International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 03 | Mar 2022 www.irjet.net p-ISSN: 2395-0072

Review On Encrypting and Decrypting Message Via Image Slicing

Sudeshna Khedekar [1], Digvij Akre [2], Vishakha Mulik [3], Prof. Bhavna Arora [4]

[1], [2], [3] Student, Department of Computer Engineering, Atharva College of Engineering, Mumbai
[4] Professor, Department of Computer Engineering, Atharva College of Engineering, Mumbai

---

Abstract - *Now days the multimedia data protection is becoming very important it has become the topmost priority to keep our data secure due to this it is necessary that the data that is to be transmitted via message must be secured from unauthenticated or third-party access so to secure the data the public and the private sectors use various kinds of techniques and methods to guard the valuable data from unauthenticated access there are different techniques used to keep your secret data safe.*

***Key Words*: Steganography, Cryptography, Encryption, Security, Decryption.**

1. INTRODUCTION

In the current trends, the technologies have been advanced. Most of the individuals prefer using the internet as the primary medium to transfer data from one end to another across the internet. There are many possible ways to transmit data using the internet like: via e-mails, sending text and images, etc. In the present communication world, images are widely in use. As the technology is increasing day by day there is a need to secure the data that is being transmitted over unsecured channel. The data security can be enhanced by combination of Cryptography and steganography. Basically, Data security means protection of data from unauthorized users or attackers. Encryption is one of the techniques for the information security.

Various technologies we applied in our day-to- day life and huge data can be conveyed through the network through one medium to other the valuable data that is transmitted is not safe by third party users hence its very essential thing to keep that valuable data secure from such unauthenticated access in this digital world and current necessity this requirement can be achieved by different approaches like steganography and cryptography techniques approach.

2. LITERATURE SURVEY

Image steganography using Modified Least Significant Bit [1]

The above paper used LSB techniques on image the aim of this study is to accomplish the protection by applying a alter steganography method.

New Approaches to Encrypt and Decrypt Data in Image using Cryptography and Steganography Algorithm [2]

The above paper deal on working to secure information using hybrid process like crypto and stego in their approach there is a use of h-lsb along with affine cipher algorithm that has been used for providing a lot of safety to knowledge during a network surroundings

Advanced Encryption Standard (AES) Algorithm to Encrypt and Decrypt Data [3]

In their paper they have used AES algorithm which gives detail of many crucial features of it and also explain about some earlier researches the algorithm has its own specific structure to encode and decode secrete data and is given in hardware and to code anywhere in the globe.

Image Security using Image Encryption and Image Stitching [4]

Their paper aims to give safe images using a different image technique that includes image encrypt technique with image stitch technique in the paper it generates sequence chaotic key that use in encoding of each image where initial picture is transferred and also each part is decoded and transferred to the other end.

A Review on Steganography Techniques [5]

In their paper most of the modern techniques that have been in run on image steganography field and to analyzes them to clarify the strong and lacking points in each work individually in order to include in thought for future works in time ahead.

A research Paper for Symmetric and asymmetric cryptography [6]

The paper in which the author deal with providing confidential data with credibility this paper provides us about symmetric and asymmetric cryptography and also

the advantage of referring it and the way we tend to safe the data by the third-party user access.

Image Steganography Using LSB [7]

In this paper the idea is to defined on a process of hiding data to image by using the least significant bit LSB and the symmetric key between the sender and the receiver user here we have to settle on the bits that will get the minimum resolution between the first image and stego image this paper further explains how the encryption and decryption processes are done

Steganography in Images Using LSB Technique [8]

This paper focuses to protect information that send between two users this paper describes with concealing text in an image file using least important bit lsb technique the lsb algorithm is enforced in abstraction domain within which the payload bits area unit embedded into the lsb of cover image to derive the stego-image.

Information Security Based on Steganography & Cryptography Techniques: A Review [9]

A lot of analysis has taken place in direction to reduce the safety problems by contributory numerous approaches however totally different terrains create separate challenges during this context this paper presents the investigation of 2 common security mechanisms particularly cryptography and steganography.

Enhancing the Security and Quality of LSB based Image Steganography [10]

In this paper we learned the process arbitrarily scatter the bits of the message in the cover image and thus to making it tough for third party user to get the access to the original message the solution is to provide good enhancement to lsb approach is consider to secure as well as provide image quality.

3. DISCUSSION

Security is very essential in today's society. Confidential data and information in today's society are not safely transferred via the network. Many technologies are used to secure data. New technologies are introduced to deliver data securely to the user. safety can be achieved by different techniques. We have tried to use hybrid technology to deliver data safely to the user. Get data securely by combining a lot of technology So hybrid technology is used. In this we used cryptography, steganography techniques that are already used technology, but we added image slicing and image stitching technology to get more secure data. This technology can be used for future security and this technology can be improved for better results.

