

ABSTRACT

The traffic accidents is the background from this research of the control system design and equipment on vehicles to avoid the car accidents. Therefore, it needs a technology and the right tools to minimize these problems by developing existing technologies in order to benefit our lives. The focus in this research is a definition of accidents between vehicles and using the right sensors and communication tools accident to know information about the accident and the data transmission information about the accident. Limit switch sensors and rotary encoder is a right sensor to take the definition of the car accidents. The accidents in this research is the experiencing collisions vehicle accidents experienced by a vehicle, named rear-end. For data transmission and sending the accident information using wireless module nRF24L01.

The result is the first robot car can send accident information with an average delay of 98.7 ms, with maximum delay of 120 ms at a distance of 100 cm between the robot car. The second robot car can cover a distance of 30 cm in a second (30cm / s). From the test results, the first robot car successfully transmit information before the second robot car crashed into the first car. Because, the maximum delay for the first robot car can send accident information is 800 ms by taking into account the speed of the car robot and the distance between the robot car, with the car speed of 30cm/s and distance between vehicles of 100 cm.

Keywords: *Vehicular Ad Hoc Network (VANET), Limit Switches, Rotary Encoder, Rear-End, Wireless Modules nRF24L01*