An Exploration of Continence of Impact Using GPS& GSM Tracking System

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Abstract: As population is procreate,it results to the monstrous slat of the vehicle on the road and hence leads to an augmentation in the problems concord with traffic management.In this paper,urge the tracking system based on various concepts like intelligent transport system(ITS),satellite modem,RFID(radio frequency identification),Raspberry pi,GPS,GPRS,GSM,etc. By inducting this we can guide the tracking system of the vehicles using GPS system. The main impulsion of this work is to bring out with an above mentioned conceit of tracking system which is an inventive additional device that can permit individual to enjoy the flexibility in motion and develops an advanced sense of confidence and self-reliance.

Keywords: GPS,GPRS,GSM,ITS,RASPBERRY PI,RFID,SATELLITE MODEM

A. Introduction

The GPS consign the current location of the vehicle,GPRS disconcert the tracking information to the server and the GSM is used for dispatching alert message to vehicle's owner mobile. The paper is correlated as explained further section- I provides a detailed literature survey on integration of smart phone and IOTfor development of smart public transportation system.Section- II speak for an arduino based implementation.Section -III goes on to brief explanation using satellite. Section-IV and Section-V presents an RFID and raspberry pi persuit of the proposed architecture.

B. Literature Survey

1) Integration of smart phone and IOT for development of smart public transportation system

The Intelligent transport system(ITS)Band-Aid the solution for these problems with visitation of mobile technology and the omnipresent of instinctive network,real time vehicle tracking for efficacious transport management has become piece of cake[1].By using the combination of GOD and Android which gives satisfaction for the passengers who cruise by the means of public transport.From the proposed system,a simple android and IOT based approach which can provide charismatic bus tracking information to the bus stops as well as commuters in an efficient manner.
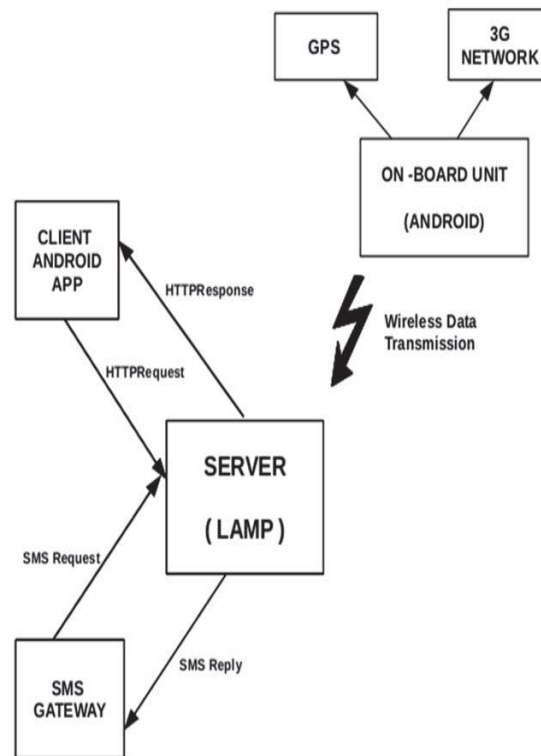
Fig. 1. Block Diagram showing the high level view of the system

From fig 1,the architecture is divided into two parts(i.e) on-board unit and server on board unit mainly consists of GPS and 3G network which is placed in vehicles to provide the information in royal and keen manner.Where as,server receives http request from the client through Android App and it responds to the requested client which has been received from the ON-BOARD UNIT through wireless data transmission.The another way of sending request and reply is done by SMS gateway.

Furthermore,mass transit has good approachability in big cities,making it easier to travel to any part of the city, making buses a beneficent option to elect for. It provides personal mobility and freedom for people from every ramble of life [1].

2) Real time Google map and arduino based vehicle tracking system

A vehicle tracking s/m provides the information from locality to other at any instants of time. In this paper, the Google map and arduino based vehicle plays a major role for tracking system which is implemented using GPS & GSM. GPs provides the information of location, whereas GSM transmits the information of location in terms of latitude & longitude through SMS also the arduino based vehicle tracking S/M consists of two parts namely hardware and S/W.
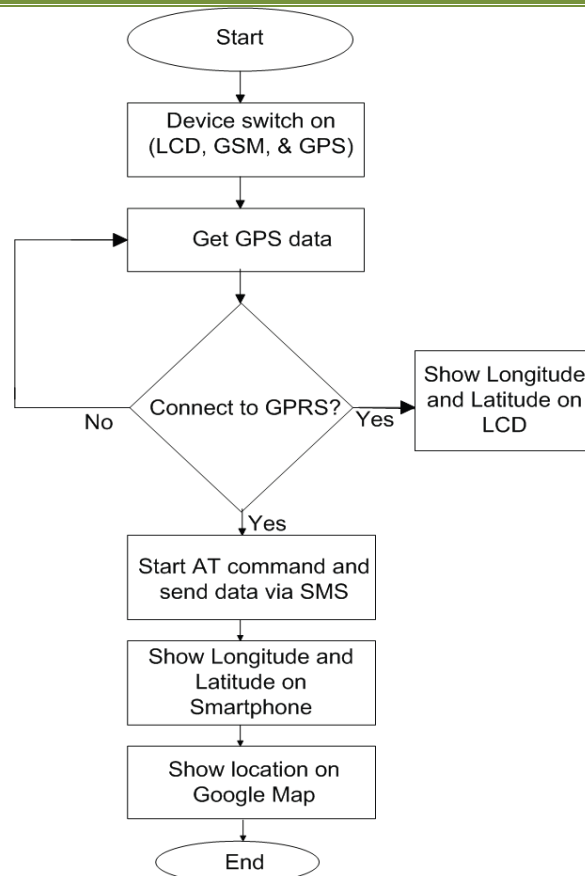
Fig2.represents the flowchart of the proposed tracking S/M.

