

ABSTRACT

The application of automation technology in the industry is growing at the moment. Many industries have started using automated vehicles to facilitate human work, especially in the field of transportation. Therefore, the industry needs an automatic vehicle to carry goods from one point to the destination. Automated Guided Vehicle (AGV) is a vehicle that is controlled by an automated way using a navigation system that controls the movement pattern will follow a predetermined path. With this tool, the distribution of goods in an industry can be done quickly and efficiently.

This final project discusses the design and implementation of AGV along with the fuzzy logic control system to follow paths and navigation. Radio Frequency Identification (RFID) is used to determine the position where the AGV must hook the trolley, take off the trolley and stops. The line sensor used consists of 16 photodiodes which are arranged in one row and the setting made half a circle (downhill).

The test carried out in this final project is to find out the response of the movement performed by the fuzzy algorithm by reading the error position on the line. The average error of the movement is obtained when the AGV detects a turning path which is 90% with a black line placed on the surface of the light-colored. As well as automatic vehicles can move on lines that have been installed properly when the voltage is above 23.5 volts for the motor driver and can carry loads up to 14 kg on the trolley without affecting the performance of the robot.

Keywords: Automated Guided Vehicle (AGV), Fuzzy Logic, Radio Frequency Identification (RFID)