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Secured Data Transmission using Serbo Croation Technique

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Abstract: Serbo croation is defined as the study of invisible communication. Serbo croation is used to communicate the data by hiding the information using image audio, video file. It maintains secrecy between source and destination. There are different types of serbo croation techniques used to courage the data communication. In this paper, we used to data hiding techniques such as LSB, DES, PBE etc. Serbo croation ensuring data security in the data transmission in the form of hidden message can be replevin using appropriate keys without any knowledge of the original image. A message embedded by this message can be in the form of text, imagery. By including audio serbo croation, it is scheme of hiding the existence of mysterious information by concealing it into another medium such as audio file. The files such as images, audio, video contains collection of bits that can be further rendered into images, audio and video. The files composed of insignificant bits or idle areas which can be used for overwriting of other data.

Keywords—DES algorithm, serbo croation, PBE algorithm, information hiding, LSB

I INTRODUCTION

Serbo croation maintains two separate media. One is the image itself another one is data range of Human auditory system (HAS) is 20Hz-20KHz (dynamic range). Because of the sensitivity of HAS, data hiding in audio signals is challenging it fairly small differential range. In the digital representation of audio signals format, Uses 16 bit linear quantization. It is used to digital video cameras amateur digital video editing is becoming more powerful. The serbo croation system consists of the cover file is, audio, video etc., by applying serbo croation the secrete message is hidden. In modern communication system Data Hiding is most cardinal. Sending sensitive messages and files are transmitted in an not form. Audio data hiding method is most effective ways to protect your privacy [1]. An assumption can be made based on this model is sender and receiver share some universal secret information then the corresponding serbo croation where as pure serbo croation that is no important information is shared by both the sender and receiver. The serbo croation protocol is called public key serbo croation [5], [6] and [2].

Serbo croation received the information and used to industry desire to protect copyrighted digital work in

- audio
- video

II Audio Serbo Croation

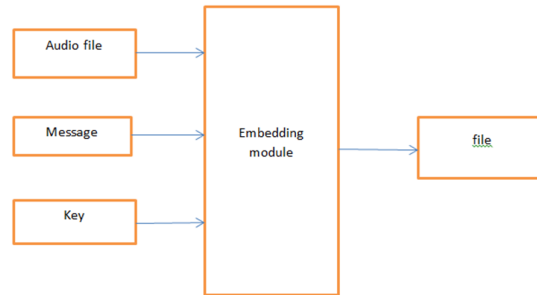
The security of information has become unique concern. Encrypting data has been the famous approach to protect information. The encrypting data can be to hide it by making this information. Real information can be discern only by the friends. In particular, if the important data is hidden inside an image then everyone even your friends would sight it as a picture. At the same time only your friends could retrieve the true information. This is called data hiding or serbo creation [2].

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Audio serbo croation works by slightly changing the binary continuity and concealing with the secret message. Many methods are presented like Least Significant Bit (LSB) restructure last digit of carrier file. Parity coding involves a parity bit message that is hidden in every sample. Phase coding commit encoding is done from phase shift to secret data. Spread spectrum scatter the secret data into frequency spectrum, in which continuous and frequency hopping is used. In Echo method, echo signals are generated for inserting secret data into the signals. Serbo croation is a hiding the information. The growing possibilities of modern communications need the security of computer network. The network security is most popular method as the number of data being exchanged is increased. Therefore, the confidentiality and data integrity are required for protecting against unauthorized accessing of data. This resulted in tremendous growth in the field of information hiding [2]



III Video Serbo Croation

Video Serbo croation is a technique to hide any kind of files in any extension into a carrying Video file. This project is the application developed to bury any kind of data (File) in another file, which is called carrier file. The carrier file must be a video file. It is burden with embedding information in an innocuous cover media in a guarded and robust manner. This system makes the Files more guarded by using the concepts Stenography and Cryptography.

Stenography, poor cousin of Cryptography and the aim of cryptography is to make data hard to make out by a third party, the main aim of serbo croation is to hide the data from a third party by the use of advanced computer software and that software can place a hidden trademark in their product, allowing them to keep a check on piracy. This is called as watermarking. Hiding serial numbers or a set of characters that decide an object from a alike object is called as finger printing. The latter is used to reveal copyright violators and the former is used to summon them. These are the examples of serbo croation. The data should not be significantly by the embedded data, and these data should be invisible. The embedded data should be as immune as possible for modifying the intelligent attacks or anticipated manipulations. Before serbo creation [4], encryption is done for the hidden datas.

