

## ABSTRACT

SONAR (Sound Navigation And Ranging) is a method that utilizes sound propagation in the water to determine the presence of objects that are below the surface. SONAR (Sound Navigation And Ranging) is often used in the marine world as a military ship navigation tool. In general, the transducer used for SONAR uses a pulse signal to transmit. Detection of underwater objects takes advantage of the difference in the value of the voltage amplitude for a target object that has a density difference.

SONAR will be used to detect multiple objects underwater. In this final project, a simulation of the detection of objects under water will be carried out by utilizing sonar reflections, by firing a wave that has been fired by a transmitter and will be received by a receiver. The data received by the receiver will be analyzed according to the needs of this study.

The results obtained in this study, among others, the Underwater Path sonar recording resulted in two (2) targets, the first target with the initial source position at -60m and at -70m the final position at km 1100 occurred two (2) wave reflections, the second target was carried out the final position is at 1300 km and the altitude is -45m with an average of two reflections of two (2) waves.

The highest peak recording of the *bellhop path* occurred at km 45 and 90 and the lowest was at km 15 and 75. Furthermore, the recording of Integrated received pulse data where the maximum/highest amplitude occurred at 66.5 seconds..

*Keywords: SONAR, Underwater, Multiple object*