ABSTRACT

Increasing the need for robots in the industrial world is due to the increasingly tight competitiveness between companies. The robot has been implemented in all production lines to improve the efficiency and quality of a product against market demand. Automated Guided Vehicle (AGV) is one of the many robots used in the industrial world. AGV usually has automatic navigation and functions to move goods from one place to another. The lack of AGV is having an automatic tracking system that is still inaccurate in movement during industrial processes.

In this final project the author will design a tracking system to monitor the position of the wireless AGV-based movements. This study uses a differential steering algorithm to get the position of the x and y coordinates that will be displayed on the display. The speed and acceleration of the AGV wheels are calculated using encoder and accelerometer sensors that are taken from the data, then will be processed in the user into coordinate points.

As a result of this thesis research, the reading of the encoder sensor has an error range of 0.1493202 m in the straight path and has an error range of 1.8091 m in the path plan. The accelerometer sensor has an error range of 0.0370698 m in the straight lane and has an error range of 1.8586 m in the lane plan.
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Keywords: Automated Guided Vehicle, tracking system, position monitoring, Differential Steering