

# **AN ADVANCED EMBEDDED SYSTEM FOR WOMEN SAFETY BY USING GPS TECHNOLOGY**

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## **ABSTRACT:**

Women's safety plays a very vital role now days due to rising crimes against women. To help resolve this issue we propose a GPS based women's safety system that has dual security feature. The proposed system consists of dual alerts that is buzzer and message is sent through GSM. Hence there must be a system which can protect them in such difficult situation. This paper suggests a new technology for a women safety with one touch system using GSM & GPS so that women never feel helpless while facing such social problems or challenges. Here we introduce a device which ensures the protection of women. The problems we have overcome here using raspberry pi, GSM, GPS and force sensor. Anytime when women sense danger only button is to be pressed on the device. In such case GPS tracks the location of the women & sends emergency message using GSM to saved contacts & police control room. The system proven that it is providing complete security to women's and kids wherever we are using it.

**Keywords:** *IOT, GSM, GPS, keypad.*

## **1. INTRODUCTION**

In today's world, women safety has become a major issue as they can't step out of their house at any given time due to physical/sexual abuse and a fear of violence. Even in the 21st century where the technology is rapidly growing and new gadgets

were developed but still women's and girls are facing problems. Women are adept at mobilizing diverse groups for a common reason. They often work across ethnic, religious, political, and cultural divides to promote liberty. We are all aware of importance of women safety, but we must analyze that they should be properly protected. Women are not as physically fit as men, in an emergency situation a helping hand would be assistance for them. The best way to curtail your probability of becoming a dupe of violent crime (robbery, sexual assault, rape, domestic violence) is to recognize, defend and look up resources to help you out of hazardous situation. If you're in dilemma or get split from friends during a night out and don't know how to find back residence, this device with you will guard you and can reduce your risk and bring assistance when you need it. There are several apps reduce the risk of sexual assault on women by informing control centre and their associates through SMS, but in lieu of those this apparatus has a much more efficient way to inform those this respected persons and also has a defending system which cannot be provided by existing app. This paper focuses on a security system that is designed solely to serve the purpose of providing security to women so that they never feel helpless while facing such social challenges. The system resembles a normal clothes which when activated, tracks the location of the victim using GPS (Global Positioning System) and sends emergency messages using GSM (Global System for Mobile communication), to three emergency contacts and the police control room. The system also incorporates a screaming alarm that uses real-time clock, to call out for help and also generates an electric shock to injure the attacker for self defence.

## **2. LITERATURE SURVEY**

At present criteria, we cannot detect where the accident has occurred and hence no information related to it, leading to the death of an individual. The research work is

going on for tracking the position of the vehicle even in dark clumsy areas where there is no network for receiving the signals. In this project GPS is used for tracking the position of the vehicle, GSM is used for sending the message and the ARM controller is used for saving the mobile number in the EEPROM and sends the message to it when an accident has been detected. From the past event and the existing approach the below Drawback are been noted:

1. Manual system is adopted.
2. Tracking of accident is a crucial process in the system.
3. Required medical attention cannot be given to the needed person.
4. Life loss and property loss were not stopped in large scale. Considering all the drawbacks into account we have formulated a proposed system which covers all the above mentioned drawbacks.
5. The Automated system is used once the accident occurs.
6. This system GSM will send the message to the More Human life can be saved using this automated system. Considering all the drawbacks into account we have formulated a proposed system which covers all the above mentioned drawbacks.

### **3. RELATED STUDY**

Loaded with security apps for women, you're smart phone can help you send emergency alerts to chosen people and also let people know about your whereabouts if anything goes wrong. Sometimes here might be a situation that when women had an accident in the late night and there are no one to help them, in such situations the person will not be able to tell the situation that he/she facing.

And they do not know the basic first-aid details and to know the person where the incident has happened. Nowadays though there are many apps and devices evolved for women safety via smart phone which can be activated only by a touch or one click or shake the mobile. The metal detector detects the presence of metals like knife and other things present with the kidnappers and with the help of shocking circuit; the shock was applied to the kidnappers. The shock that was applied is mild. The GPS is meant for tracking the location of the spot and with the help of GSM the emergency message is send to the predefined contact. The UART is used to communicate with GPS and GSM module. The message is sent using peripherals with continuous I/O communication. Here we discussed about a system, GSM based AMR has low infrastructure cost and it reduces man power. The system is fully automatic; hence the probability of error is reduced. The data is highly secured and it not only solves the problem of traditional meter reading system but also provides additional features such as power disconnection, reconnection and the concept of power management. The database stores the current month and also all the previous month data for the future use. Hence the system saves a lot amount of time and energy. Due to the power fluctuations, there might be damage in the home appliances. Hence to avoid such damages and to protect the appliances, the voltage controlling method can be implemented.

#### **4. PROPOSED SYSTEM**

This work develop a women's safety system which provides the current location details of the women in danger using GPS and GSM modules. IoT module will track the current location of the victim and update in the webpage. In addition to location tracking it also provides some safety and security to women like giving electric shock to the attacker. The proposed system of this project is shown in Fig. Workflow of the proposed System The workflow of the women safety and security

is explained in this section. The flow chart of the proposed system is illustrated in Fig.

Step 1: Start.

Step 2: Switch ON the 12 Volt power supply.

Step 3: Emergency button is pressed.

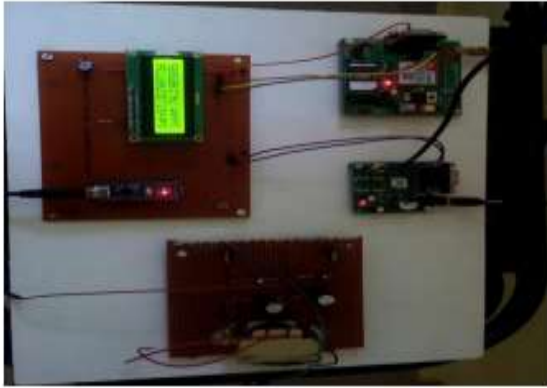
Step 4: If GPS receives signal, GPS will start calculating the current latitude and longitude values of the victim and send it as SMS to the registered mobile number using GSM module.

Step 5: If any vibrations detected by vibration sensor, get the last location from GPS and send to GSM module.

Step 6: IoT module tracks the last location of the victim and that location is updated in the Webpage.

Step 7: Neuro stimulator is turned ON, to apply shock to the attacker.

The implementation of women security system achieved in three levels. In the first, alarm is raised based on force sensor when it detects force being applied on women. In second, shock is applied to kidnappers when metal detector detects the presence of metal. At third, message will be send to the predefined numbers using GSM and spot is being tracked using GPS. The main advantage of this system is that the user does not require a Smartphone unlike other applications that have been developed earlier. The use of sophisticated components ensures accuracy and makes it reliable. The cloves provides with all the features which will leave no stone unturned to help the victim in any kind of emergency situations.



**Fig.4.1. Hardware kit image.**



**Fig.4.2. Output results.**

IoT module will track the current location of the victim and it will update the location on the webpage. The microcontroller will switch ON the buzzer in the device, so that nearby people may come to know that someone is in danger and they will come to rescue.



**Fig.4.3. Output in LCD**

## **5. CONCLUSION**

The proposed design will deal with critical issues faced by women and will help to solve them with technologically sound equipment and ideas. The merit of this work is it not only provides safety and it also provides security by means of self-defence mechanism. The crime against the women can be now brought to an end with the help of real system implementation of the proposed model.

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