

ABSTRACT

Wireless telecommunication technology which is developing rapidly together with the increasing needs of the community makes radio frequency spectrum increasingly scarce. Therefore, the use of radio resources is needed. Cognitive Radio (CR) technology is an effort to overcome the problem of radio spectrum scarcity. CR which is cognitive in nature will know the condition and information then adjust to the surrounding environment.

Orthogonal Frequency Division Multiple Access (OFDMA) is one of the techniques used in CR technology. This research method uses the Greedy algorithm which tends to fill the empty spectrum in the allocation of radio resources. Primary User (PU) and Secondary User (SU) who are in the same geographic area will be tested in the simulation. SU is interweave and will occupy the empty spectrum on the PU channel when not in use.

This Final Task analyze of system performance compares two algorithms with the output in the form of graphs of the observed parameters. The results of the simulation obtained greedy algorithm is superior compared to Water Filling algorithm.

Keywords: *Cognitive Radio (CR), Orthogonal Frequency Division Multiple Access (OFDMA), Primary User (PU), Secondary User (SU), Greedy Algorithm, Water Filling Algorithm.*