ABSTRACT

In final project before, it has investigated about steganography with LSB substitusion, which only LSB is subtituted and only audio with 16 bits/sample. The result is capacity that can be embedded is 1\16 * size of cover file and just only adding a encryption, without any compression to the secret data.[1]

This final project focus on the research of embedding secret data/information in uncompressed audio digital with substitusion method, which is substitute a LSB and 3 bits before LSB. So the capacity that can be embedded is {[(4/ size of bit/sample) * size of cover file] - 50 bytes }, or almost a half of size of cover file. In addition of encryption technique, compression technique is also applied. The Blowfish encryption algorithm is used for encryption, and LZW algorithm used for compression is Lempel-Ziv-Welch (LZW). Output of audio steganography is uncompressed audio, that has an equal size with the cover file.

The simulation result show that audio with 16 bits/sample is better than audio with 8 bits/sample. *Mean Absolute Error* (MAE) and *Signal-to-Noise Ratio* (SNR) is depends on many factors. If size of secret data and frequency become bigger, the MAE become bigger as well, but the SNR become smaller. The types of audio (genre) also influences MAE and SNR value. Audio from rock music indicate a bigger MAE and smaller SNR compared to audio from slow music. This result agree with the subyective test. Adding compression in the process, help improve the embedding capacity.