



# Iot Based Women Security Alert System Using Raspberry Pi

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## 1. ABSTRACT:

In today's fast moving world, Women Security is an issue of growing concern. We have read about many unfortunate incidents happening with women and the crime rate is increasing. According to the reports of WHO, NCRB-social-government organization 35% women all over the world are facing physical harassment in public places. The proposing women security system must provides the safety in public places as well as travelling alone through public transports (school buses, company vehicle etc).The heinous incident that outraged the entire nation have waken us to go for the safety issues and so a host of new apps have been developed to provide security systems to women via their phones.

This paper presents IOT based women security for the Safety of Women and the processor activated by giving voice command through Bluetooth in mobile

phone, whenever need arises. This paper proposed a new model for the women security in public places which aims to provide the 100% safe environment.

## 2. EXISTING SYSTEM:

### 1. FIGHTBACK: -

This app is developed by Mahindra faction. In earlier days, this app was not complimentary, customer have to compensate for this app. But after Delhi gang rape incident, this app is on hand at no cost. This app sends a message to your friend or contacts that "user is in trouble" through E-mail, SMS and GPRS. This app works on those mobiles that support Android Java Programming. [3]

### 2. SECUREME BETA: -

This app is developed by Think MPI Consulting Private Limited. It helps us to raise alert and we can get help in case of life threatening emergencies. After

installing the app, initially we have to give a pin number for security purpose and then after emergency contacts must be registered in the app. By pressing a tap on secure button, it notifies the contacts with location co-ordinates. [4]

3. *VANITHA ALERT*: -

This app is developed by ABC Mobile Learning Communication click on "HELP" button on our mobile's home screen in an emergency situation can deliver a distress text message to the registered mobile number, E-mail id, face book id seeking help and indicating the user's location. [5]

4. *RAKSHA – WOMEN SAFETY ALERT*:

This app is launched by BJP on May 15, 2014. By clicking on this app, it sends location of the user to the contacts registered and the user can also get the details of the location of the contacts. A distress signal just by pressing a single key sends out a loud buzzer to our near and dear ones. We can add multiple contacts to this app and when there is no data connection, this app alerts the contacts by sending SMS. [6]

While using these apps the user should unlock screen and press help button or click the apps. It is somewhat time taking process in those scenarios. To overcome

this, IOT based women security alert system is proposed.

**3. PROPOSED SYSTEM:**

This Project presents an automotive location identifying system using GPS and GSM-SMS services for woman in risk. The system permits location of the automobile and transmitting the position to the control room, parents and guardian as a short message (SMS) and send the images to e-mail. The tracking in this system is composed of a GPS receiver, Raspberry pi processor and a GSM Modem. GPS Receiver gets the location information from satellites in the form of latitude and longitude. This system having Tilt sensor and USB Camera for taking picture of intruders and send to control room. This system is helpful to prevent women harassments in public area.

**3.1 ADVANTAGES OF PROPOSED SYSTEM:**

- In this proposed system, the advantages than existing system are we have to give voice command rather than pressing any buttons in the mobile phones.
- In addition to GSM-SMS and GPS tracking, USB camera takes the pictures of Intruder.
- Another facility BUZZER is present so that attacker may divert and there is possibility of getting help from surroundings.
- DC motor is also present which stops the vehicle when ever this situation happens.

- Highly efficient and user friendly design.
- Easy to operate.
- Low power consumption.
- Location of the vehicle can be known using GPS.
- Works anywhere in the world (GSM availability).

#### 4. HARDWARE&SOFTWARE REQUIREMENTS

##### 4.1 HARDWARE REQUIREMENTS:

- RASPBERRY PI with regulated power supply.
- GPS Receiver for Location Information.
- GSM Modem/Mobile phone for remote communication.
- Camera
- Tilt sensor
- Bluetooth module
- Buzzer
- LCD display
- DC Motor

##### 4.2 SOFTWARE REQUIREMENTS:

- Operating system: LINUX
- Editor: VI terminal
- Compiler: GCC
- Dumping: FTP protocol

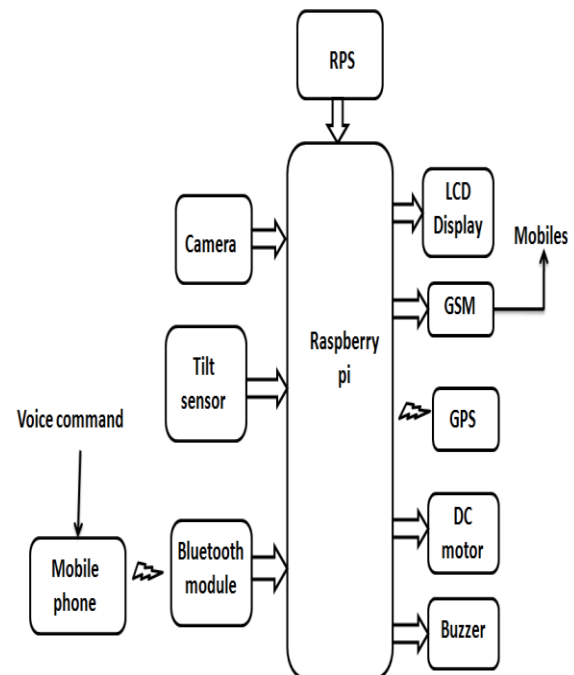
#### 5. SYSTEM DESIGN

##### 5.1 Design Overview

In this system, all the hardware components are connected to raspberry pi processor. Camera and Bluetooth are connected to the USB Ports of Raspberry pi processor. LCD Display is connected to extended GPIO Pins.

