



## Women's Safety Jacket with GPS Tracking and Shock

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**Abstract:** This project offers a GPS and GSM modem-based system for identifying women's health. It is possible to interface the system. relatives. An Arduino board, a GPS receiver, and a to the warning framework and alert the police headquarters and family members. A GPS receiver, an This setup for a GSM modem and an Arduino board identification also enlightening. The region's size and longitude are obtained by the GPS receiver via satellite. The Arduino board is in charge of handling this information, the client receives the processed data and an Arduino board. by means of a GSM modem. A GSM modem is attached to the MCU. use a GSM modem. The predetermined flexible number receives an SMS from using a GSM modem. When a woman is seriously endangered and and in need of She can use the designated switch for self-defence to her. When the switch is pressed, the entire framework will be started, followed by the quick transmission of an instant the recipient's location using GSM and GPS will be sent. is being sent. In addition, pressing the caution switch Arm receives an electric shock.

**Index Terms – GPS; GSM; Arduino Board; Panic switch; Stun gun; Microcontroller etc.**

### 1. INTRODUCTION

As the threat to women insurance so that women never feel helpless when dealing with fast, we provide a structure to provide security. societal challenges Currently, women's security is very important; it has always been a concern for some people and panels over the globe. When we pay close attention to events, it becomes evident. when the character of women has been misinterpreted Generally speaking, a work should be created in this manner by specific individuals. Based on electronic devices like This model may be used to recognise the GPS and signals, region of casualty and allow the salvage structure to move whenever a need should occur. a convincing example that the problem can be used. The device, which functions like a typical set of person in issue can use. The device, which like a regular sets of cloves, finds setbacks using GPS, and sends the information to emergency contacts and the police control area This subsequently aids the victim in a justified manner. against the belligerent It is a depressing notion that violations of women have increased significantly during the past ten years. There are numerous programming programmes currently in use to help women,

but the measurements haven't decreased. According to India's National Crime Records Bureau (NCRB), 93 women were regularly assaulted in 2014. Additionally, 3,37,922 social position. This study is extremely concerned with a 2014 alone [1]. The current trends in female security broadly fall into different categories, ranging from Android programmes created for mobile phones to stylish clothing that may be worn and expressed in daily life. In any event, our focus is on developing a framework for health that integrates the benefits of existing approaches and yields a solution that ensures both protection and the creation of a consistent road for the person in question to begin legal measures, if any. We intend to create a midway wearable that can provide total security and serve as a tool to ease women's and their families' concerns. The modified framework is used to design a mobile device for women's security. It is made up of an Arduino, force supply, touch sensor, poison gas, GPS, and GSM modem [5]. It is a specific item of advice designed to keep the client and their spouse safe 24 hours a day. Both general well-being and actual emergencies are well-represented [3]. Our goal is to provide you with the most reliable means for physically

interacting with your dear ones. [1]. In order to prevent a tragic catastrophe, it informs the police and the crisis contacts about the current situation and sends a message of desperation. [2]. This is quite useful to the police department in terms of gathering misused laws. A crisis alarm can protect the victim from assault or rape [4]. The "Virtual Friend" device was created specifically for women who are suffering. It is a device used by women in perplexing situations. The primary technique of using Arduino is to send and receive data using the GSM protection included into the Arduino board. The GSM network uses an Arduino UNO to determine the current location of the item. The client's PDA is started on the second, the Arduino UNO obtains the current location's coordinates, and the Arduino transfers the location information to the client's PDA via Arduino GSM protection. The SOS light is a warning sign intended to alert passersby and it gives the person in need a suggestion of all-inclusive aid. The alarm is activated under the assumption that the woman is in a dangerous situation. When necessary, the woman can use GSM and GPS to send messages or make decisions to the contacts she has added. Indeed, even if the device is lost, the call and message will still be made until the client receives or views them. This is the precise situation when the state authority needs to intervene and make an effort to reduce costs and foundation problems for the businesses pursuing this course. The application's drawback is that it is very complicated.

## 2. LITARATURE REVIEW

[1] The authors of this article address the fact that women now have very little safety and that providing women with security is highly important. As a result, an application must be created and supplied with sufficient information, such as human behaviour, in order to provide security. It needs to reach the GPS administrators. This programme can identify the location and assess the welfare of women so that the appropriate actions may be performed. Therefore, this suggested framework aids in handling the problem faced by women, which may be resolved with specialist knowledge.

[2] Today, women's security is a major concern for the entire population. The model in this essay will help to defend the women from the aggressors. The suggested model includes many devices including GPS, GSM, and emergency signal. Here, GPS is used to pinpoint the location of the device. In this paper, a band is suggested, which will be given to a woman so she can handle business in the late afternoon. This essay aims to provide a lady with security in public by

informing their family members and the closest police station about potential threats.

[3] The author of this essay investigated how the system is designed to ensure the safety of women. This system makes use of GPS technology to locate women. In this way, the created signs are sent off the board, handled the signs, and provide SMS services, allowing crisis calls to be transmitted to the region of the directions to protect women from provocation.

[4] Women are currently being attacked, kidnapped, and disturbed by genuinely tough people all around the world. In order to ensure the safety and security of women, clever technology that is comfortable and incredibly simple compared to other complicated framework that already exists was developed. This essay suggests risky subjects that women are interested in, and it will assist in successfully identifying the guilty person with the aid of cutting-edge technology. Furthermore, it will be easy to implement in numerous locations for women's safety and observation.

