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A Survey on Performance Comparison of Stolen Vehicle System for Smart City

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***Abstract:** This project is about the design and implementation of vehicle tracking system using GPS & GSM technology. The proposed system includes integration between a GPS receiver, Arduino and a GSM module. This combination of technology will produce a tracking system. A tracking system is an integration of two systems which is coordinated by GPS receiver controller and control by user using command interface through the GSM module as a transmitter and receiver of data. This project can be divided into two main parts which are hardware and software. The hardware development included the GPS and Arduino wiring connection, and its integration with the GSM module.*

I. INTRODUCTION

A vehicle tracking system consists of an electronic device installed on a vehicle used for tracking vehicle through its owner or third party for its position. Now a days vehicle tracking system uses GPS to get an accurate reading of the vehicle position. A combination of cellular (GSM) and satellite transmitter will be used for transmission of vehicle position to remote user software on a computer the vehicle information can be viewed.For security system, a vehicle tracking system may be used as either an addition to or replacement for a traditional car alarm. The existence of a vehicle tracking device is used for the purpose to reduce the insurance cost, because the loss of vehicle drop reduces the vehicle tracking is very is very useful in many other application such as assert tracking scenario to track valuable assets for insurance or to track-real time assets location on a map and closely monitor movement and operating status.For mobile sales where the situation of sales professionals can easily access real time location. For example, unfamiliar areas, they can be marked as customers and prospects will get driving direction and last appointment to itineraries. This system has its ability to reduce mileage hence reduce the fuel costs through monitoring private use of vehicle.

Advantages include productivity, reduced during time and increased time spent with customer and customer aspects. It removed the fuel efficiency and also reduced the average speed of the vehicle productivity can be increased with the help of better budgeting of a time and resources.

II. DIFFERENT TYPES OF VEHICLE SAFETY PREVENTION METHODS

A. A smart vehicle tracking system.

The base of vehicle tracking system lies in shipping industry. We need some sort of system to determine so know where the vehicle at present time and how long it can travel.

In this project microcontroller is used for interfacing with various hardware peripherals the current design is an embedded application so microcontroller is interfacing with the GSM modern is useful for identification of vehicle through position. .

Block Diagram

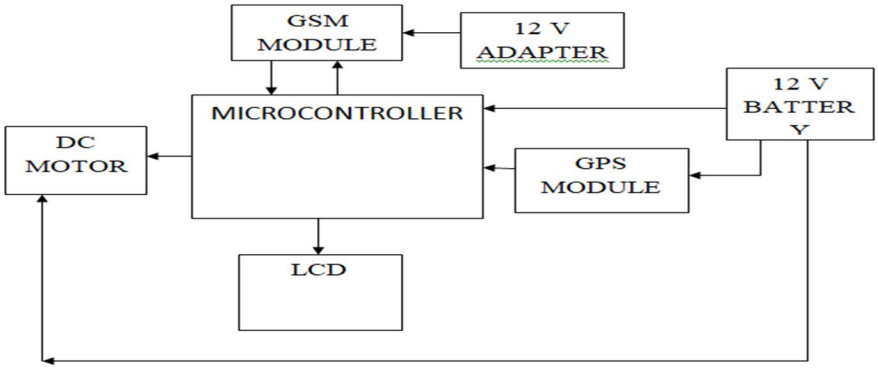

Figure 1: Smart vehicle tracking system.

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1) *Performance:* The regulated power supply is to provide voltage or current to a circuit operation with certain power supply limits regulated power supply generally gives embedded circuit and the output form the regulated power supply is unidirectional and it is mostly dc.

Regulator IC is consist of three pins IC which is used as voltage of 5v. AC adapters are generally used with electrical device the required voltage and mains power for supply.

B. A Anti – Theft Protection Of Vehicle By Gsm And Gps With Fingerprint Verification

Now a day burglary cases are increased to huge amount so it is necessary to provide outstanding security for vehicle form burglary so for more secure framework utilization of GSM and GPS innovation is mandatory. The aim of real time tracking and active notification to prevent form theft.

