A Steganography Technique for Audio, Video and Image using Modified LSB Steganography with AES Cryptography

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Abstract— In Steganography, the total message will be invisibleinto a cover media such as text, audio, video, and image in whichattackers don't have any idea about the original message that themedia contain and which algorithm use to embed or extract it.

Key words: Steganography, Filtering Algorithm, AES Cryptography, Conceal of Message

I. INTRODUCTION

A huge amount of confidential data is being lost every yearduring transmission by the intruders. Ciphering techniques arewidely used to encrypt and decrypt data. But sometimes dataencryption does not seem enough and hiding of the data itself is needed more. The technique used for this idea is calledSteganography.Steganography is the process of concealing information in a carrier such as text, image, voice, video etc.

The aim is to develop a application for efficient filtering based approach using the principles of steganography with AES cryptography.The various objectives of this web application are:To produce security tool based on steganography techniques.To explore techniques of hiding data using encryption module of this project. To extract

- This proposed method can also withstand different attacks and thus a very strong and secure method of data hiding can be obtained
- Method used: Audio-video Crypto Steganography,Advanced chaotic algorithm.

A. A Secure Video Steganography with Encryption Based On LSB Technique:

- This work was presented in 2013 by Pooja Yadav, Nishchol Mishra, Sanjeev Sharma.
- In proposed scheme video steganography is used to hide a secret video stream in cover video stream.
- Method Used : Encryption, Image steganography, Sequential Coding, Video Steganography

B. Hiding Secret Information Using Lsb Based Audio Steganography:

- This work was carried out by Anu Binny, Maddulety Koilakuntla in 2014 with the aim of hiding secret audio behind any audio file with minimal distortion in the quality of that particular file.
- The efficacy of proposed method is verified using the parameters like PSNR. Future work consist of enhanced security and robustness by means of addition of cryptographic key algorithms.
- Methods used: audio steganography, LSB Method, DRM.

II. PROBLEM DEFINITION

While dealing with steganography for hiding secret information in images, there exists a large variety of steganography techniques some are more complex than others and all of them have respective strong and weak points. So we prepare this application, to make the information hiding more simple and user friendly. Quality &distortion of the real data is also taken into consideration.

III. SOFTWARE AND HARDWARE REQUIREMENTS

A. Hardware:

1) Minimum Requirements:

- Processor: Intel Pentium II or more than1.6 GHz
- Ram:256 MB RAM
- Screen Resolution:1024x768 display 5400 RPMHard disk
- Supported Arch: x86 and x64

2) Recommended:

- Processor :Intel Pentium IV or more than 2.2 GHz or Higher CPU.
- Ram:1024 MB or more RAM
- Screen Resolution:1280x1024 display, 7200 RPM orhigher Hard disk
- Supported Arch: x86 and x64

B. Software:

1) Minimum Requirements:

- Operating systems: Microsoft Windows XP Professional/Microsoft Windows Server 2003/ Windows Vista
- Front End:Java 2 SDK version 1.4.2
- Web Browser: Microsoft Internet ExplorerMozilla Firefox Google Chrome

IV. CONCLUSION

Steganography is a really interesting subject and outside of the mainstream cryptography and system administration that most of us deal with day after day.Steganography can be used for hidden & secure communication. We have explored the limits of steganography theory and practice. Smart Steganography application software provided for the purpose to how to use embed message into image, audio & video file type & to embed file of any type. The master work of this application is in supporting the facility of compressing of output file & to even encrypt the output file with safe password.The hidden weapon of Smart Steganography is that, it encrypts the plain text in to cipher text & then that cipher text is embedded into the image, audio or video file. Since ancient times, man has found a desire in the ability to communicate covertly. The recent explosion of research in watermarking to protect intellectual property is evidence that steganography is not just limited to military or espionage applications. Steganography, like cryptography, will play an increasing role in the future of secure communication in the "digital world".

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