

ABSTRACT

At this time, the development of robot technology is able to attract more attention from researchers. Until now, various types of robots have been developed. One type of robot that is often used is based wheel robot tank, which is usually used to carry out exploration / pass through terrain that is quite heavy. Robot tank exploration is one of the wheeled exploration robot that uses wheels as actuator type tanks, thus enabling the robot to move in a variety of terrain is quite heavy, so the robot can do a good job on the field of heavy though.

One thing that is important to the Robot Tank Exploration is a tracking system that will be record the movement of the robot to navigate a place can be recorded / monitored by users indirectly. So that later no longer human dibutuhkan down directly in exploration in various places. In the robot will be equipped with a compass as a direction sensor advance robot and sensor Quadrature encoders, this sensor serves to determine the speed of the spinning wheel. The output of the two sensors will be used as reference in making the monitoring system on android.

The results of this research monitoring system based on smartphone magnetometer sensor / compass and quadrature encoders also applied to the Tank Robot Exploration as a data source distance and direction of the robot. Where this system is expected to show the movement that has been done and the direction of the current robot navigation on android, in accordance with the path that has been passed robot / specified writer.

With systems that have been tested on a straight motion at a distance of 1 meter using a scale of 1 (box) : 1 (meters) in the tracking system , it can be concluded manufacture tracking path have a percentage of error readings greatest distance of 18.064 % for a distance of 1 meter with the help of the value of the magnetometer , it is derived from testing the suitability of robot movements with tracking path on android.

Keywords: :Android, Tracking, Robot tank Exploration, quadrature encoders, compass