

**International Conference on Emerging Innovation in Engineering and Technology
ICEIET-2017****Automated fair collection system for passengers in vehicles using
barcode ticket and RFID reader****C.V.Venkatasamy, Gunapriya.S, Prabavathi.P,**

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ABSTRACT

In this paper includes an automated fare collection System from passengers who are all in the onboard of the bus. It avoids the conductor and ticket checker manual works completely. For each passenger bus tickets will be provided in the bus situations. The bus ticket consists of a barcode that will be scanned by passengers in the RFID reader, which will be provided in the bus stations. The bus ticket consists of a barcode that will be scanned by passengers in the RFID reader, which will present in each of the bus seats. An alarm sound produces in each station to alert the passengers all these information from starting point to end of the bus stop, about passengers On-board/ off-board will be displayed by LCD which will be present in front of driver. This is the proposed system which is going to implement in an embedded field.

KEYWORDS

LCD, Radio Frequency Identification (RFID), Tag with barcode.

I. INTRODUCTION

For several years, the proposed system has monitored in the abstract haven't been implemented. The execution of the proposed system will be implemented. The execution of the proposed system will be implemented in embedded field. It is nothing but open source hardware and software system to implement executes this concept successfully. Compare to all other fields, an embedded is the suitable for the developing embedded field uses various recent processors. Some of the processors are 8051 controller, Pic controller Atmel controller, Arduino atmega controller and Raspberry-Pi. This concept has been implemented in Arduino controller processors that replace RS232 cable wire into USB cable wire. The advantage of the Arduino atmega controller is straight to the processors.

The system presented here, is an intelligent system of automatic fare collection through bus ticket tag which consist of barcode and that will be sensed by radio frequency identification reader. In this proposed system the conductor and ticket checkers are not necessary, only the bus driver will operate the module and passes the information to passengers. An automatic onboard and off board information will passes to the higher official through global system for mobile communication (VGSM).

In this system, reducing of manual work by human being is simplified. An unwanted expenditure of funds allocated to the transport employees is isolated.

II. LITERATURE REVIEW*I. Magnetic-stripe*

Public transport ticketing in New South Wales, Australia operated using magnetic-stripe technology between 1989 and 2016. This ticketing system, known variously as the Automated fare collection system, STATS and, from 2010, My-Zone, was progressively replaced by a contactless smart card called Opal between 2012 and 2016.

II. Metro-Ten

An automated multi-ride ticket system called Metro-Ten, based on optical mark recognition rather than magnetic stripe technology, was used on Sydney's government buses from 1985 until 1992. In general, however, many Sydney commuters used paper tickets specific to the mode of transport on which they were purchased until the mid-1980s.

III. PROPOSED SYSTEM

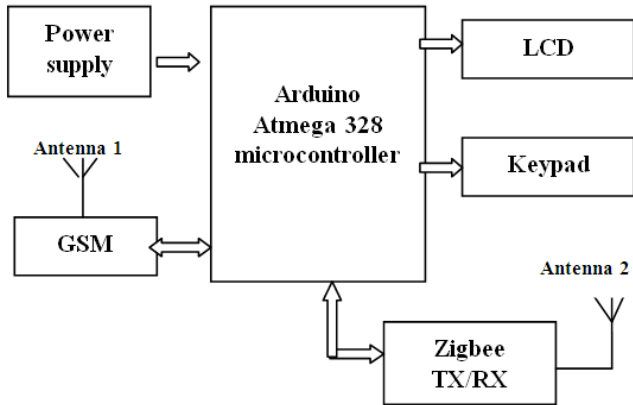
Automatic fare collection system to avoid the man Power work and reducing money expenditure from government funds onboard/off board passengers ticket information will be checked by the driver through electronic LCD display in the onboard of bus and these information passes to higher officials. In this system, the passengers and driver modules communicate each other through ZIGBEE transceiver. In long distance journey, the point to point destination onboard/off board information will be viewed by bus driver through LCD. The driver can also give an

information of the particular passengers who are all not forget to step down from the bus, even though their respective destination has been reached.

present in the passengers module in this barcode ticket will be scanned by RFID reader at a particular [point to point destination information.

