Smart Tracking System

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ABSTRACT - *Challenge for detecting human beings in big institutions. Whenever we want to find someone in mobile prohibited area, it is difficult to find them within a short period. This kind of circumstances should be avoided by mistreatment RFID technology. Previous analysis and development for indoor localization includes infrared, wireless LAN etc. These technologies suffer from the limited accuracy and lacking of the infrastructure. A similar research experiment on the use of global positioning system (GPS) had successfully been published in 2014. In this paper, the research was continued by combining radio-frequency identification (RFID) and GPS in order to get better Student tracking in both indoor and outdoor area. For indoor tracking, an RFID tag was carried by a user and continually read whenever Student accessed a School while GPS was used mainly when the Student was staying out of School. Thus this application is suitable to track the human position for both indoor and outdoor as well as helps to collecting student attendance in classroom using active RFID technology.*

Keywords: GPS, RFID, ADB, raspberry pi, human tracking, **attendance system, databases.**

1.INTRODUCTION

A human tracking research was carried out to allocate a person in an outdoor area by the use of GPS. The main purpose of this system was to identify student who sometimes got lost in a theme park or an outdoor sport center. In this system we tried to improve the previous system by combining the use of GPS & RFID which are installed in smartphone. For indoor area, an RFID reader was installed in each room and the user should tap His/Her RFID tag in order to be identified. However GPS would automatically identify the position of the user whenever He/She left the room. Both GPS & RFID would work simultaneously to track the position of the user. The system was developed as real time system. GPS one of the most well known. It is common to use GPS to locate a vehicle or an object in the outdoor environment. However GPS is not suitable for indoor environment because of it's limitations such as reflection or attenuation caused by obstacles, occlusion etc. hence we propose a new method that uses RFID technology & is used with biometrics technology for security purpose.

2. LITERATURE SURVEY

In 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 during 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.

3. DRAWBACKS OF EXISTING SYSTEM

In various institutions, the common problem faced is to locate the staff/student immediately when needed. Few methods, which are in use, are the old fashioned traditional announcement systems. The drawback is that the privacy of the staff/student is affected & it also interrupts the regular functioning of the institution. Generally, many institutions have monitoring cameras to monitor the activity of the working environment status, but it leads to certain drawbacks like the coverage area is small & in a crowded place, a camera cannot identify the exact staff/student needed, for it needs a human eye to recognize the presence of the particular staff. In such case, the accuracy and reliability fails.

4. SYSTEM FLOW
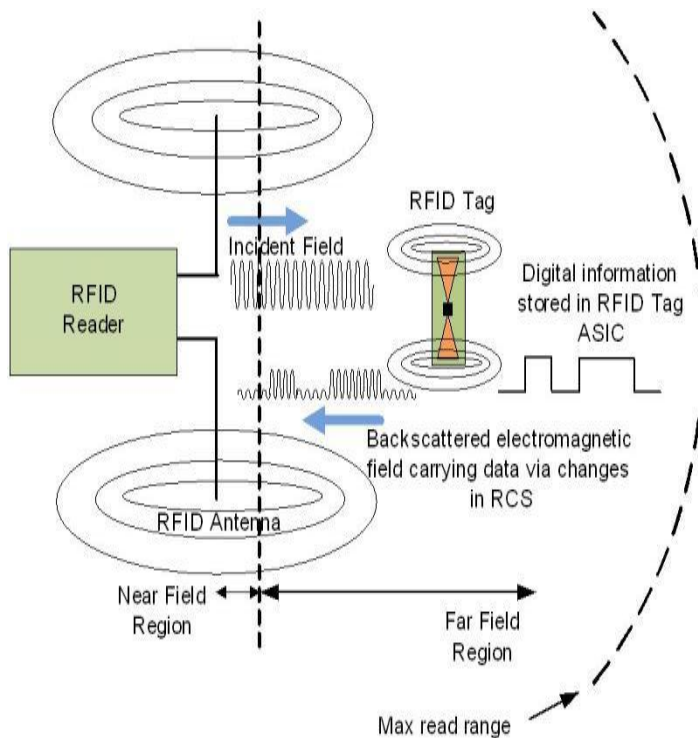
5. METHODOLOGY

1. Implementation of Reader Unit:

The reader unit is in the classroom, which reads the RFID tag of the staff & student entering into the class. It consists of the power supply unit, PIC 16F877A, MAX 232, RFID reader and tag.

2. Implementation of Tracking Unit:

The tracking unit is in the staff room, which is used to track and display the location of staff & student using the LCD. It consists of the same components as in the reader unit except that the RFID reader and tag is being replaced with the LCD and keypad.

3. Air Interface:

The air interface used here is ZigBee. The main focus of ZigBee is to distribute work among many different devices which reside within individual ZigBee nodes which in turn form a network.

6. CONCLUSION

The security system endeavours the safety transportation for the school children during daily outing. The system uses RFID for detecting the child weather boards or leaves the bus along with the stopping of the children. The message will be sent simultaneously to the parents & the school. The detail of the boarding and leaving the school bus will also be updated in database. The GPS used is to track the position of the bus if it goes after than the usual path.

7. REFERENCES

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BIOGRAPHIES

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