



IJIRCCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 10, Issue 6, June 2022

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.165

 9940 572 462

 6381 907 438

 ijircce@gmail.com

 www.ijircce.com

Bus Indication Using RFID

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ABSTRACT: The need for efficient public transportation system such as buses is rapidly increased due to the increasing in population. The passengers need to know the accurate arrival time of the particular bus to particular station and then plan their journey from their home visually challenged People to make them easier traveling without depending on others. This system consists of two sub systems Bus indication system & Bus Station system. Here RFID TAG is placed in the bus station. The zigbee is used to transmit the data whenever the bus reaches near to the bus station. The RFID tag placed in the bus station conforms the location of the bus is reached. The GPS is used to provide the location of the bus and the GSM is used to track and send message to the user. This method provides easier identification of bus location. There has been a considerable amount of decrease in stock shortage with the use of Radio Frequency Identification (RFID) technology. Most of the RFID networks include a wide range of automation technologies. RFID provides effective communication facilities for the users. The technologies are RFID readers, RFID writers, RFID barcode scanners, RFID smart sensors and RFID controllers. Our idea is to track the bus timing using RFID. The RFID transmitter card is attached to the buses and it has a pin number, the RFID receiver is fixed in the bus stops and has a display of bus number and bus timing of the buses which crosses the bus stops. The software has been handled for the management, controlling, transaction reporting and operation tasks for bus stop located on various parts of the city.

KEYWORDS: RFID

I. INTRODUCTION

Our project is to save time for the people who use their mode of transportation as town bus to reach their destination. The passengers have to wait for long time without knowing the presence of buses in the particular area. Our proposed system would be useful in areas where there is only limited number of buses available. Bus tracking system using RFID would help the people to view the bus number and timing (IN and OUT) in the display and they can choose their alternatives in case of either delay of bus or passenger. The manual works in the depot can be computerized and stored in the database for future use. Radio-frequency identification (RFID) is the wireless use of electromagnetic fields to transfer data, for the purposes of automatically identifying and tracking tags attached to objects.

II. RELATED WORK

In 2015 shared Ajay Shingare, Ankita Pendole, Nikita Chaudhari and Parikshit Deshpande, Prof. Samadhan Sonavane, "GPS Supported City Bus Tracking & Smart Ticketing System", International Conference on Green Computing and Internet of Things (ICGCIoT). Now-a-days increasing density of vehicles on road is becoming the problem for the traffic control. Ultimately arising obstacle in the managing and tracking of the vehicle. Because of the problem state, it is necessary for every organizations and individuals to track the vehicle. People will monitor and track their vehicles for the safety concerns with the help of our Android app. Public transport and private buses tracked to citizens with traffic and transportation details like location, crowd, etc. The proposed system will be used for the positioning of the bus from remote location. The Smart Card based ticketing module which swaps the card to the smart hand held device for the transaction purpose. The smart ticketing device will also contain the dynamic routes as per the bus depot. The smart device has enhanced with the GSM and GPS technology and made available with required necessary configurations which makes it very efficient than that of the existing system. The location of the bus can be observed continuously using GPS system. The GPS satellites transmit signals to a GPS receiver. These receivers statically receive signals. GPS satellite transmits data that indicates the location and current time of the vehicle. The Smart Card provides, identification, application processing along with data storage. Every passenger will carry the smart card. The Smart Card holds information of the user such as available balance, identification number, user's information. These smart cards are capable of recharge. By integrating both GPS technology and smart cards we are going to design a whole bus ticketing system. Whenever the passengers will enter in the bus he/she will be asked by the conductor whether he/she

wants to buy ticket by using smart card or money. If smart card is used, then the conductor will swipe smart card. Then validity and of smart card will be checked with server and then the ticket will be issued. According to Source and destination the distance covered by passenger is get calculated and according to that bus fare amount will be reduced from smart card. The smart cards will also useful for conductor for fast issuing the tickets to the passengers.

In 2016 Shared S, Bagavathi Sivakumar P, Anantha Narayanan V, "The Smart Bus for a Smart City - A real-time implementation", 2016 IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS). The need for a real-time public transport information system is growing steadily. People want to plan their city commutes and do not like waiting for long hours, nor take a long route to reach their destination. The proposed hardware solution in this paper computes the shortest path to reach the destination in real time and gives that information to the bus driver. Artificial Neural Networks (ANN) is used to give an accurate estimate of the arrival time (ETA) to the commuter by means of an application. ETA to the next stop is communicated to the commuter using the MQTT (Message Queuing Telemetry Transport) protocol, by the hardware mounted on the bus. The proposed solution also adds a fleet management console to the administrators, making them manage and monitor the fleet of buses in real time. The prototype thus developed makes sure the commuting in cities is pleasant, and hassle free. The existing platforms and applications that are used to assist commuters plan their travel uses mobile data for the connectivity and communication and GPS to get the real-time location of the bus (or other means of transport) relative to the commuter. There are solutions that offer a limited accuracy in metropolitan cities. However, these solutions are not available to the other cities and also, they rely on historical data to provide information. The Intelligent Transport System (ITS)s based solutions can be studied to overcome these pitfall, would help the commuter to effectively utilize the public transport which includes lower waiting time. There are many implementations of Intelligent Transport System all around the world, each solution designed to address a specific demographic region. There existing solutions like tram TRACKER by Yarra Technologies in Melbourne, Australia and Google Maps is always there to cater the needs of the metropolitan commuters. The components of ITS Technologies are the wireless communication like Wi-Fi, WiMAX, RFID, etc. and computational technologies like AI, Real time data processing, etc.

