ABSTRACT

Air-Surveillance Radar (ASR) is a type of radar used by the military and air-ports used to control air-navigation systems that can map the distance and speed of a moving target by applying Doppler-processing and Moving Target Indication (MTI) methods. In detecting a moving targets in a radar there must be also an error in detecting an undesirable signal by radar so not interfere with a moving target environtment, this signal is called a clutter signal. To overcome problems like this case, digital signal processing applied to radar systems.

In this Final Project, apply an echo signal modeling and moving multitarget detection with the help of a software simulation program. The echo signal modeling process is done using the Doppler-processing method on radar which creates signal model data for radar data. And then, the process of moving multitarget detection on radar is done using the MTI filter method and applied with matched-filter. There are various test scenarios conducted in this Final Project, to see the results of the detection of moving multitarget based on MTI method.

The experimental results of this Final Project show simulations with five targets and 20 number of pulses assumed in this experiment. Generate a moving multitarget detection process using the MTI method in accordance with specified data. The results of moving multitarget detection simulation using MTI filters and matched filters have an effect on moving multitarget.

Keywords: *Echo Signal, Signal Modeling, MTI Filter, Matched Filter*.