

# IOT BASED VEHICULAR EMERGENCY SYSTEM

<sup>1</sup>Komal Pawar, <sup>2</sup>Deepa Ragho, <sup>3</sup>Deepali Warkad, <sup>4</sup>Prof.V.V.Gaikwad

<sup>1</sup>Student, <sup>2</sup>Student, <sup>3</sup>Student, <sup>4</sup>Assistant Professor

<sup>1</sup>Electronics and Telecommunication Engineering,

<sup>1</sup>Bharati Vidyapeeth's College of Engineering For Women, Pune, India

**Abstract:** IOT is the most recent and developing innovation which can make our life increasingly rich and agreeable likewise changes our method for living. The primary Moto of actualizing IOT is to make our life simpler, more astute yet additionally more secure, it's the innovation by methods for which we can screen as well as control the frameworks intended for our utilization. The structured framework is an IOT related methodology that can give us the ongoing correspondence and area following in the event of vehicular crises like mishaps the framework begin consequently and furthermore can be activated physically by methods for a crisis switch (dash switch) .this framework likewise furnishes us with the precise scope and longitude of the vehicle by which we can follow the accurate area of vehicle by utilizing this we can give moment medicinal help if there should arise an occurrence of restorative crises like mishaps.

**Index Terms-** Microcontroller, Wi-Fi Module, GSM Module, GPS Module, Sensor's, LCD Display, Power Supply, Motors.

## I. INTRODUCTION

The IOT with some structure executions can even spare the lives of numerous individuals. Utilizing the empowered IOT approach, in this task a little methodology exhibited towards vehicle crisis amid a mishap. The IOT enables items to be recognized or controlled remotely through the current system framework, making open doors for a more straightforward mix of the physical world into an electronic framework.

Presenting an arrangement of constant area of correspondence and confinement in a remote vehicle that is confronting a disastrous mishap or any crisis with the utilization of ATMEGA-32.

The framework consequently sends basic data to crisis administrations, for example, the clinic, police headquarters, fire detachment, and so on. The track following framework gives the accurate area of the episode that happened. The proposed framework screens the condition continuously. The present world is outfitted with quick web association, cell phones, and system. Presently we are living in a period of web and quickly moving towards a savvy planet where gadget will be associated with one another, Smart world can be accomplished utilizing IOT which can change our life vision, Digital physical framework additionally can be utilized for the equivalent. Machine correspondence is quickly developing to make the machines progressively clever and partook in nature.

In vehicles safety is one of the important parameter, a study says that in India more than one lakh's people die yearly due to vehicular accidents and delay in medical help where most of them die due to late arrival of rescue team or no alert send to the rescue team about the location where accident took place. This system beats every one of these downsides.

## LAYOUT OF PAPER

The paper has been divided into following parts. Introduction, Ease of use, Proposed System Architecture, Algorithm and Flowchart, Advantages and Applications, Acknowledgement, References.

