ABSTRACT

Robots are needed to help human work at this time, until now robots are made with various functions. At this time, robots are very reliable in work that cannot be done by humans, including during disasters. After a disaster, there is usually a lot of rubble from collapsed buildings, making it difficult for people to know where the victims are. In this case, robot assistance to detect the victim's presence is needed.

In this study the author has designed a prototype 2WD Mini Round Double Deck robot using a single tone sound as a simple simulation of the sound of disaster victims. The robot will compare the closest sound based on input from sound sensors placed on the front, right, left, and back sides. The microcontroller used in this robot is Arduino. This robot is designed to use two wheels on the right and left and two wheels in the front with two DC motors that can run on a flat surface, with a slope of about 30º and an obstacle height of about 6 cm

Based on the test results, the robot can go to the sound source with 100% accuracy at a distance of 1-4 meters. However, at a distance of 5 meters, the percentage of success of the robot in finding the sound source is only 80% towards the front, 40% towards the right, 60% towards the left, and 60% towards the back. The overall average accuracy of the test for this 1–5 meter distance is 92%.

Keywords: Robot 2WD Mini Round Double Deck, Sound Sensor, Ultrasonic Sensor, Arduino