ABSTRACT

Electric motorcycle are developing in the automotive industry nowaday. Because it is environmentally friendly and can make energy savings and long-term costs. Some problems in electric motorbikes are battery failures which will result in the failure of the entire vehicle system. To avoid this, the battery must be used wisely including estimating the health (SOH) state and the state of charge (SOC), where both parameters have not been well measured so that the mileage has not been easily estimated (battery runs out) and difficulty regulating charging , then the difficulty in finding the nearest battery charging station if there is a low battery.

The purpose of this final project is to create a data logging system through recordable voltage and capacity terminals of SOC and SOH-based batteries every 50 meters based on GPS data and then make communication of these results between electric motorbikes and third-party android applications in order to record data every 6 seconds. Followed by designing a data logging system prototype to make a data logging system based on an Android smartphone on a motorbike integrated with an Arduino ATmega microcontroller to facilitate data storage for each GPS-based mileage measurement and other variables that support the performance of electric motorbikes then using software engineering third-party applications by creating a graphical display of battery usage and performance of an electric motorbike so that the measured maximum usage is then determined where the battery must be recharged so that the implementation of the mileage monitoring system on this electric motorbike can estimate SOC and SOH through Recordable voltage terminals per 50 meters based on GPS data are then communicated to third-party applications on android smartphones with data sent per 6 seconds.

After conducting research on this final project the system managed to process GPS data and the realized system succeeded in recording battery voltage and capacity based on SOC and SOH and then communicating it to an android smartphone.

Keywords: Electric Motorcycle, GPS, Battery, Android