

## **ABSTRACT**

*Data Security during transmission of information is something that must be considered in today's telecommunication technology. The simplicity in getting the information and exchange data causing user of telecommunications services should be more cautious, so we need a technique to secure data sent, one of them with steganography and cryptography techniques. Steganography is a technique of writing hidden messages or hide the secret message, so that, the unauthorized people are not aware of the existence of the message. While cryptography is the technique of writing a message in secret, one of the methods used is encryption. In audio steganography, media place to hide a message is called "a cover" in the form of an audio file. However, it's necessary to have an optimization, in example with choose the place to insert messages using Psychoacoustic modeling.*

*This final project is analyzed and simulated the message encryption process using Advanced Encryption Standard (AES), the insertion process and also the message extraction processes. The insertion process is done by replacing the cover signal in a certain area that is not sensitive to human hearing. That area obtained from Psychoacoustic modeling.*

*The results of this final project is an audio file that has text messages that have been encrypted AES that meet the criteria of steganography is the existence of a message can't be perceived ( $SNR > 110$  dB and  $MSE < 1 \times 10^{-13}$ ), quality steganography file is not much different from the original file (MOS approaching 5), also the message can be extracted again. However, the system does not have the resilience to attacks such as MP3 compression, cropping, resampling, and the provision of AWGN. The entire message that has inserted can't be returned according to the insertion message*

***Key words: Steganography, Audio, Cryptography, Psychoacoustic, Advanced Encryption Standard***