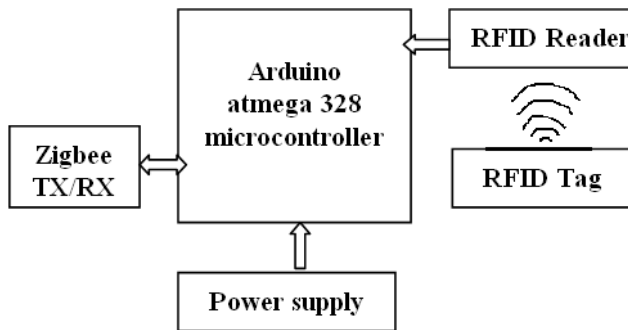
IV. SYSTEM OVERVIEW

i. Driver module



ii. Passenger module

iii.



In this paper the two modules have been created, one module is driver module that consists of ZIGBEE, LCD, keypad, GSM. These are having been interfaced with a processor called as Atmega328 Arduino microcontroller. The keypad is used to give information to the onboard passengers inside the bus that is used as an alert system or a remainder for the passengers in each destination. An LCD is used to monitor the onboard and off board passengers in point to point destination by bus driver. A Zigbee module is the interface communication between the passengers and driver module. More over in the driver module the GSM has been included to send information of passenger’s capacity and availability to the ticket checkers or higher officials.

An another module is passengers module that consist of a components such as ZIGBEE transceiver, RFID reader, that reads the barcode ticket information of the passengers who will be seated in the respective sets, The RFID reader and ZIGBEE transceiver will be interfaced in the ATMEGA328 Arduino microcontroller which will be

The Atmega328 Arduino microcontroller has an advantage of direct dumping of programs, the speed gain operation is 0-20MHz, are all inbuilt peripherals such as two 8-bit counter, 8- channel 10-bit ADC, 4 bidirectional ports all re input output digital ports the flash memory has 4 K bytes, EEPROM have 256 bytes, RAM has 512 bytes and interrupt vector has one instruction set. Now an Arduino based will be credit card sized that replaces a RS232 cable wire instead of USB cable. That is useful for direct dumping of program. The Arduino is otherwise called as Genuine Uno.

An Arduino C-Complier is used to execute the embedded C programs (i.e.) used to upload the programs in the Arduino Atmega328 microcontroller through USB port which is present in Arduino board. An embedded C is the combination of assembly language and high level language. The embedded system are programmed using different type of languages that is machine port, low level language that is assembly ,high level language like C, C++, JAVA, Ada, etc., and application level language like visual basic scripts, access, etc.

In this paper, the GSM (i.e.) global positioning system module has been interfaced in the driver module which is used to uplink and downlink the frequency is 892-950 MHz and downlink frequency is 935-960MHz. The GSM provides dual operation and uses the FDMA and TDMA technology. The GSM module is interface with Arduino board that modules support 900MHz band that use called as SIM900 GSM module

LCD is the technology used for displays in notebook and other smaller computers. Like light emitting diode (LED) and gas-plasma technologies, LCDs allow display to be much thinner than cathode ray tube (CRT) technology.

A liquid crystal display is the flat panel display or other electronic visual display that uses the light –modulating properties of liquid crystals. Liquid crystals do not emit light directly. A miniature keyboard or set of buttons for operating a portable electronic device, telephone or other equipment.

RFID (Radio Frequency Identification) uses electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically stored information passive tags collect energy from a nearby RFID reader’s interrogating radio waves. Active tags have a local power source such as a battery and many operate at hundreds of meters from the RFID reader. Unlike a barcode, the tag need not be within the line of sight of the reader, so

it may be embedded in the tracked object. RFID is one method for Automatic Identification and Data Capture (AIDC)

V. CONCLUSION

The proposed system is consolidated applications of RFID, ZIGBEE and GSM technologies. This paper described a methodology for estimating the passengers onboard/off board information, and their information reaches to the bus driver through Zigbee communication and again the sum information reaches to the higher official through GSM the scope of this paper is automated fair collection system without conductor for the passengers journey in the bus. This paper can be developed further, for estimating the time of passenger's journey by using GPS, GSM.

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