ABSTRACT

Wireless traffic in fact is increasing, while spectrum already allocated. This problem can be solve using maximizing utilization band spectrum. One of technology that can maximizing spectrum is cognitive radio. Spectrum sensing is one component in cognitive radio (CR). There are 3 kind of detector that usually used in cognitive radio. That are, Matched Filter, Energy Detector and cyclostationary. The best one is energy detector. But, this sensing algorithm that have disadvantages, which is very sensitive to noise power uncertainty.

Then formed a new method based on the GLRT approach that resist with noise power uncertainty. Evaluation algorithm GLRT Approach in this thesis such as; TAGM, TGLR, TSTBCGLRT, TEMR. In this thesis we analysis 4 aspect. First, analysis several parameter GLRT Approach on cognitive radio. Second, compare the energy detection methods with several algorithms. Third, GLRT approach analyzing advantages and disadvantages of each algorithm. Last, the algorithm uses a bootstrap type-3 are TAGM and TSTBCGLRT.

The result are GLRT approach work be affected parameter such as; SNR, Number of Antenna, Channel Shape and STBC scheme. Algorithm GLRT approach can work under noise power uncertainty. It make algorithm GLRT approach solve the problem of Energy Detector. For all algorithm GLRT Approach, TSTBCGLRT is the best algorithm because suitable with PU signal and channel model. GLRT approach can be combined with bootstrap for detector type-3 to help determine P_d assumption. Furthermore, bootstrap can work without distribution H_0 is known and fix threshold. Because, bootstrap is only resampling data from signal exist. In order hand, bootstrap can work with small of data number to get assumption P_d.

Keyword - Bootstrap, Cognitive Radio, GLRT Approach, Spectrum Sensing