ABSTRACT

On the developments of industrial sector, Automation has become the core of manufacturing process and material handling. The process focuses on transferring goods from one point to another point. Automated Guided Vehicle (AGV) is transportation that move automatically on transferring goods. Automated Guided Vehicle is affected by loads when the goods are being transfered by trolley. The loads cause an unstable movement. Moreover, it also causes decreasing of production effectiveness and inefficient time. Industry need vehicle that has a stable movement although it is effected by load.

In this final project, writer design, implement and analyze the movement of AGV using fuzzy logic method. The system consider the speed of AGV that caused by loads. Input system are from line and encoder sensor that contained in AGV body. Process of information are output of right and left wheel speeds in Pulse Width Modulation (PWM). Setpoint is speed obtained from fuzzy processing with line sensor input. Then the final speed is processed base on the setpoint and speed chage from encoder value. Until the final speed on AGV will be stable.

The result of this research show that AGV produce a stable movement even the loads are given. The evidence is Automated Guided Vehicle movement that using fuzzy logic method and load 57 kg can produce speed of right and left motor. The different of speed is small in each experiment. The average of Automated Guided Vehicle speed when straight circumstances are left motor 63.15 PWM and right motor 63.15 PWM of 52 second. When AGV turn left, the average of Automated Guided Vehicle speed are left motor 58.34 PWM and right motor 78.05 PWM of 19 second.

Keyword : *Movement, Fuzzy Logic, Speed, Stability, Encoder.*