

# PROTOTYPE THROTTLE BY WIRE BASED INTERNET OF THINGS ON MATIC MOTORCYCLES

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## ABSTRACT

Factors of urban air pollution in Indonesia, such as: 1) The drastic increase in the number of vehicles, 2) The characteristics, type, and age of the vehicles used, 3) The type of fuel consumed by vehicles, 4) The habit of drivers in driving a vehicle / driving pattern. Increasing the ability of the driving pattern in reducing pollution can be done by adding vehicle management technology through the throttle. Throttle is part of the engine that functions as a controller for air entering the combustion chamber. Research group (RG) focuses on developing internet of things (IoT) integrated throttle control (TbW) to control air valve opening. Control compares the implementation of DC motor actuators, servo motors, or stepper motors. Generally, conventional vehicles are not equipped with throttle control on the ECU. Implementation and testing of the TbW control prototype using the internet of things (IoT) system. The implementation of TbW control is carried out on automatic motorbikes. Automatic motorbikes have a good response to changes in throttle for acceleration and speed, thus providing a significant reduction in pollution. The results of the study show the performance of automatic motorcycles that have been integrated with IoT. Throttle opening control can be done via wireless through the internet network. A good response occurs when the network signal is stronger with a long sending time of up to 100mS. The condition is reversed when the network signal is weakened with a long sending time of up to 500mS. Time delay can cause time out of sync between the electronic system and throttle control. The output of this RG research is in the form of journals, conference papers and TbW prototypes that are integrated with IoT.

Kata Kunci: *driving pattern, internet of things, throttle by wire*