

ABSTRACT

Security and safety become one of the things that concern many parties. The number of crime rate on the highway with children as victims that increased by years, makes it necessary for parents to be more careful in supervise their children. Some local Governments today as in Jakarta and Bandung have started school bus program as a means of transportation for students. In addition to provide a convenient and inexpensive transportation, school bus a little more able to improve the safety of children than on public transport or private vehicle. However, sometimes the presence of a school bus still not able to effectively become solution for reasons of maintaining the safety of children. Therefore, a student school bus monitoring system was developed for parents to supervise their children while traveling on a school bus. In the implementation, this system using Arduino microcontroller, GPS module, WiFi module, and passive RFID. This system will read the RFID tag of the student and utilize the information recorded in the system to provide a notification containing the student's location information up / down from the bus via smartphone app correctly. In addition, to improve the location accuracy of the student's bus, Kalman Filter method is used which gives an accuracy increase of 0.714 meters.

Keywords: *Monitoring System, School Bus, Passive RFID, Kalman Filter*