ABSTRACT

Increasing number of public transportation not only can fulfill transportation needs, but also becomes a new problem for the public that is not information position of the presence of public transportation in the city of Purwokerto. In connection with these problems the author makes the design of public transportation monitoring tools using the GPS tracking method. GPS tracking is a monitoring / tracking system and location determinant using GPS satellites accurately in the form of coordinate points that can be observed in realtime through digital maps. In this system using the Arduino UNO microcontroller which contains the SIM808 module to receive GPS data and supports GPRS connectivity, so that coordinate data can be sent and stored at Thingspeak as a server. The coordinates of the location stored on the Thingspeak server are displayed on a map in which there is a marker of the position of the vehicle and can be accessed through the android application on the user's side. The system design measurement resulted in an average system coordinate error in indoor conditions of 4,644 meters, while the average system coordinate error in outdoor conditions was 2,065 meters from the actual location coordinates. This system also produces a percentage value of the average packet loss, which is 0.333% and the average delay for every shipment to the server is 38.468 second.
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Keywords: Arduino UNO, SIM808, GPS tracking, Android