By using Google maps we can trace the location of present position of vehicle by the use of automobile repossessing is possible we will convey the message in such a format that will associated buzzer and power supply of engine in automobile user can easily deactivate the engine of the automobile form his cellphone and can be available to retrieve the automobile.

Block Diagram

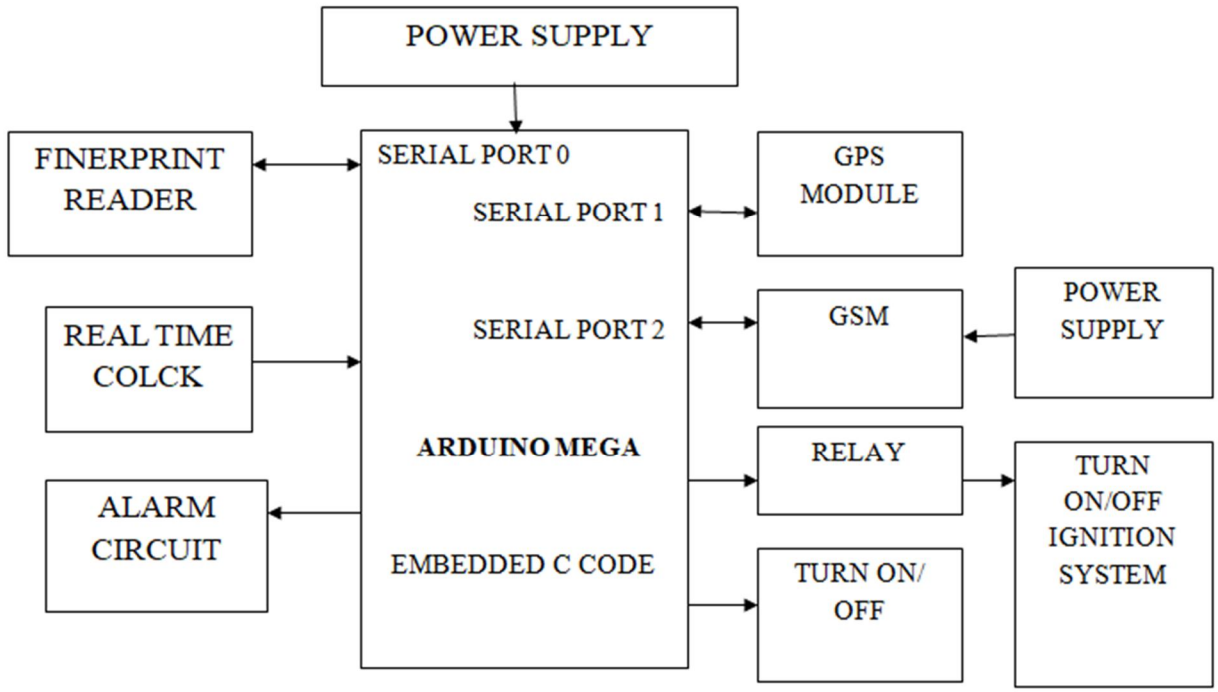

Figure 2: block diagram of vehicle ignition system. .

1) *Performance:* The arduino mega 2560 microcontroller is an available microcontroller on the ATMEGA 2560 it consist of 54 digital input and output pins out of which 14 can be used as PWM output, 16 are analog input, 4 are UARTS, 16MHz crystal oscillator, USB connector, power jack an reset button. The arduino can be powered through USB connection or external power supply. The recommend range is between 7 to 12 volts.

C. A Vehicle Tracking System Using GPS – GSM Technology

Here the microcontroller used is PIC16F72. The 8061 is an 8-bit controller with various input and output port features. It requires lesser hardware for its functions it has only 16 bit pointer register. The major drawback of 8051 core is does not have A to D convertor the system is designed for vehicle theft and tacking system that gives information on demand of the new location of vehicle.

In Google map when the stolen vehicle changes it location form receiver information of GSM module know the location form GPS satellite and transmitter data to the microcontroller. The registered SIM card receives message thought latitude and longitude the exact location can be identified the output is displaced on the LCD as per user requirement.