The GPS, GSM Modules are also connected to the General Purpose Input/output pins. The Regulated Power Supply is given to the on board micro USB Power input.

##### 5.2. Block diagram



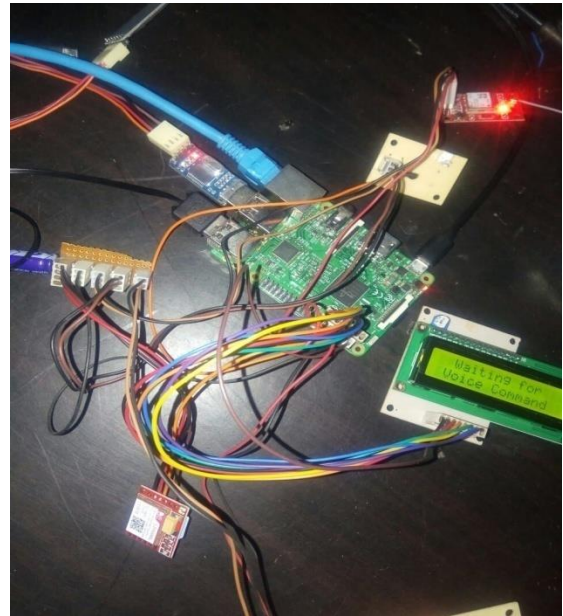
##### 6. WORKING:

When intruder attacks the women, then she give voice command “PLZ HELP” then that command activates the system via Bluetooth in mobile phone. In this situation, women pulls her hand so that it forcibly changes to some angle now tilt sensor senses that forcible change in angle. Tilt sensor, blue tooth module are connected to RASPBERRY PI Processor so that USB camera activates and takes the pictures of intruder. These pictures are sending to email. Now SMS send to control room, parents and guardians through GSM. These messages include location identification

with latitude and longitude values through GPS. With this, BUZZER also activates so that attacker may diverts and neighbors may help the women. DC motor is also presents so that it stops the vehicle when this situation happens. **RESULTS:**



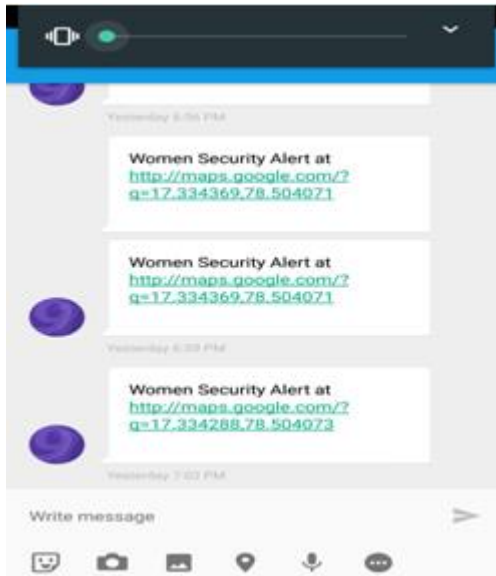
**Figure 1:** Hardware kit



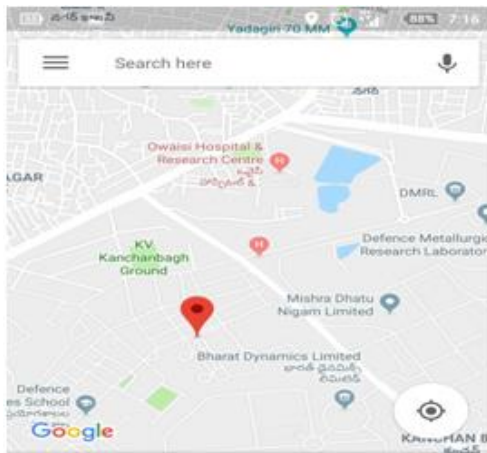
**Figure 2:** Hardware kit when switch ON



**Figure 3:** LCD Showing location coordinates



**Figure 4:** Sending SMS with location coordinates



**Figure 5:** Location Identification through Google maps



**Figure 7:** Camera connected to Processor



**Figure 8:** Pictures to e-mail

## 7. CONCLUSION

Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Secondly, using highly advanced IC's with the help of growing technology, the project has been successfully implemented.



Thus the project has been successfully designed and tested.

## 8. FUTURE ENHANCEMENTS

The scope of this project is very wide range. In future, we can add spy camera or wearable camera, biological sensors like heart beat sensor, pulse rate sensor etc.

By interfacing MMC/SD card to the system we can log the path of the vehicle being traveled. This project can be extended using high efficiency GPS receiver and a GSM module.

By this project we can save the women and protect her by knowing the current location for vehicle tracking through GPS, it is very easy. BUZZER also activates so that attacker may diverts and neighbors may help the women. The dc motor stops the vehicle. Parents and police get information through GSM-SMS.

## 9. BIBLIOGRAPHY

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