## II. EASE OF USE

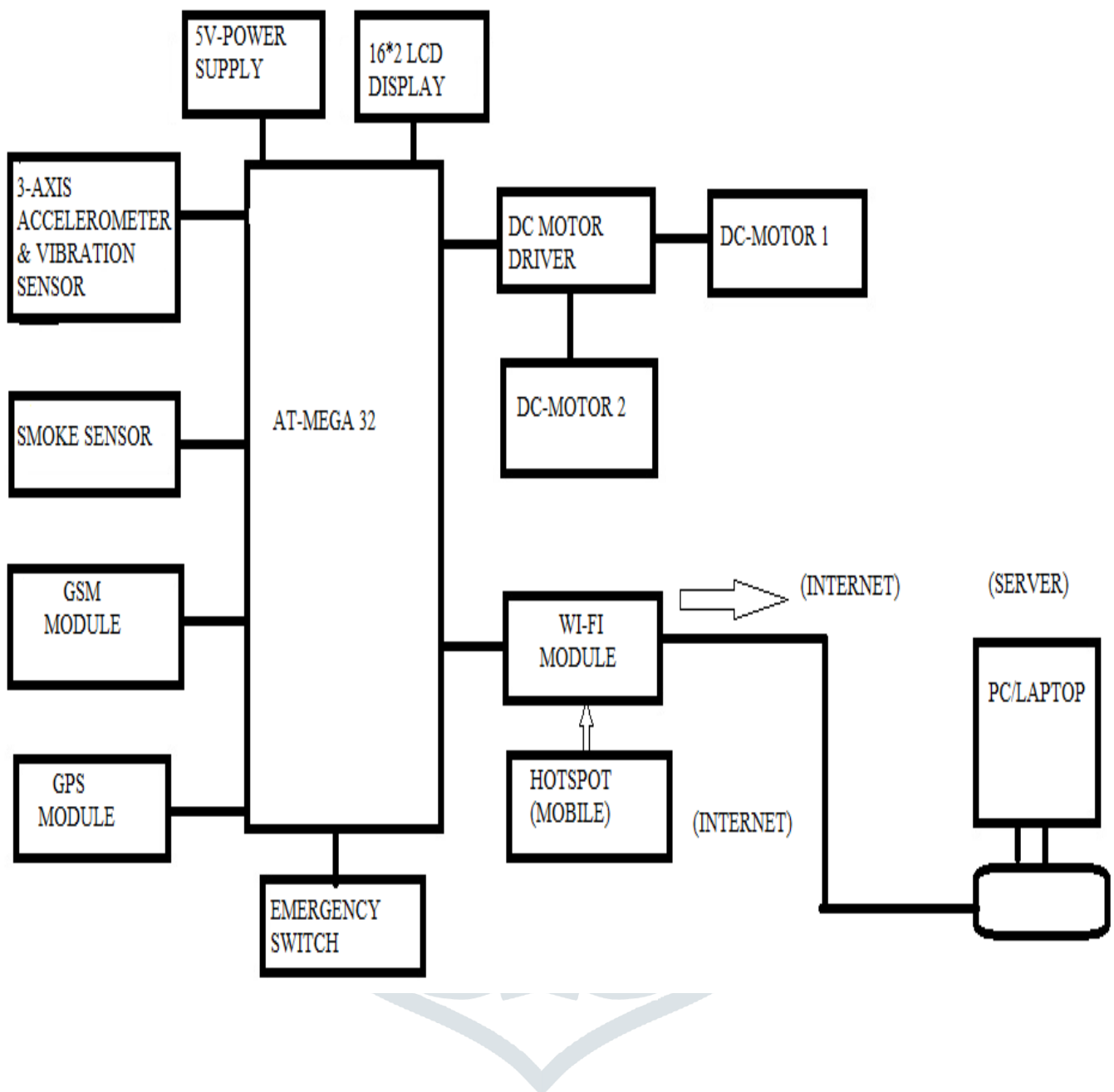
This system can be implemented in case of any kind of vehicular emergencies, can be used in ambulance, no expert required to control the system, updates are easily available such as the real time location and communication, vibration readings, engine status, etc.

## III. PROPOSED SYSTEM

There are total nine parameters interfaced with ATMEGA-32 these parameters are Dc motors, Wi-Fi module, GSM module, GPS module, Smoke sensor, 3-axis accelerometer, LCD-display, Dash switch/Emergency switch.

This system also monitors weather the vehicle exceeds the specific high vibration ratings if so then a message is displayed on the LCD along with vibration readings. Usually engine damages when accident takes place so in this case smoke sensor which is usually a gas sensor is being used when engine smoke is detected an instant SMS alert is send to the contact numbers that are saved in the system. The GPS gives us the exact location of the place at which the vehicle is, whereas GSM module is used to generate an SMS alert. This all process can be done only if Wi-Fi is available so, we provide internet access to the system by means if Wi-Fi.