The Arduino based vehicle tracking system has two parts - the hardware and software specification. Hardware specification consists of Arduino UNO board with microcontroller, GPS and GPRS shield, LCD. In software specification, Aurdino IDE software , Google map is us. At first, +5 volt DC power is supplied to GSM and GPRS armament, Arduino UNO board with microcontroller to activate those devices. Arduino is used for controlling the process with a GPS receiver and GSM module.GPS receiver worked on 9600 baud rate is used to receive the data from satellites. The data is sent to the Arduino which reads coordinates by extracting $GPGGA String from GPS receiver, and forwarded to GSM in terms of coordinates (latitude and longitude). GSM module sends the coordinates to user/owner by SMS so that he can track the vehicle around the big blue marble, and watch the live position on Google map. And an optional 16x2 LCD is also used for displaying coordinates.[2]

2.1 Applications of the system
The low cost Arduino based vehicle tracking system can be used widely in tracking cabs/taxies, stolen vehicles, school/college buses etc. Furthermore, guardian can easily track down school going children for avoiding accident. If the system is equipped with a bus or train, it will save time and avoid waiting for a long time of passengers. One can also find the proximal taxi by using this technology. The system can be employed fleet management systems, and intelligent transportation system (ITS), as well as tracking human and animal in jungles. It can be used by food delivery and car lease companies also.

2.2 Advantage of the system
(i)As Arduino and GPS and GPRS armament is used, it reduces the complexity of the system.

3)   An innovation implementation of indoor positioning system using GPS

Global positioning S/M is worn by GPS tracking unit to resolve the exact location of the user. The observer data can be transmitted to a data base or computer allied device by funds of radio, cellular satellite modems which is embedded on that unit. Satellite navigation is principally the funds of several methods of decisive or planning an object's position and course by geometry. Global navigation satellite system proffer the user with a three dimensional positioning solution by passive ranging weild radio signals transmitted by orbiting satellites. This divination of positions principally hinge on the number of satellites that are accessible at a time. Availability hinges on the constellation or geometry of satellites. Good satellite geometry is wangled when the satellites are accurately spread out in the sky[3].
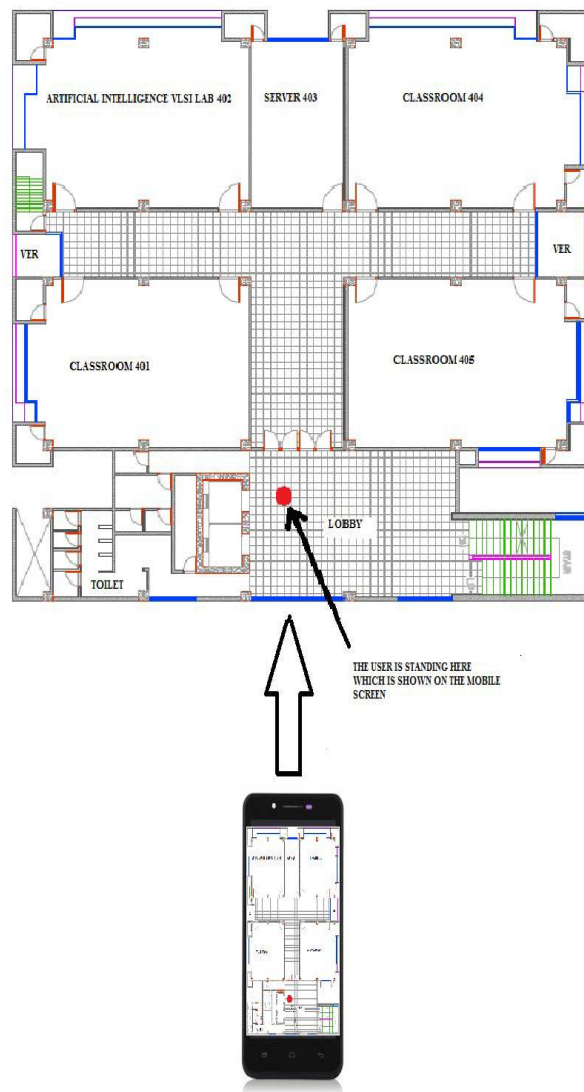

Fig.3.The hypothetical output on mobile screen.

