Design of Adaptive Cruise Control (ACC) on FI 110CC Matic Motorcycle Vehicles Using Arduino

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ABSTRACT

Right now there is a lot of advanced technology in vehicles, for example Adaptive Cruise Control, but its application is only done on luxury vehicles, the fact is that most motorcycle vehicles in Indonesia are automatic motorbikes, so the application of the Adaptive Cruise Control sistem needs to be done, so that automatic vehicle users are cheap and economical can feel the development of the sistem. then the Adaptive Cruise Control design is carried out. The method used is RnD Research and Development using Arduino Uno, LiDAR sensors, and Servo Motors, where the sistem will read the distance and change the vehicle speed. Research results prove that the sistem is able to change vehicle speed by turning the throttle body lever with the help of servo motor, the closer the distance to the degree of the servo motor the smaller the TPS reading, in the range 0 - 5.5 mode 1, 0 - 9.5 mode 2, and 0 - 18.5 Mode 3 The operation of this sistem can be done properly, with the use of the Throttle by Wire sistem and Adaptive Cruise Control and all data stored on the sd card The working distance on the sistem is at a distance of 900 cm as the maximum distance.

Keywords : Adaptive Cruise Control, Arduino, LiDAR, Servo