

## **ABSTRACT**

AGV (Automated Guided Vehicle) has been widely used in the manufacturing system as goods distributor vehicle that are rated more effective than other vehicle because it can be controlled automatically.

In this research, AGV need trolley as a container for the goods which will be delivered to another location. AGV and trolley can be connected because of there is hook system. Hook system can work if the position of AGV exactly in the center under the trolley. Initial condition of AGV that uses line follower system allows the AGV position before getting into the trolley is not in the exact coordinates because the trolley is placed not always in right line position. Because of that, required a system which can position AGV exact to center under the trolley in order to connect AGV hook to trolley. In this research, we used a Rplidar sensor on top of the AGV that will provide trolley position information such as distance and angles that will be processed in a processor, then be produced output that form as PWM for left and right motors DC in the AGV. PWM output of both motors in AGV will determine which direction AGV have to move to adjust with trolley position.

Both of right and left sides should have equal distance and angle. It is measured from Rplidar sensor midpoint. In the experiment result, the AGV is able to reach the certain position and succeed to hook the trolley . The result of experiment show the error that occur big enough caused by tolerance from rplidar sensor.

Keywords : AGV, trolley, Rplidar