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Block Diagram

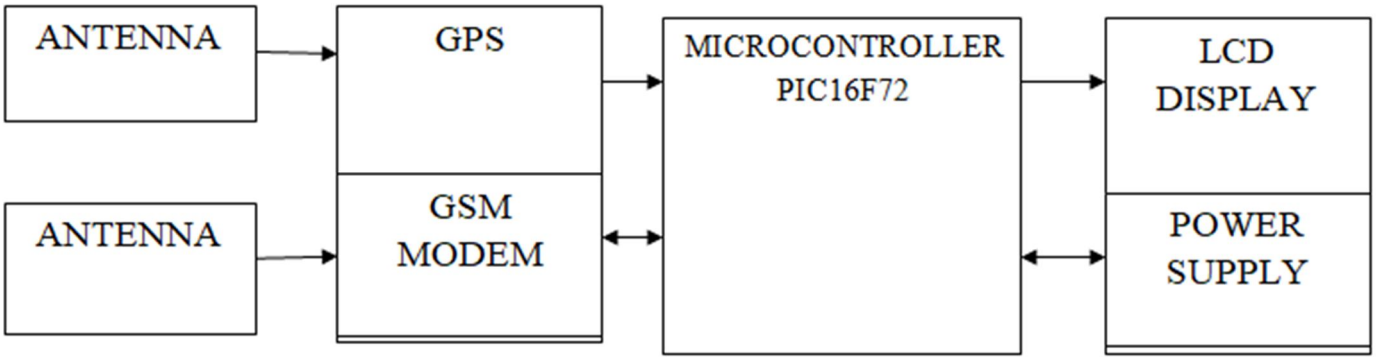

Figure 3: Block diagram of vehicle tracking system.

1) *Performance:* The Proteus software was used for both simulation and the PCB design. The arduino compiler was used for program and compiles the microcontroller. The system mainly works by receiving the message form a mobile phone thought message command we can track the vehicle and command is used to send SMS. The message is send to register SIM card number in the GSM modem. The location sends in the form of latitude and longitude position.

D. A Smart Vehicle With Gsm Alert System

The system is used for performing three operations such as controlling the theft vehicle, tracking with the help of GPS and accident alert system. When user packed the vehicle after these activates GPS system then it will send continuously packed location of vehicle and also send SMS when the location of parked vehicle changes.

Ones the SMS send then owner will stop the engine thought GSM system thought GPS location of stop vehicle is being known when an accident is alert with someone the user himself injured and the SMS send to all the family member police station and ambulance.

Block Diagram

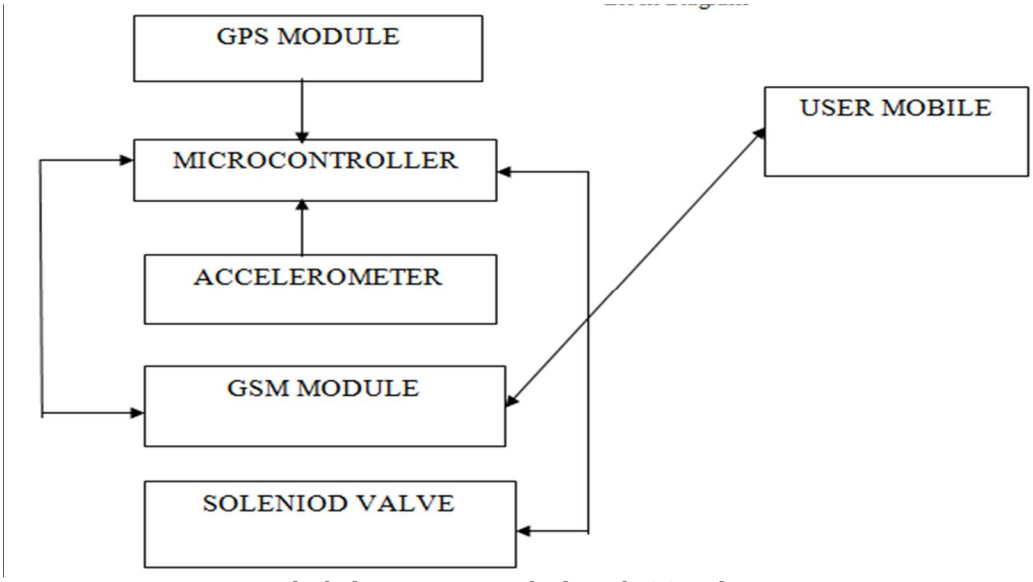

Fig.4. Block diagram smart vehicle with GSM alert system.

