



TRACKING SYSTEM WITH THEFT CONTROL AND ACCIDENT INTIMATION THROUGH SMS

¹Dr.P.A.Nageswara Rao,²P.Susmitha Bindu,³Ch.Varshitha,⁴P.Girish Kumar,⁵G.Pavan Kumar

¹Associate professor, ²Student, ³Student, ⁴Student, ⁵Student

^{1,2,3,4,5}Department of Electronics and Communications Engineering

^{1,2,3,4,5}Gayatri Vidya Parishad College for Degree and PG Courses (A), Visakhapatnam-530040, India

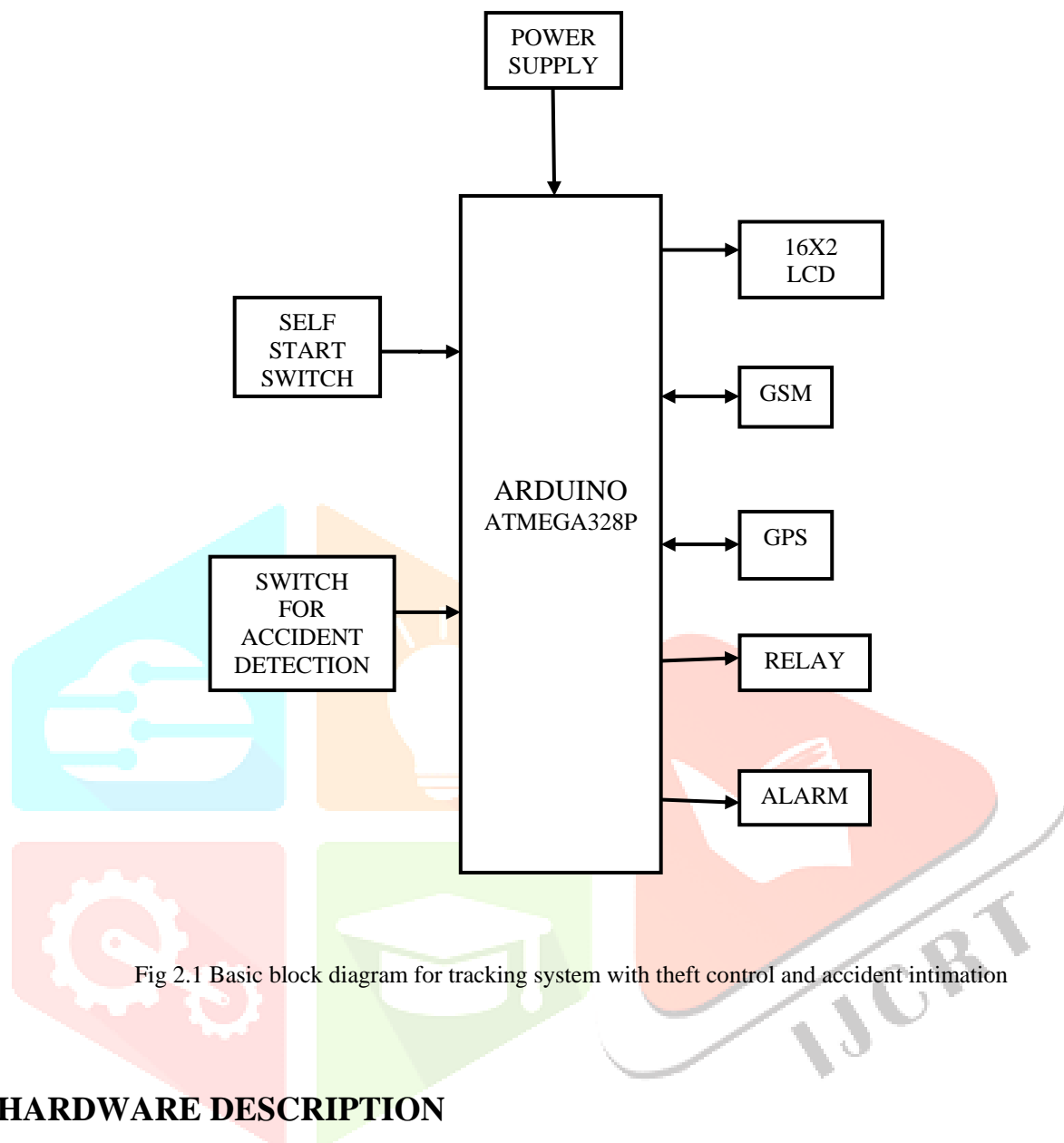
Abstract: As the usage of vehicles is increasing rapidly with the growing population the number of vehicle thefts are also increasing day by day. And also the number of deaths due to the accidents in the remote areas are also increasing. As accidents are one of the major causes of deaths the road safety has also become a challenging task. According to reports thousands of vehicles are being stolen every year and recovering of the vehicle had also become a tough job as most of the stolen vehicle parts are separated and sometimes they are sold to other persons as second hand vehicles. According to road accident report lakhs of accidents took place in the country every year. And hundreds of people are losing their lives everyday due to the accidents as there are not getting help at the right time. This project is used to provide solution for the vehicle theft situations and also to prevent the loss of lives due to accidents in the remote areas.