IV The Proposed Method

Secured communication between sender and receiver .It can be done using authentication. The data hiding in audio steganography in case of video hiding the frame number and the key provided at the transmitter act as the authentication key. In audio steganography, hiding the video by the frame number provided by the encryption key act as the tool for authentication. The key is used for the strength of authentication [3].

1. DES (Data Encryption Standard)

The project uses an encryption algorithm called DATA ENCRYPTION STANDARD(DES).Whenever a text file is selected to be encoded in the Image, Audio and Video file, it is first encrypted using the DES algorithm and then that file is sent to the receiver. The receiver in turn decrypts it using the same key, and thus gets the appropriate message. Secured serbo croation can be created by adding the cryptography and serbo croation.

Operation performed using its inputs are bit shifting and substitution of bits. The Working process is controlled by the key. By doing these operations repeatedly and in anon-linear manner you end up with a result which cannot be used to retrieve the original without the key. DES works on 64 bits of data at a time. Each 64 bit data is iterated from 1 to 16 times. For each iteration, 48 bit data is the subset of the 56 bit key is inserted into the encryption block represented by the dotted rectangle. Decryption is the inverse process of the encryption.

2. LSB (Least Significant Bit)

Conversion of analog signal to digital binary sequence is performed using Sampling technique and quantization. Least Significant Bit of the binary sequence of each sample in the digitized audio file is replaced with binary equivalent of secret message [6]. Most of the

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digital audio is created by sampling the signal and quantizing the sample with a 16-bit quantize. The rightmost bit, or low order bit, of each sample can be changed according to data string. The changes in one sample to another is not observed by many people. The audio signal still sounds the same [6].

Computation of Least Significant Bit (LSB) is the bit position in a binary number provides the units value for determining whether the number is even or odd. The LSB is mentioned as right-most bit. It is analogous to the least significant digit of a decimal integer, which is the digit in the ones (rightmost) position [5].

3. PBE (Password Based Encryption)

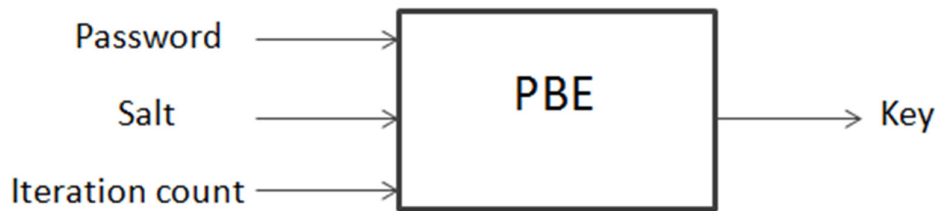


Figure 1. PBE

By implementing the PBE algorithm we can use hashing technique. It can change the data's and images into bitwise. With the help of the bitwise function we can create a secret password for audio and video files, there are three function in PBE algorithm.

- Password: Used to secure the datas
- Salt: procedure large set of keys corresponding to a given password among which one is selected at random according to salt.
- Iteration count: to perform the matching operation for given password.

Extraction of File (Sender Side)

Secured message is send to the destination by the sender. This can be done by attaching a video file to the message. The third parity assumes that video file is sending and secret sending of the message is not visible. In this a sender can encrypt a file by entering a key. The same key must be entered during the decryption process.

Extraction of File (Receiver Side)

This process can be done by entering the key that is previously entered during the encryption process. If the entered key is invalid then the message will not be received. The receiver can recieve the hidden message in the decryption process. The user enter the same key, sent by the sender. The receiver can receive the message only by entering the valid key.

Table I. List of acronyms

Acronym	Description
EOF	End of file
JCE	Java Cryptographic Extension
MAC	Message Authentication Group
WAV	Waveform Audio Format
FLV	Flash Live Video
PBE	Password Based Encryption
DES	Data Encrypted standard

VI Conclusion

The project was completed successfully to build a tool called serbo creation. This tool can be used for hiding the text message in the audio, video files, the message that is sent can be encrypted, so as to support secure serbo croation. Regardless, the technology called serbo croation is easy to use and difficult to detect. Serbo croation conceals the existence of the secret message is to cover the audio

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file. Serbocroation lies in the process used for embedding message in audio file. The more that you know about its features and functionality, the more ahead you will be in the game.

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