ABSTRACT

In the health sector, there is a technique to examine the patient's condition which is called auscultation. Auscultation is the technique of listening to the sounds produced from biological processes that occur in the body. This technique uses a stethoscope as a tool. Using a stethoscope doctor will be able to analyze the physical condition of the patient through voice sounded from inside the body, such as the sound of the heart, abdominal, and lung

In this final task, a abdominal sound recordings which have been used by the doctor to analyze the person's health is used. In recording process, unexpected noises that will affect the diagnosing process are often found, e.g. heart sound will be heard from that stomach sound recording since the heart sound's frequency is higher that the abdominal sound's frequency. Adaptive noise cancellation is an adaptive filter applications. By using the Least Mean Square algorithm, the filter can reduce heart sound from abdominal sound recordings. The performance of the system in this study were observed for any increase in order to observe the SNR value and the value of MSE. In this case also be measured subjectively that the MOS degradation category rating of 30 respondents.

The output signal has good quality because a fairly high SNR improvement of each of the input that has been given. Optimal SNR value of 11,82dB on simulation input SNR 5dB with order filter 105 and a step size of 0.015. In addition to the minimum error value is obtained by 8,3711e-07 with five filter order and step size of 0.005.

Keywords: heart sound, abdominal sound, adaptive filter, Least Mean Square algorithm (LMS)