ABTRACT

Radar technology has several subsystems that can be processed, including subsystems in transmitting antennas, transmitters, receivers, and signal processing. But in terms of carrying out the detection process, signal processing is a very important subsystem. This is because the subsystem will decide whether or not the target is detected. The problem that is often found in the detection process is the occurrence of error detection. One of them is false alarm.

To overcome these problems, it can be overcome by the detection algorithm method called the Constant False Alarm Rate (CFAR) algorithm. The CFAR method refers to the general form of adaptive algorithms used in radar systems to detect background noise and interference that cannot be avoided. So, that false alarms can be overcome to be constant and the resources on the radar will not be taken up enough.

In this simulation, two simulation scenarios are used, with each scenario using $P_{FA} = 10^{-1}$ *to* 10^{-4} *parameter values, Training Cell = 100, Guard Cell = 20, and the number of tests conducted (Data Window) of 1000 - 50,000 bin cell. From the two simulation scenarios that have been done, it is found that the detector with CFAR algorithm, namely CA-CFAR and GOCA-CFAR, can work well when in homogeneous and heterogeneous noise conditions. The CFAR algorithm can detect targets well and produce a false alarm level that matches the desired parameter value.*

Keywords: CFAR, Radar, False Alarm, Noise, Interference, Threshold