

## ABSTRACT

This Final Project tests the allocation process on the Visible Light Communication (VLC) system using the scheduling algorithm. The Greedy algorithm was chosen as the system allocation scheduling algorithm based on the Multiple Time Multiple Multiple Access (TDMA) technique. The test focuses on the process of allocating time slots whose number is less than the number of User Equipment (UE) available in a closed room and modeled as a Line of Sight (LOS) channel with a size of 5 x 5 x 4 meters. The Spread UE randomly in a room with amounts from 6 to 24 UE and each recipient's orientation is angled gradually between 0°, 15°, and 30°.

In the test results, the average value of Throughput increase in the number of UE increases by 0.034 % if the system uses the Greedy algorithm and power consumption is 2.19 times compared without used the Greedy algorithm. Changing the orientation of the receiver angle of 30° will get the average value of the smallest Throughput of 1444.096 Mbps and the largest at an angle of 0° with 1503.478 Mbps in variations in the number of UE. Then the system fairness value is influenced by the number of available UE with the highest fairness value of 0.833 when there are 6 UE and the smallest fairness value of 0.208 when there are 24 UE in the system. This proves that increasing the number of UE can increase the value of the Throughput and reduce the value of the fairness.

*Keywords: Visible Light Communication, Resource Allocation, Greedy Algorithm, Fairness,*