4. BLOCK DIAGRAM

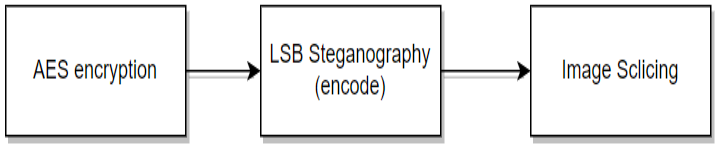


Fig 1. sender side

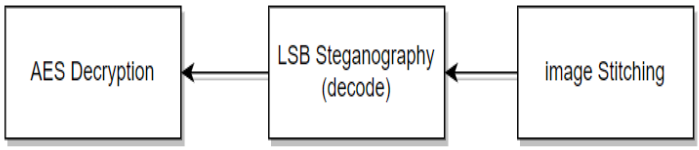
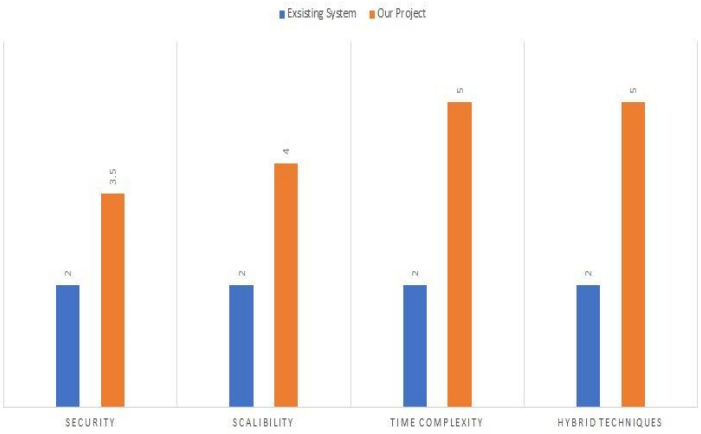


Fig 2 . receiver side

5. COMPARISION OF EXISTING SYSTEM



6. LIMITATIONS

- However, terrorist criminals also this can be really much serious if this method is gone in the incorrect hands like hackers.
- Large number of data huge file size so someone can doubt about it.

7. FUTURE SCOPE

This idea and approach that we have implemented does not end here. There can be a future scope for development we can extend this particular project into multiple platforms. Particularly, we can incorporate additional algorithm together to make is more appealing. One other scope of improvement in expanding the idea hiding the data into a video format so that the application can be more secure so that different sector can use this to secure the way of communication between the user and themself.

8. CONCLUSION

With the advance development of communicating technologies and other network technologies the problem of secure communication of data has taken additional attention. In this paper we have proposed an approach of encrypting a message for safer transmission to ensure the safe transmission of data we have use multiple data security technique i.e., hybrid techniques that includes AES cryptography LSB steganography image slicing and image stitching method so that to maintain authenticity during data transmission and to avoid any data loss.

REFERENCES

[1] Ahmad M. Odat and Mohammed A. Otair. "Image steganography using Modified Least Significant Bit". Indian Journal of Science and Technology, Vol 9(39), DOI:10.17485 October 2016

[2] Ako Muhammad Abdullah and Roza Hikmat Hama Aziz "New Approaches to Encrypt and Decrypt Data in Image using Cryptography and Steganography Algorithm". International Journal of Computer Applications (0975 – 8887) Volume 143 – No.4, June 2016.

[3] Ako Muhammad Abdullah, "Advanced Encryption Standard (AES) Algorithm to Encrypt and Decrypt Data".

[4] Jyoti T.G.Kankonkar and Prof. Nitesh Naik,"Image Security using Image Encryption and Image Stitching", Proceedings of the IEEE 2017 International Conference on Computing Methodologies and Communication.

[5] Wafaa Mustafa Abduallah and Abdul Monem S. Rahma, "A Review on Steganography Techniques", American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS), ISSN (Print) 2313-4410, ISSN (Online) 2313-4402

[6] Akshay Kekunnaya, Rajeshwari Gundla, Siddharth Nanda, "A research Paper for Symmetric and asymmetric cryptography", ijrece vol. 7 issue 2 (april-june 2019), issn: 2393-9028 (print) | issn: 2348-2281 (online)

[7] Dr. Amarendra K, Venkata Naresh Mandhala, B.Chetan gupta, G.Geetha Sudheshna, V.Venkata Anusha, "Image Steganography Using LSB", international journal of scientific & technology research volume 8, issue 12, December 2019, issn 2277-8616

[8] Arun Kumar Singh, Juhi Singh and Dr. Harsh Vikram Singh, "Steganography in Images Using LSB Technique", International Journal of Latest Trends in Engineering and Technology (IJLTET), ISSN: 2278-621X

[9] P, Kumar and V, Sharma." Information Security Based on Steganography & Cryptography Techniques: A Review". International Journal of Advanced Research in Computer Science and Software Engineering, Vol. 4, Issue 10, October (2014):247-250.

[10] Nadeem Akhtar, Pragati Johri and Shahbaaz Khan," Enhancing the Security and Quality of LSB based Image Steganography", International Conference on Computational Intelligence and Communication Networks 2013 IEEE DOI 10.1109.

[11] M. Pavani1, S. Naganjaneyulu, C. Nagaraju," A Survey on LSB Based Steganography Methods" International Journal of Engineering and Computer Science ISSN:2319-7242 Volume 2 Issue 8 August, 2013 Page No. 2464-2467.

[12] M.Pitchaiah, Philemon Daniel and Praveen, "Implementation of Advanced Encryption Standard Algorithm", International Journal of Scientific & Engineering Research Volume 3, Issue 3, March -2012, ISSN 2229-5518.

[13] Rajaratnam Chandramouli and Nasir D. Memon, "Analysis of LSB based image steganography techniques", 2001 International Conference on Volume: 3, DOI: 10.1109/ICIP.2001.958299.

[14] Ramadhan J. Mstafa and Christian Bach, "Information Hiding in Images Using Steganography Techniques", Northeast Conference of the American Society for Engineering Education (ASEE)At: Norwich University David Crawford School of Engineering, DOI:10.13140/RG.2.1.1350.9360.

[15] Nikhil Patel and Shweta Meena, "LSB based image steganography using dynamic key cryptography", 2016 International Conference on Emerging Trends in Communication Technologies (ETCT), DOI:10.1109/ETCT.2016.7882955.