4.1 PROPOSED SYSTEM ARCHITECTURE



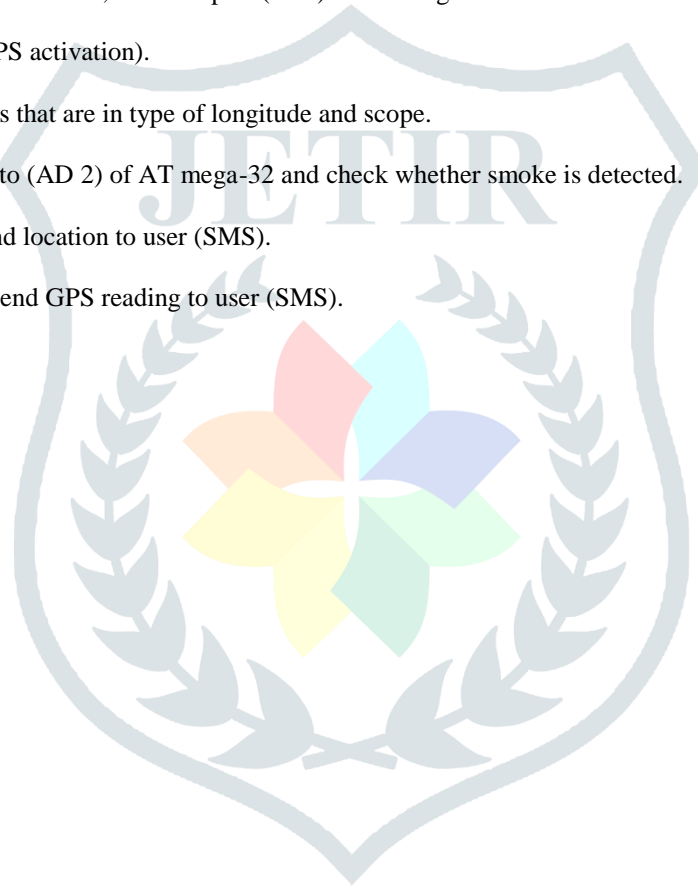
ATMEGA-32 is the main heart of the system, using ATMEGA-32 we have interfaced SMOKE SENSOR, GPS & GSM MODULE when smoke is detected by smoke sensor the ATMEGA-32 gives signal to GSM MODULE, this GSM module will send an SMS alert to the user. A delay of 20 msec is provided in the programming so that continuous SMS are not sent. if the smoke detection is continued after 20 msec again an SMS will be send to the user and other contacts in the program. Dash switch also acts as reset when pressed the reset the program will process again. Dash switch also can be used as an emergency switch when emergency switch is pressed an message will be automatically send to the contacts feed in program. GSM is utilized for the correspondence between the PC and GSM framework. When smoke is detected by the smoke sensor the GSM module will immediately send an SMS alert, if the smoke detection continues after delay of 20msec again an second SMS ready will be send to the client and the contacts that are accessible with ATMEGA-32. This is directly related to the proposed system in case of accident if fuel tank is damaged there is possibility of fire the smoke sensor detect the smoke and immediately give the alert to the system.

