

ABSTRACT

Humans cannot escape from transportation, especially land transportation. Approximately 47 hours per year are spent on Indonesian roads due to congestion, therefore it is necessary to have a system that can regulate transportation so that it can run autonomously so that congestion, accidents and pollution can be significantly reduced. It is necessary to have a prototype before making the realization, therefore a road marking tracking system was created for autonomous vehicle prototypes based on the LiDAR sensor which is a wireless optical network. LiDAR sensors function like echolocation in animals, the only difference is that sound waves use echolocation, while LiDAR uses light waves, with it the vehicle can move autonomously.

The road marking tracking system designed using Arduino Mega with C programming. The prototype used as the base is a Remote Control (RC) car with a scale of 1/10. The system can be between the two markers on the right and left of the road with the tolerance that has been determined by the Fuzzy Logic Sugeno method.

The system designed to trace and be in the middle of the markings with an accuracy of 87.5%. Road markings tracking system is a solution to reduce congestion and accidents.

Keywords: LiDAR, autonomous vehicle, Fuzzy Logic Sugeno.