1) *Performance:* The simulating is the basic concept on which the project works we are using proteus7 a multi tool simulation software that give equivalent circuit that will give ideal on how actual components will be interfaced. Arduino IDE open source programming software is useful to code and will detect the theft as well as send and receive message for controlling that is GSM module.

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E. A. Smart vehicle monitoring system using iot

Due to the roads accident major death occur all over the world according IIHS survey it is announced that can be reduced by proper implementation of the IOT system. The behavior of the driver cannot be managed but can reduce the death after accident. The basic principle of the project is to reduce the number of death that occurs due to the lack of treatment at the proper time. The system is currently at the unpolished level.

Block Diagram

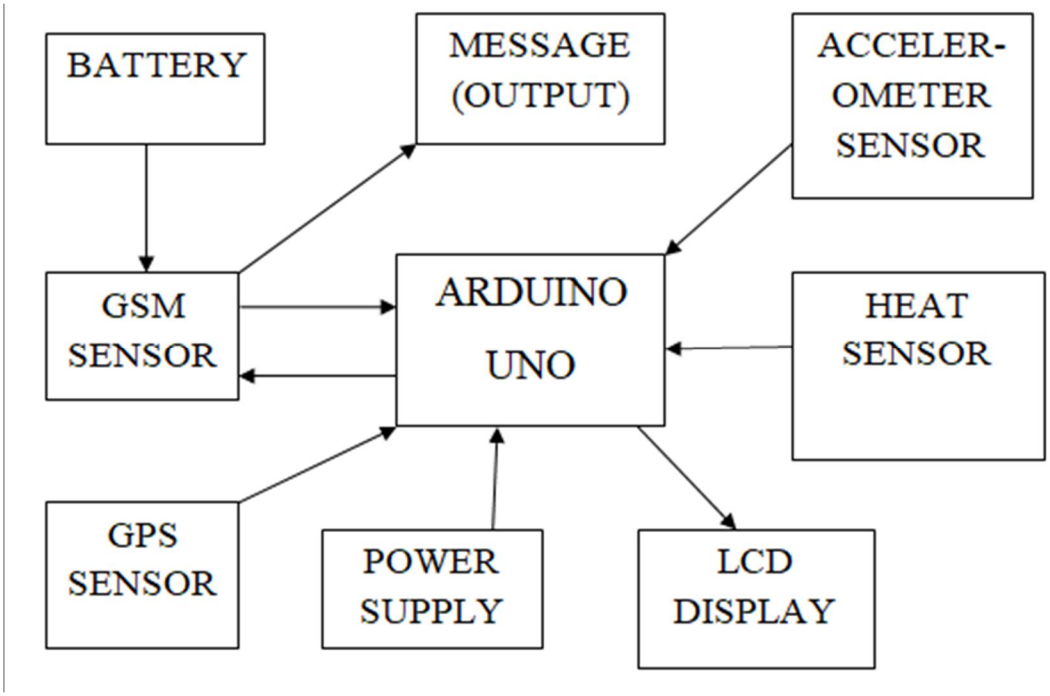

Fig.5. Block diagram of monitoring system using IOT.

1) Performance: Arduino Uno is microcontroller based where if processes the data form sensor and it to the output display unit it consist of input and output units it also have digital pins which is 14 pins out them six pin are used as PWM output. Apart from these six analog pins which are sensor and give the output in the analog form of signal. The power can be supplied by USB cable and power jack heat sensor where used for sense the temperature and gases released which is dangerous to human life. .

