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Global Bus Monitoring and Alert System

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Abstract: **-- RFID is a technology similar to that of barcode scanning. An RFID system consists of tags, which use radio frequency signals to transmit its location information to an RFID reader. This project presents by placing RFID reader in the buses and the RFID tags in every alternative bus stop which are then displayed on the mobile. This system thus describes is a cost-effective and easy to implement the scheme for tracking buses in real time.**

I. INTRODUCTION

This is a system which aims to provide real time bus purse and display of the estimated time of arrival of buses at various stops. Currently, when a person has no way of knowing at what time their expected bus will arrive at their stop. He has to wait till the bus arrives, and if it had just left, has to wait till another one arrives. A solution to this is proposed here, with the help of RFID technology. RFID works as a combination of a reader, which can read information from tags. Readers can be passive RFID systems, where the reader and reader antenna send a radio signal to the tag, and tag then uses the transmitted signal to power on, and reflects energy back to the reader. These can operate either in low, high or ultra-high frequencies, with low covering frequency covering 30 KHz to 300 KHz, high frequency covering 3 to 30 MHz and the ultra-high frequency covering 30 MHz to 3 GHz respectively. For this system, the ultra-high frequency readers will be efficient, since they work anywhere in the 5 to 12m range. RFID tags can either be transponder, where a transponder replies with the stored message only when the reader sends a signal. It can also be programmed to relay information at fixed intervals of time.

II. RELATED WORKS

Other than supply chain management, which has the largest application scope for RFID technology, it is being studied and implemented in the transportation sector as well. The use of passive RFID tags for location identification in RFID based transportation systems. This passive tag send location to the reader once it comes within its range, and thus the reader notes and sends the location, Wherein the tags are placed along the roads at fixed intervals and the RFID readers are placed in the buses. Also, it would not prove to be feasible since readers would have to be placed in buses, with the cost of the readers being high. This work also examines the advantage of RFID technology over GPS. It argues that GPS works effectively only in the scenarios where there is a direct line of sight between the reader and the satellite, thus hindering the system performance in case of weather changes and other unavoidable phenomena. In another similar work, propose a solution combining RFID and WSN (Wireless Sensor Networks), where the reading range of an RFID reader is incremented with the help of a WSN network, to improve detecting the tags in vehicles from a wider distance.

III. PROPOSED WORK

This requires identification of all the bus routes and a suitable encoding scheme that costs less. The individual bus routes in the system are thus encoded. The architecture of the proposed system is illustrated in Figure 1.It requires passive RFID tags holding the bus code to be placed in all the buses and low frequency RFID readers to be placed in bus stops from one another. As the time of arrival of buses at these stops are predicted by approximation. Once a bus comes within reading range of a reader at any stop X, the bus code is read from the tag and is passed to the system placed in the stop, and the earliest time at which it would arrive at the next stop. Once all this is known, it alerts those subsequent stops about the arrival of bus, time and destination of the bus considered.

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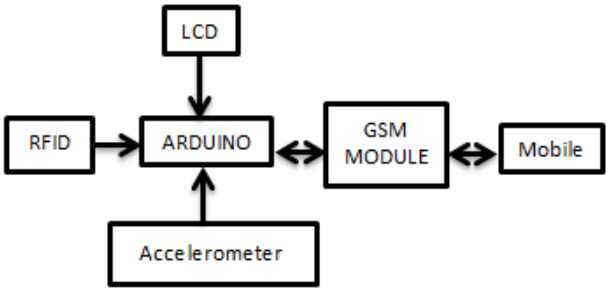

Fig1: Block diagram

Passenger will get an alert when bus starts at the source point. Emergency alert system: It gives an alert message to the management in case of any accident. Transport department gets the message as soon as the bus reaches the college. It displays the duration at what time the Bus arrives to the stop. Once the student boards into the bus, that particular student doesn't get the alert message. The bus starts at the first stop and the reader at that terminal collects the bus number from the tag. Easy navigation and localization. This system is useful for management to monitor driving behavior of employees. Time will be saved to the traveller. Since the passenger gets the alert message, there is less chance of missing the Bus. During accident, management gets an alert message which helps to take immediate action and save passengers.

IV. CONCLUSION

The system is developed by well-known technologies RFID and GSM. The developed systems do not require special hardware for RFID. Time of user will be saved and there will be a good time management. Using of RFID will be cost effective. So this project presents a system which provides high practical value in the modern fast era.

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