ABSTRACT

Mobile Robot is a robot which moves from one point to another with a specific mission. Mobile Robot is widely used in various human lives, such as robots for service, robots for the military, robots for transportation, robots for water, and so on. To make software on a mobile robot system will certainly be difficult, especially because the scale and scope of robotics will continue to grow following the development of the times. Because of that, to make it easier to design a robotic system in this study using a software robot platform called ROS (Robot Operating System). In ROS there are many tools, communication layers, and simulations for designing robotic systems.

In this study the input process is carried out using a camera sensor which must be calibrated in advance so that it can adjust to the environment and aims to measure the distance between the camera and the marker. The purpose of this mobile robot is to track the target where the mobile robot will carry out initialization in the form of rotating where it is found that the target robot will face the target and the robot will approach the target.

The testing scenario on Mobile Robot is done by testing the camera which as a vision sensor on the robot, detects targets from all distance conditions, influences rotating speed in finding targets, tracking tracking tests on silent targets in different angles, and the last test tracking on dynamic targets. And as a result the angular velocity in searching for markers is 0.3 rad / s, the linear speed in the tracking process is 0.1 m / s, the robot will stop at a maximum distance of the target of 10 cm. Reach the camera sensor on the robot to 60 ° to the target. The degree of slope of the marker in the position of the robot has faced the target up to 45 °. Robots only focus on one target, if there are other targets just detected

Keyword : *Robot Operating System, Object Tracking, Mobile Robot*