From the fig 3, the proffered idea is to contrivance this system at any academic institution. Any outsider visits the institution can fluently find his terminus by using this tracking system. The mobile phone will act like a GPS receiver and it will urge him towards his terminus showing his position in the campus. All condign information will be procurable in the information database. The cellular network or Wi-Fi can ingress the server. Positioning technologies will succor the individual to reach his unequivocal location by providing precise position data and requisite user interface. We have rehearsed a hypothetical view on the mobile screen of this system which is implemented for the 4th floor of a building of that institution,in which the user position is

indicated by a red dot. This dot will stroke with repute to the user position showing on the mobile screen in the form of map.[3]

4) HEAL- Health monitoring in Emergency vehicles with their Authentication by RFID and Location tracking by GPS

Cloud computing is a hasty technology which is planted on virtualization technique where RFID is a another technology worn for tracking objects. By integrating RFID technology with some massive cloud storage, a emergency vehicle similar as ambulance, fire engine are contrived traffic free by hold up other vehicles[4]. RFID tag is stowed on the emergency vehicles which are riffled by the RFID reader stowed on traffic signal. Then GPS concept(which is also worn to track the place of the vehicle) is used meanwhile, we have to polestar on the patient' health condition chiefly heartbeat, pulse and so on.

a flashing blue light manifest a volunteer fire fighter retort to an emergency call[4].

a flashing green light intimate a volunteer ambulance service member react to an emergency call[4].

Flashing amber light indicates a hazard vehicle engaged in a hazardous operation.(snowplow)[4].

5) Advanced vehicle monitoring and tracking system based on Raspberry Pi

In last decade,we scrutinize the 'n' number of accidents and vehicle theft activity and numerous hazards conditions.In this paper,it translucently describes the advanced vehicle monitoring and tracking of the system proving embedded linux board.By this system,it is benevolent for the children's safety and also proffer accurate arrival time of the vehicle at meticulous location or stop.It also preclude from leakage of the LPG gas.
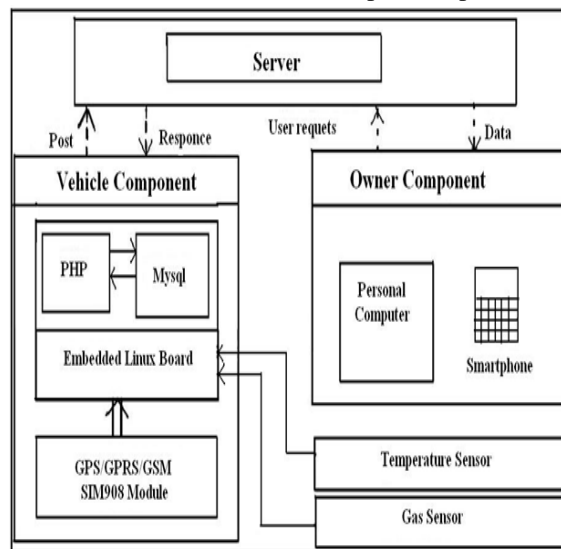

Fig. 5. System Block Diagram

The contigrnt system would get jurisdiction with the succr of Raspberry pi which placed inside the vehicle.The GPS GPRS GSM SIM908 module would get divulge to raspberry pi board with USB interface.The longitudes and latitudes of the current path acquired from GPS of GPS GPRS GSM SIM908 module get correlated with the hoarded longitudes and latitudes in the meticulous file format inside the directory of raspberry pi.Also the longitudes and latitudes of the current path honored from GPS will get sent to the server with the succor of GPRS which succors to track vehicle's current location on the web page worning smart phone.Here for tracking the vehicle,the contigent system proffers login facility on web page for vehicle's owner,students and their parents, also student's safety gets provided with the succor of DS18B20 temperature sensor and gas leakage sensor MQ6.These sensor gets interface along raspberry pi.If the temperature crosses the

specific value or LPG gas get leakage inside the vehicle then the alert message will sent to owner.Likewise the safety mechanism proffered by the system[5].

C. Conclusion

From the above retrospect it is clear that various techniques are feasible to avoid accidents and vehicle theft.We have reviewed different approaches by different researchers for monitoring and tracking.Generally in all the papers they uses the GPS/GPRS techniques to monitor the variations and alert the owner and driver by using various networks.The overall aim of this assay provides various methods to sheild the vehicles.

D. References

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