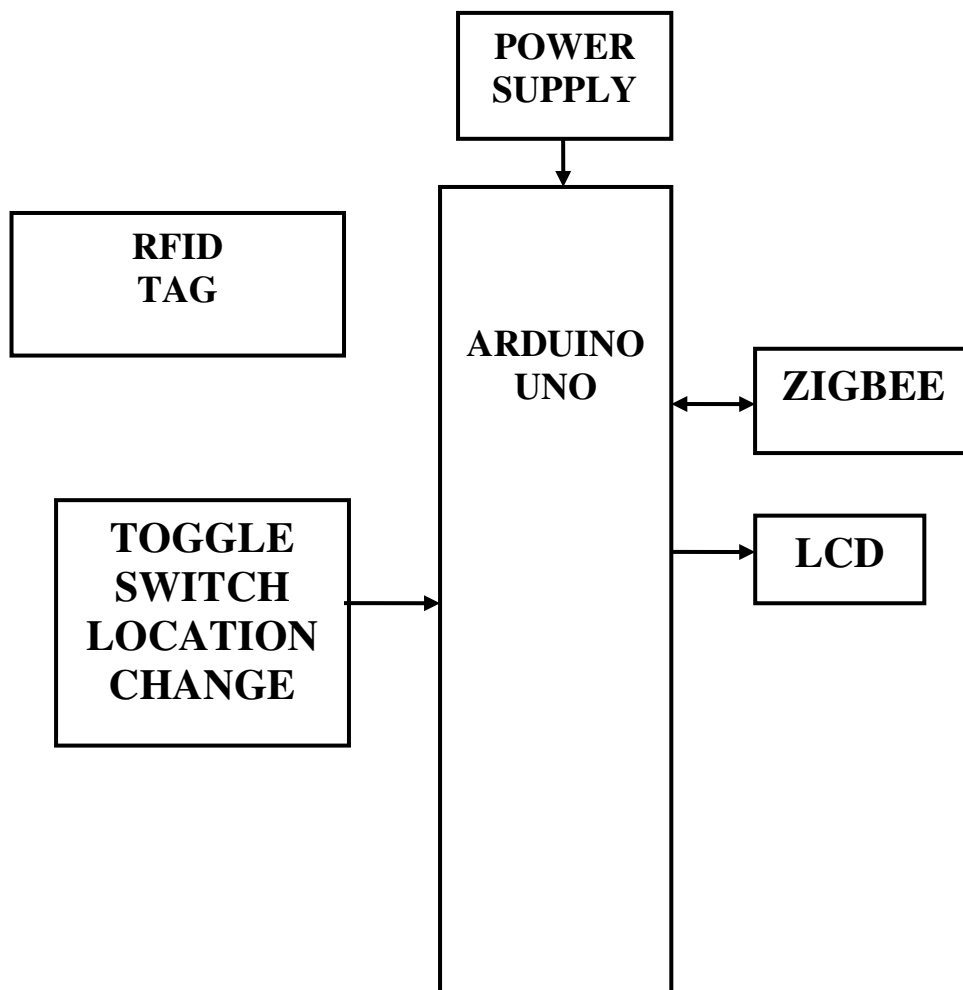
In 2017, R.C. Jisha, Aiswarya Jyothindranath, L Sajitha Kumary, "IoT based school bus tracking and arrival time prediction", 2017 International Conference on Advances in Computing, Communications and Informatics (ICACCI). While opting for the public-transport, time and patience are of more concern. We can also say, passengers travelling on public-transport found their loss of time due to waiting at the bus-stops. This system is providing a real-time vehicle tracking via Global-Positioning System (GPS) technology to detect the location of the bus and to use internet by a general packet-radio service (GPRS) technology to display live images on the Google Map or website app for tracking location of buses anytime. We are using the GPS and GPRS modules, the GPS module will locate the buses via the satellite, and the GPRS module will collect all data and send it to the website. The buses will be monitored live using coordinates with this system. Also by implementing geofence, user get notify once bus entered in his/her predefined area. We are developing an Android-application which will give the real-time schedule of buses. Also, it provides quick and real-time replay for inquiry, via the server. Also in case of any unexpected activities or breakdown, the alert will be sent to the system, with Bus location. The transportation system provide as the heart in the social and economic-growth of the country. As the population in India is increasing, rapid explode in rate of vehicles which results in an overload on traffic management. Public transport is becoming an important part of transport system in urban areas, advance in easily available technology Can be enforced which help the passenger who recalculate between a rural and urban to-get the travelling information and it helps the passengers to comfort them with the final real time location. Public transport mainly the bus sluice has been properly developed in many parts of the world. For reducing the fuel-usage, snobby usage of car and comfort traffic crowding we can use the bus services. Passengers require the exact schedule of bus. The anxiety of passengers increases while waiting for a longtime at the bus stop and changes their mind to opt for the buses. Many passengers are usually on-time for office and many students restarted to their classes as they determine to stop for the buses instead-of taking another mode of transportation. Goal of system is to decrease the complexity and cost of content these services by implementing Easy-Tracker, an auto system for the transit-tracking and advent time prediction.

