

SMS Based Kids Tracking and Safety System by Using RFID and GSM

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ABSTRACT

In present time due to increase in number of kidnapping and road accident cases, Parents always worry about their children. This paper proposes a SMS based solution to aid parents to track their children location in real time. The proposed system takes the advantage of the location services provided by module kit which carry by the Childs in their school bag. It allows the parent to get their child's location on a real time map by the geographical coordinates which send by the module kit. Information such as GPS coordinates and time are gathered and sent to the parent's phone that's preregistered on the module kit. The communication between the parent and the child module kit is done using Short Message Service (SMS). SMS offers the system unique features. It will allow the system to work without the need of internet connection. The system sends the location of child's smart phone to parent's smart phone when the parent wishes to check on the child.

Keywords: RFID (RADIO frequency identification), Global Positioning System (GPS), Child Tracking System.

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I. INTRODUCTION

In this prototype, GSM and GPS module kit, RFID, RF receiver and HT12E-HT12D is used. When the child leaves home, RFID will interface with the module kit; this module kit contains GSM and GPS which is in constant communication with parents' mobile. There is another RF receiver at school gate which can interact with RFID and disable the module kit when the child enter in the school. In this a MODULE KIT and RFID tag is given to the child. When the child leaves home RFID reader turns on the module kit via RF communication which is GPS and GSM enabled. Parents get the location of the child via GPS. Sometimes school bus drivers drive the bus above the threshold limit, so our system limits the maximum speed of school bus. A sensor is connected with school bus speedometer which ensures that threshold speed of bus is not exceeded. If bus exceeds the threshold limit then the module kit gets ON via HT12D and GSM sends message to the parents. As the child will enter the school, the module kit will get turn OFF due to RF interfacing with the school receiver and the parents will get a message - "your child has reached safely". The main advantage of our system is that it

works automatically, the child has nothing to do with this kit, it will be simply kept in his bag.

Block diagram:

School Bus Unit:

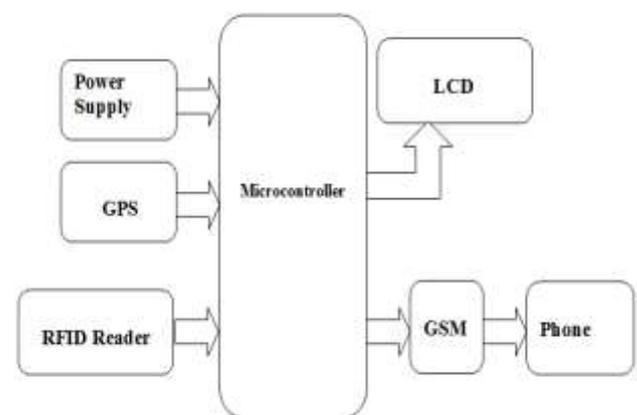


Fig. 1

School Unit:

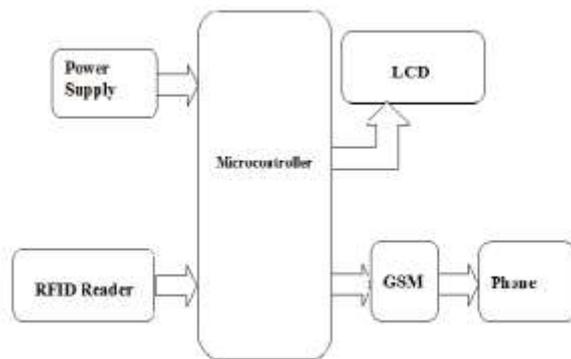


Fig. 2

II. DETAILS OF THE SYSTEM

RFID:

Is used to turn on and turn off the module via HT12E.

GSM/GPRS Unit:

It will contain module for transferring data, SMS to the external entities viz. relatives and parents.

GPS Unit:

It containing cohesively made GPS module for obtaining the longitude and latitude of the kids location.

Sensing Unit:

The sensing element will connect with the speedometer of the school bus for the security against the threshold limit of the bus.

RF Receiver and transmitter module :Its function is to guide RFID

LCD Display

We have used the 16 by 2 LCD that means that it can display the two lines containing 16 characters each. The Pixel Matrix is of 7 by 5 pixels that are each character can be displayed using 7 columns of the pixels and 5 rows of the pixels.

Advantages of LCD over LED display:

1) It can display numbers, characters and graphics, whereas LED displays are limited to numbers and few characters.

2) LCD has its own processor, so there is no need for refreshing it through micro controller.

ADVANTAGES :

- Safe & secure transportation of children
- Live data transmission in real time through GPRS
- Immediate SMS alerts to parents
- Automated tracking of students boarding disembarking from the school bus
- No child is left unattended on the school bus

APPLICATIONS :

- This project can be Used for school and school bus.
- This project also be used of tracking senior citizen elderly Person in our home.
- It can also be used for kids tracking, or we can human tracking.

PRESENT POSION OF SCHOOL VAN :



Fig. 3

III. CONCLUSION AND FUTURE WORK

In conclusion, this system was developed to aid locating children with their parents and this research showed that RFID tracking technology is a practical option for monitoring and tracking the children their trip to and from school on school busses. Lab and field trials confirmed that the RFID tags functioned well under different conditions. The readings were consistent and resulted read ranges that were acceptable within the constraints of locating children stepped into the bus, stepped into the wrong bus, left the bus, and left behind in the bus. In addition, the cost associated with tagging of materials is relatively low. It should be noted that the work completed in this research is the first phase of the project. Future work including combining RFID tracking with an information management system will result in detailed children tracking that will provide different application to the users. Once the next phases are complete, the system will be capable of notifying parents via SMS when the child enters/leaves the school, enabling school authorities and parents to keep track of the bus online, helping smooth and quick rides to the different destinations.

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