Index Terms - Vehicle theft, accident, Arduino, GSM, GPS

INTRODUCTION

Now a days, it became very difficult to find the vehicle when it is stolen and sometimes it is not even recovered and many people are losing their lives in time between when the accident occurs and the injured is taken to the hospital. The new trends in technology provides better and secured environment to the humans. This project eliminates the problem of both accidents and theft. In this system Arduino, GSM and GPS technologies are used. The GSM, GPS and other components are connected to the arduino. GPS is used to find the exact location of the vehicle in terms of latitude and longitude. GSM is used to send and receive messages by using a sim card. GSM works exactly like a mobile phone with a sim inserted in it.

II. BLOCK DIAGRAM



III. HARDWARE DESCRIPTION

A. ARDUINO

Arduino is an open source platform based on microcontroller and development environment for writing, compiling and uploading software code. The Arduino in this project is based on microcontroller ATMEGA328P. The software code is written in the Arduino IDE platform and it is connected to the Arduino board using a USB cable for uploading code into the Arduino board. Arduino can be used for beginner and intermediate projects.

- Easy to use
- Low cost
- Programming is easy



Fig 3.1 Arduino UNO

B. GSM

GSM means Global System for Mobile Communications. GSM is used for sending, receiving and deleting SMS messages. In this project GSM is used to send messages to owner whenever a vehicle has started or when an accident is detected and to send the location of the vehicle. AT commands or instructions are used to control GSM modem. Every command line starts with AT so GSM modem commands are called AT commands. Some of the AT commands are AT+CMGS is used to send SMS, AT+CMGF is used to select the operating mode of the GSM modem, AT+CMGR is used to read SMS messages.

C. GPS

GPS means Global Positioning System. GPS is a Global Navigation Satellite System (GNSS) developed by the United States Department of Defense. GPS is a US based radio navigation system that is used to provide positioning, navigation. It is used to find the accurate and three dimensional location in terms of latitude, longitude and altitude. In this project GPS is used to find the exact location of the vehicle in terms of latitude and longitude.

- Navigation
- Defense
- Military
- Tracking
- Mapping

D. ARDUINO IDE

Arduino IDE is an open source platform which is used for writing, compiling and uploading codes to the Arduino boards. IDE means Integrated Development Environment. Arduino IDE is developed in Java and it can support C and C++ languages. Arduino IDE supports operating systems like Windows, MacOS, Linux.

IV.WORKING

The owner of the vehicle needs to press the self start switch in order to start the vehicle. Then the relay switch will be ON and the engine starts and the owner automatically receives a message from the GSM modem that the vehicle has started. In case if the vehicle was not started by the owner then he can send a predefined code to the GSM modem then the engine automatically stops working and also we get the current location of the vehicle. Otherwise if the owner wants to know the location of the vehicle then he can send another predefined code then with the use of GPS the exact location of the vehicle will be known. In case of accident situations the switch which is used for accident detection will be automatically pressed and sends a signal to the Arduino in order to activate the GSM and GPS modems. The GPS modem identifies the location of the accident and the GSM modem sends the information through SMS to the family members and the nearby hospital.

V.OUTPUTS

After making all the necessary connections the output system looks like below figure

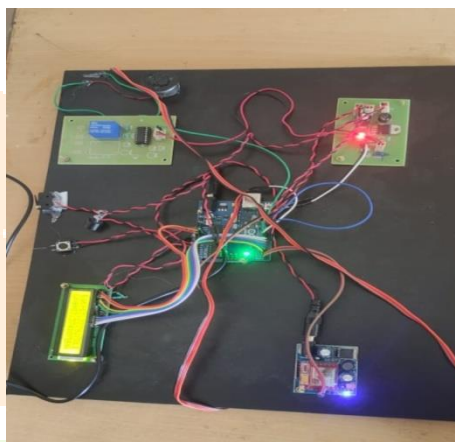


Fig 5.1 Output system

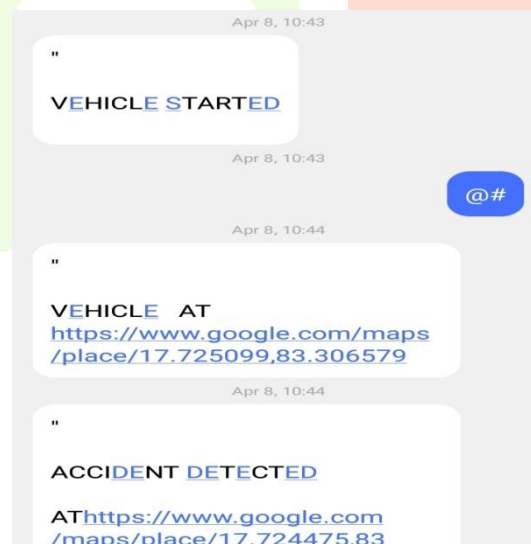


Fig 5.2 SMS received by the owner

VI.FUTURE SCOPE

The system can be further worked on or improved by adding the system to the real time vehicle. The system can also include vibration sensor and a password or fingerprint based security. So if a person wants to start the vehicle then the person should give the correct password or has to place a finger on the sensor if the given password is correct or the fingerprint has matched then the vehicle will start otherwise it will send a message to the owner. When there is a collision of the vehicle then the vibration sensor detects the vibration and if it is beyond a threshold value then it is detected as accident and message is sent to the hospital and family members.

VII.CONCLUSION

Thus the project tracking system with theft control and accident intimation through sms is obtained and have observed the performance of the system. With the help of this project the increase in the theft of the vehicles can be controlled and the rapid increase in death rate due to the accidents occurring in the remote areas can be reduced.

VIII.REFERENCES

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