quick-Response Code technique is used to hide the secrete image. The QR code is a two- dimensional barcode. A QR code uses four standardized encoding modes i.e. numeric, alphanumeric, byte / binary, and kanji to efficiently store

data. A barcode is a machine-readable optical label that contains information about the item to which it is attached. This QR code encodes meaningful information. The noise-like share as the numeric type of the QR code. The encoding process consists of two steps: 1) Transform pixels on the share into binary values and represent the values in a decimal format. 2) Encode the decimal values into QR code format.

IV. CONCLUSION AND FUTURE WORK

The proposed VSS scheme, (n, n)-NVSS scheme, that can share a digital image using internet. The media that include n-1 randomly chosen images are unaltered in the encryption phase.. As th e number of participant's n increases, the NVSS scheme uses only one noise share for sharing the secret image. Compared with existing VSS schemes, the proposed NVSS scheme can effectively reduce transmission, both for shares and for participants. This provides four major contributions. 1) This is the first attempt to share images via heterogeneous carriers in a VSS scheme. 2) Successfully introduce hand-printed images for image sharing schemes. 3) This proposes a useful concept and method for using unaltered images as shares in a VSS scheme. 4) Develop a method to store the noise share as the QR code with digital signature

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BIOGRAPHY

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