

## ABSTRACT

Radar have three main subsystems, it were transmitter, receiver, and processing signal. In the processing signal there is a detection process. The detection process in radar is very important, because it can determine exists or does not exist targets. But in the detection process error detection is frequently found. One of them is a false alarm, A false alarm is a condition where there is no target but the radar detects a target.

The OS-CFAR method is use to resolve false alarm on the radar. The OS-CFAR method is the perfection of CFAR that is designed for heterogeneous noise conditions and can suppress target masking, so OS-CFAR can suppress the clutter of a false alarm.

From the test result on heterogeneous noise conditions with the parameter number of samples = 2000, reference cells = 16, guard cells = 2 and Probability false alarm =  $10^{-1}$  to  $10^{-4}$ . Obtained the actual Pfa result of 0,1458 at nominal Pfa  $10^{-1}$ , 0,0329 at nominal Pfa  $10^{-2}$ , 0,0062 at nominal Pfa  $10^{-3}$  and 0,0026 at nominal Pfa  $10^{-4}$ . In this test also using Neyman-Pearson and Cell Averaging CFAR algorithm as a comparison for Order Statistic CFAR. The result of the comparison with Neyman-Pearson and CA-CFAR algorithm is OS-CFAR algorithm can suppress target masking that produce a constant false alarm value and make a better threshold parameter in heterogen condition.

**Keywords : Radar, detection, threshold, CFAR, OS-CFAR, CA-CFAR, Neyman-Pearson, false alarm**