In 2016 Reshma Rathod, "Smart assistance for public transport system" International Conference on Inventive Computation Technologies (ICICT), Volume: 3. In this paper we have provided public Smart Assistance in Public Transport System. The project is to be implemented for public bus (for ex: PMTs in Pune). It has the entire smart assistance system required for public security and safety. The smart system includes safety for women as well. It has accident detection and monitoring facility. It also has user friendly application for user to track bus on smart their phones. The smart system can be designed for both online (GPS) and offline (GSM) for user friendly service. Here, GPS system is used to get real-time coordinates for offline (GSM) system. It allows user to save its time by acknowledging no. of persons present in the bus as well as no. of seats available in the bus along with the current and next stop acknowledgement with its arrival timings. It also has ramp for handicap people to provide them ease to use the bus service. It also has driver authentication system using RFID tag. The system also has many additions feature to make public transport system an intelligent and easy to use system, so that public can take smart advantage of it. The system is specially designed for Smart Cities as it is trending now-a-days. The basic idea of producing smart public transport system is to be developed on ARM system using GPS/GSM technology. The basic need to develop this system is to minimize public time issues related to public transport system. Features to be

implemented in the system are vehicle tracking (online/offline), availability of no. of seats in the vehicle (bus), engine heat monitoring in the bus, women safety, accident detection, and various other features. A Smart Assistance for Public Transport System is to be designed. The Public transport selected is Public Bus. The issues related with public transport bus are taken into consideration. The issues such as bus arrival time prediction, no. of persons available in the bus, safety for women's, accident detection and safety, alcohol detection for driver, speed limiter and indicator, ramp for handicap people, driver authentication using RFID tag and bus report to public through online/offline options are available. In this paper we are focusing on offline system. The basic methodology used is GPS/GSM.

III. PROPOSED METHOD

In existing system, the passengers wait at bus stop for a while. New persons do not know the exact bus route of the bus in bus station. Our idea is to track the bus timing using RFID. The RFID transmitter card is attached to the buses and it has a pin number, the RFID receiver is fixed in the bus stops and has a display of bus number and bus timing of the buses which cross the bus stops. Our proposed system would be useful in areas where there is only limited number of buses available. Bus tracking system using RFID would help the people to view the bus number and timing (IN and OUT) in the display and they can choose their alternatives in case of either delay of bus or passenger. The manual works in the depot can be computerized and stored in the database for future use. Radio-frequency identification (RFID) is the wireless use of electromagnetic fields to transfer data, for the purposes of automatically identifying and tracking tags attached to objects.



IV. RESULTS

In this proposed concept, Output design generally refers to the results and information that are generated by the system for the passengers and admin. Output is the main reason for developing the system and the basis on which they evaluate the usefulness of the application. The output design specifies the results. The output design is one that provides a customized page to the end user. The output design acts as a medium of communication to the user by providing feature linearly polarized antennas that provide high directionality and therefore high orientation. The reader communicates with the tags that are within its field of operation. The reader uses an attached antenna to capture data from tags. It then passes the data to computer for processing. Just like RFID tags, there are many different sizes and types of RFID readers.

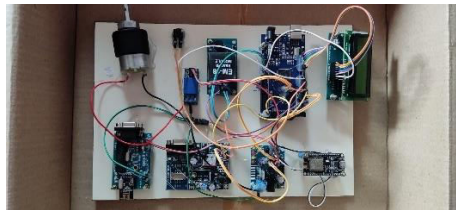


FIG 1 PROJECT SNAPSHOT

Our project would be a helping factor where the passengers could get the details about the presence of bus in the particular area or not with our application. The bus number and bus timing of the buses will be displayed by using the automated technique RFID. It is also help to maintain the bus details periodically. The required information can also be retrieved from the database easily and it also reduces the manual work. This system would provide a effective communication facility with the user

V. CONCLUSION AND FUTURE WORK

It is also help to maintain the bus details periodically. The required information can also be retrieved from the database easily and it also reduces the manual work. This system would provide a effective communication facility with the user. Our project will be enhanced in the future with the use of GPS which will provide the current position of the bus before the arrival to the bus to particular stop. It can also be used in the ambulance were we could know the position of the ambulance so it will be useful to clear the traffic in the upcoming positions.

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