ABSTRACT

Multi-robot is a system consisting of 2 or more robots that work to complete a task. However, there are also frequent collisions between one robot with another and obstacles that are robot. Multi-robot collisions also occur frequently because the robot does not know the position of other robots and the embedded algorithm to avoid the collisions, is less efficient so it is difficult for Multi-Robot to complete a task quickly.

In this research will move in the Field of Multi-Robot consisting of 2 robots, where each robot aims to complete an unknown maze. As long as each robot is running, robot 1 and robot 2 always divide their position to each other, and the algorithm for the completion of the labyrinth is using the Right Wall Follower (RWF) algorithm with the implementation of fuzzy logic, where the algorithm is at once an algorithm for collision avoidance between robot with a maze and between one robot with another.

With those implemented methods into each robot for collision avoidance while in the labyrinth. Then the success rate on the collision avoidances occurring in the maze is about 73%. And the success rate of each robot running along the labyrinth with the RWF method is about 86%. With the successful time spent on Multi-Robot solving the maze is about 3 until 7 minutes.

Keywords: Multi-Robot Systems, Collision Avoidance, Right Wall Followe Algoritm, maze solver