III. CONCLUSION

In this paper, we present the comparative study of performance of reported stolen vehicle system for smart city. Which is Ardiuno based and can be carried anywhere that is it completely portable. This can operate indoor as well as outdoor. The program will successfully be implemented using the GPS a GPRS to track the vehicles in real time.

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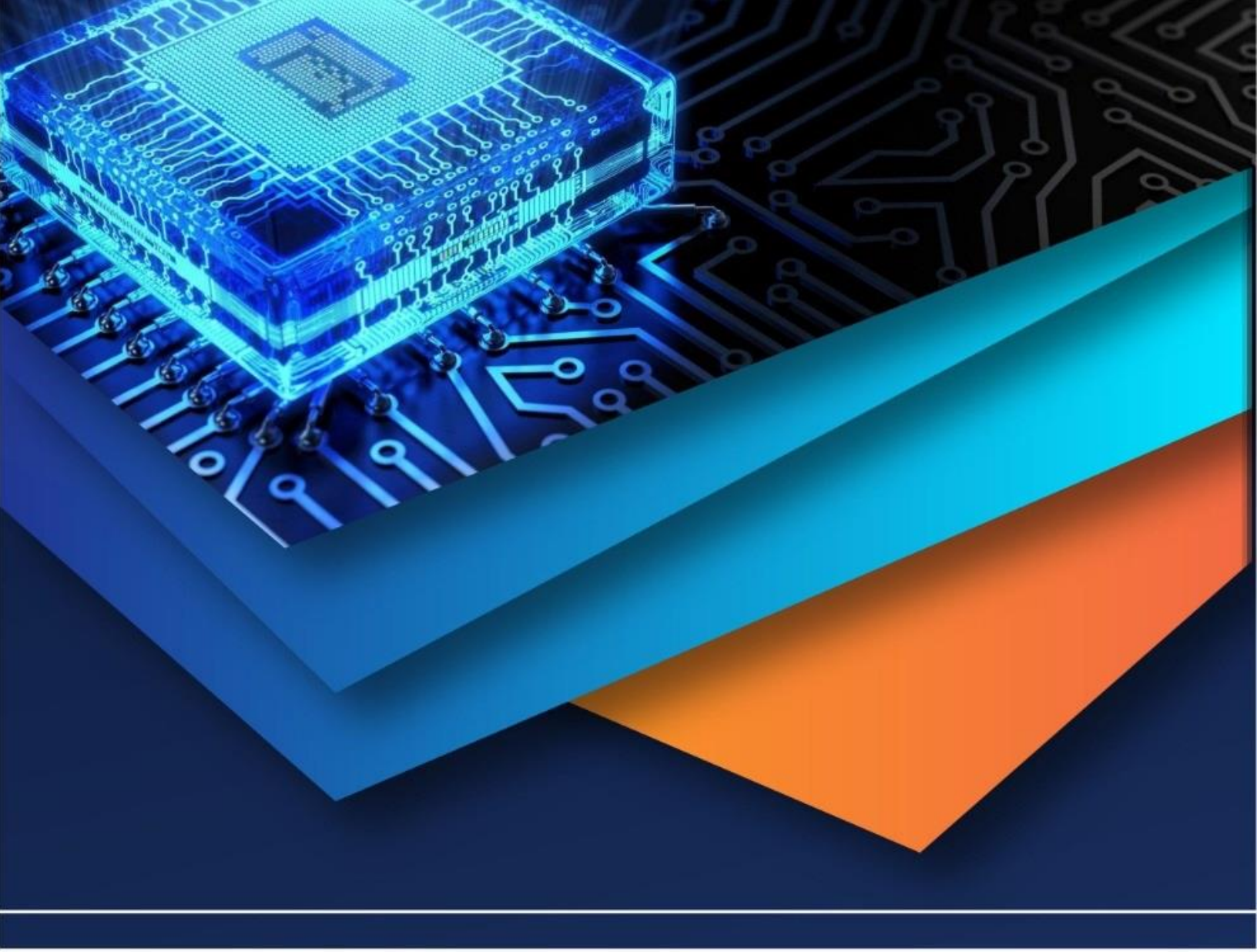

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