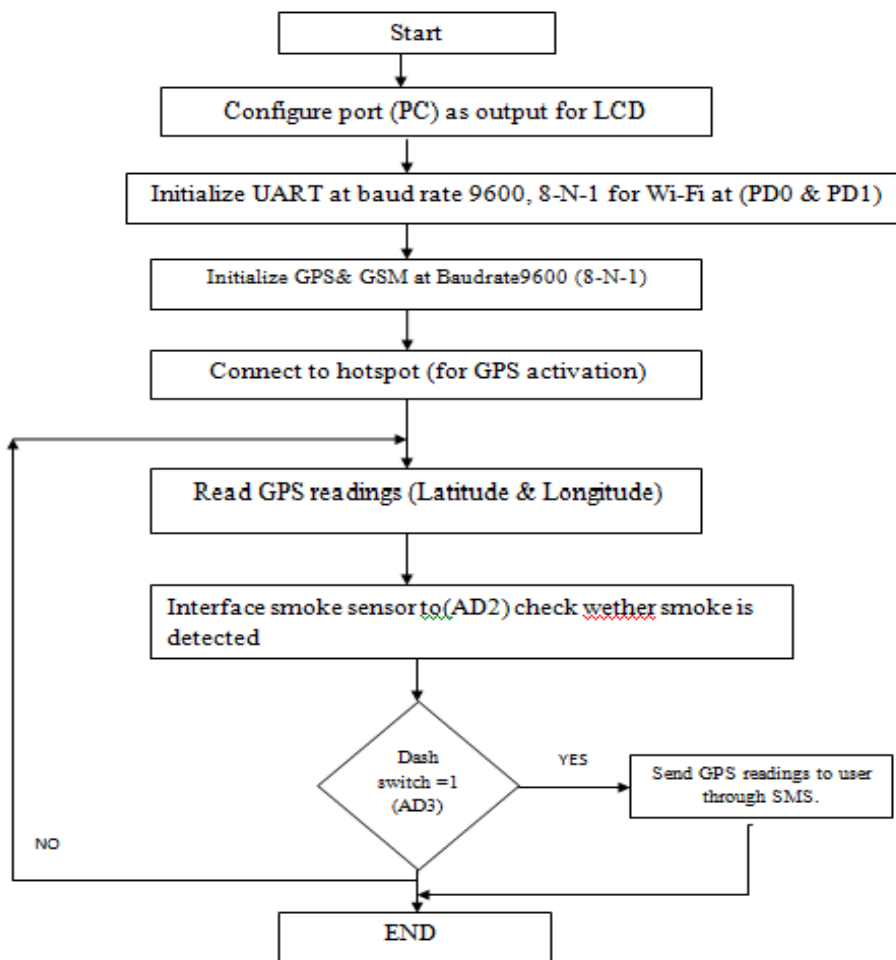
## 4.2 ALGORITHM AND FLOWCHART

### 4.2.1 ALGORITHM

1. Start
2. Initialize Port (PC) as output for LCD.
3. Display “Project name” on LCD (IOT based vehicular emergency system).
4. Initialize UART at baud rate 9600, 8-N-1 for Wi-Fi at (PD0 & PD1) ports of AT mega 32.
5. Initialize GPS at Baud rate 9600, 8-N-1 at port (PD7) of AT mega 32.
6. Initialize GSM at Baud rate 9600, 8-N-1 at port (PD6) of AT mega 32.
7. Connect hotspot (for GPS activation).
8. Peruse the GPS readings that are in type of longitude and scope.
9. Interface smoke sensor to (AD 2) of AT mega-32 and check whether smoke is detected.
10. If smoke is detected send location to user (SMS).
11. If Dash switch=1 then send GPS reading to user (SMS).
12. END

### 4.2.2 FLOWCHART





## V. ADVANTAGES AND APPLICATIONS

### 5.1 ADVANTAGES

- Highly simplex system with more advanced features.
- Real time location tracking is possible.
- Smoke sensors interfaced so that fire detection can be done at earlier stage.
- System is highly compatible for future implementations.
- Low cost system with more advanced features.

### 5.2 APPLICATIONS

- This system is proposed of any kind of accidental emergencies.
- The real time location tracking system can be used in Ambulance.
- Fire Engines.
- Smart Helmet's.

## VI. ACKNOWLEDGMENT

I might want to accept this open door to thank my inward guide Prof.V.V.Gaikwad for giving me all the assistance and direction I required. I am extremely thankful to them for their benevolent help. Their important proposals were exceptionally useful. I am likewise thankful to Prof.Dr.S.R.Patil, Head of Electronics And Telecommunication Engineering Department, BVCOEW for his

essential help, recommendations. At last our uncommon gratitude to Principal Dr.S.R.Patil for furnishing different assets, for example, research facility with all required programming stages, ceaseless Internet Connection, for our venture.

#### REFERENCES

- [1] Pratiksha. R.Shetgaonkar, VijayKumarNaikPawar, Rajesh Gauns. "Proposed model for smart accident detection system for smart vehicles" International Journal of Emerging Trends & Technology in Computer Science 2278-6856. August 2015.
- [2] Rashmi Hegde, Rohith R. Sali, Indira M.S., "RFID and GPS based Automatic Lane Clearance System for Ambulance", International Journal of Advanced Electrical and Electronics Engineering, vol.2, no.3, pp.102-107, 2013.
- [3] Ronan Doolan and Gabriel-MiroMuntean, Member, IEEE."EcoTrec—A Novel VANET-Based Approach to Reducing Vehicle Emissions" IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS. IEEE June 15, 2016.
- [4] C. Thompson, J. White, B. Dougherty, A. Albright, and D. C. Schmidt, "Using Smartphones and Wireless Mobile Sensor Networks to Detect Car Accidents and Provide Situational Awareness to Emergency Responders," in *ICST Conf.*, June, 2010.
- [5] J. Maleki, E. Foroutan, and M. Rajabi, "Intelligent Alarm System for Road Collision," Journal of Earth Science and Engineering, vol. 1, no. 3, 2011.
- [6] SubhaKoley, PrasunGhosal, "An IOT Enabled Real-Time Communication and Location Tracking System for Vehicular Emergency", IEEE Computer Society Annual Symposium on VLSI, 2017.

