Abstract

Reverberation (multiple echo) is the acoustic noise signals that appear in an enclosed space due to a superposition of multiple reflections and diffraction from walls and objects in the room. Reverberated signal is a complex problem that hard to find a solution, because the original voice signal is correlated with reverberation effects.

Reverberation effect will cause signal degradation and also the original voice spectrum characteristics. This will greatly disturb the audience's perception of the information presented, so that required a system of tools that can reduce the effects of these reverberation.

In this Final Project will be implemented dereverberation process research using analytical methods of synthesis Overlap and Add Short Time Fourier Transform (STFT) using multimicrophones system (two microphones) in a variety of room sizes (small, medium, and large). This system uses multimicrophone because it is suitable for recording application coupled audio conferencing.

Multimicrophone system will produce two sounds that have spectral characteristics that correlate to each other. Performance of this system is to compare 2 reverberated signals, where the original signal has a level of high spectral correlation, and signal level reverberation have low spectral correlation.

From this research can be concluded that the system is capable to use in small room, with large gain and overlap 75%, where in this state system can get small MSE and reverberation value.

Keyword: spectral sound, reverberation, correlation, multimicrophones, STFT.