

## **Abstract**

Steganography is art and science in hiding data into a digital media, with hope the existence of the data in the media is not detected by the other people. Audio consists of 2 kinds, they are audio that contains frequencies (such as mp3, wav) which there are a lot of steganography researchs were done on the audio, and audio midi that contains note songs (such as midi) which there is no steganography research was done on the audio at IT Telkom. Steganography on the 2 kinds of the audio is different on implementation. Therefore i choose steganography research on audio midi. I used echo hiding method and low bit encoding method for this research.

Steganography using echo hiding method embeds data by representing the data to echoes. Meanwhile, low bit encoding method that implemented in this final project embeds data by randomizing the data bits using linear congruential generator algorithm and then the randomized data bits are embedded in midi file by modifying least significant bit of note velocity (volume) of midi file. Analysisses of this research use 5 parameters, they are fidelity, recovery, robustness, the size of original midi and stego midi, and maximum size of data that can be embedded.

The experiments and analysisses show that low bit encoding method is better than echo hiding method (based on fidelity, recovery, and robustness, and the size of original midi and stego midi). Maximum size of data that can be embedded of echo hiding method is same as maximum size of data that can be embedded parameter of low bit encoding method.

**Keywords :** steganography, midi, echo hiding, low bit encoding, linear congruential generator.