

## ABSTRACT

Today the experts examined only on the radar subsystems just like an antenna, receiver, transmitter. But in the relatively rare signal processing to the experts examined in this section. In the signal processing are called detection process, the detection process on the radar is an important part of a radar system. On radar detection process can determine the presence or absence of a target. Sometimes the frequent error detection, such as false alarms and missed detection. False alarm is a condition where there is a target detector states, but in fact the radar detects only noise. Missed detection is detector circumstances stated there is no target but actually contains the target detection. a decision should be taken with the appropriate test procedures existing hipostesis for  $H_0$  (no targets, there is only noise) and  $H_1$  (targets present).

This Final Project analyzes two methods for detecting targets on radar, namely sequential detection and fixed sample size test. The parameters used are  $\alpha$  dan  $\beta$  to obtain a threshold value of A and B. The parameters compared from the two methods are the value of Probability of False Alarm, Probability of Miss Detection, Average sample  $H_0$ , Average sample  $H_1$  and Average sample fixed sample size test. Then for the scenarios tested in this study are the values of  $\alpha$  dan  $\beta$ , cell index and Signal to Noise Ratio (SNR).

The test results in the Final Project that the average sample values in  $H_0$  and  $H_1$  for sequential detection will be smaller than the average fixed sample size test. As in the experiments with scenarios  $\alpha$  dan  $\beta = 0.01$  with SNR = -5 dB and MC = 104, the results for each average sample have been obtained. Average sample  $H_0 = 266.5$ , Average sample  $H_1 = 231.2$  and Average sample fixed sample size test = 589.

Sequential detection can produce  $1/2$  times the number of samples needed for a fixed sample size with the same false alarm and miss detection targets.

**Keywords : Radar, detection, sequential, false alarm, missed detection, fixed sampel size test**