ABSTRACT

Musical instruments in Indonesia are very diverse and become a medium for producing various kinds of notes to be heard. One of them is the flute. The flute is often used to accompany the song and can be Played by everyone. The size of the recorded data also often includes quite large places/spaces. Data Compression is a way to overcome the problem. The solution to reducing Audio data while reducing Audio quality is Compression with Compressive Sensing techniques.

This study aims to analyze the comparison of compression system on flute tones using CS (Compressive sensing). CS (Compressive Sensing) consist of two steps that is the process of compression and reconstruction. Audio in .WAV format will be compressed using DFT (Discrete Fourier Transform) and SWT (Stationary Wavelet Transform) and reconstructed using IRLS (Iteratively Reweighted Least Squares).

In this study, the performance was obtained with a compressing ratio of 10%, 30% and 50%. Of the three compressing ratios, the best results were obtained with a compression ratio of 50%. Comparison of the quality of the compressing method with the SNR, MSE, and MOS test parameters was obtained for the SNR (Signal to Noise Ratio) parameter in the SWT method is 77.80 dB, while the DFT method is 77.73 dB, for the MSE (Mean Square Error) parameter in the SWT method and the DFT method, has the same value that is 0.03, and the results of MOS analysis conducted by 5 correspondents are SWT Compression results with a value of 3.9 (good), DFT Compression of 3.9 (good), SWT reconstruction 3.5 (good enough), and DFT reconstruction 3,6 (good).

Keywords : *Compressive Sensing, Discrete Fourier Transform, Stationary Wavelet Transform, Iteratively Reweighted Least Square.*