[5] This essay deals with how to plan a smart device while also promoting women's health. This device helps to identify what is happening to women. Women's safety has grown to be a major concern in modern society. Since they are insufficient, they are unable to have the same opportunities that men do. Therefore, in dangerous situations, this will serve as a rescuing hand. This uses an Arduino device with a GPS and GSM module. If a girl ever feels unreliable in any situation, she can push the remote key, which provides the whereabouts via GPS and GSM. This strategy aids in handling the dangerous situation faced by women. Additionally, by providing the necessary and specialised information, this paper aids in the continued development of the plan.

[6] This document is for women in difficulties and crisis because there is no security for women in our nation. It is straightforward and easy to use. Many people use the smart platform, which has many applications and is useful to people in case of any catastrophe. Our intention is to give you.

## 3. OBJECTIVE

Insurance against accidents or misfortunes is a requirement. Security is typically a concept similar to security. The difference between the two places an even greater emphasis on protecting against external calamities. Any breach of safety is the responsibility of the people or activities that violate the assurance terms. Although "security" is a wide

phrase, a "security" approach indicates something legitimate as well as safeguarded. Arduino had planned this project. This project demonstrates GPS and GSM-based security systems for women. The caution and caution neighbours can communicate with the framework. This perpetually informing architecture has a GSM modem, a GPS receiver, and an umbrella regulator. Satellites provide area data, including latitude and longitude, to GPS receivers. This data is processed by the microcontroller, and the handling data is sent to the client via the GSM modem. The MCU is connected to the GSM model. SMS messages are sent to a predetermined phone number by the GSM module. When a woman is in danger and needs self-defence, she can press the provided switch. Squeezing the key will start the complete system, and after that an SMS will be sent to find someone using GPS and GSM. Additionally, pressing the alarm switch causes an electric jolt to the arm.

#### 4. PROBLEM STATEMENT

The most recent horrific incident in Jammu and Kashmir shocked the nation and served as a warning regarding the safety and welfare of women. Regarding problems, people have a variety of security measures. Finally, tools should be familiarised to provide women's assurance with diverse developments.

#### 5. PROBLEM SOLUTION

This structure is designed with women's security in mind. The building's structural framework features security tools that can assist women who find it difficult to follow crisis visitors and transmit information through alerts during the occurrences by quickly pressing the tool's button. The whereabouts of the casualty will be tracked using GPS as it travels to nearby relatives' homes and police headquarters. After that, the immobiliser essentially overworks the muscles by shocking the sensory system. This is quite painful. The magnitude of the aggressor and the duration of the shock have an impact on its outcome. The irritation becomes more obvious the longer the device is hung on the attacker.

#### 6. IMPLEMENTATION

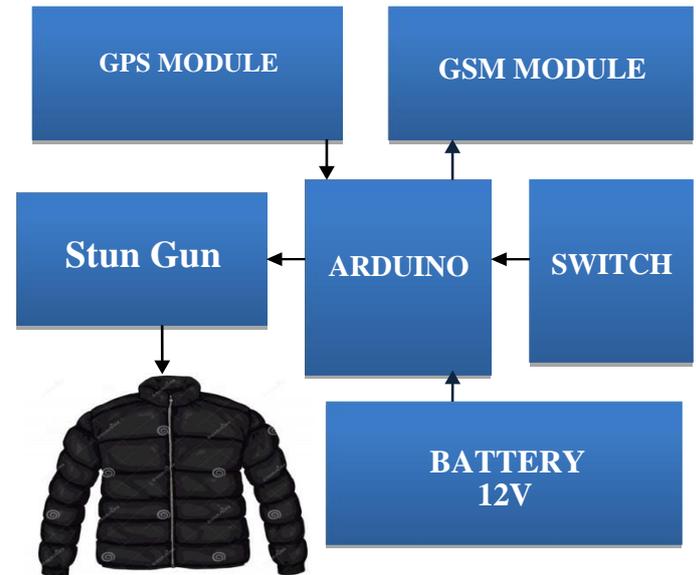


Fig.1 Proposed Block diagram

By pressing the switch, the entire framework will be activated. Immediately after that, the Arduino board will receive the signals, process them, and send the data to the client. The Arduino is coupled with a GSM modem. Using GPS and GSM, the GSM modem sends an SMS to the predetermined mobile number containing the location of the casualty. When the casualty presses the emergency signal, the collector receives the signals, the ringer rings, and SMS is shared with the victim's location. Additionally, pressing the alarm switch causes an arm electric shock.

##### A. Power Supply

The Arduino can be controlled by USB or an external source. Additionally, a decision is made as to how it should be controlled as a result. A battery can be used for both main power and auxiliary power. The insertion of a 2.1mm contrapositive fitting into the board's power jack with additional material. Leads removed from batteries can be inserted into the power supply's ground and Vin pin headers. The board can operate with a power range of 6 to 20 volts. The 5v pin may give less than five volts if the stock voltage is less than seven volts. The board might have mood swings. If it is higher than 12 volts, the voltage controller could overheat and damage the board. The suggested voltage range is 7 to 12 volts.

##### B. Electric Effect

An electrical self-defence device known as an immobiliser uses high voltage to disorient an attacker. The device quickly immobilises the offender when it makes contact with a person. Nevertheless, no major or

lasting harm is caused because of the extremely low amperage. It is intended for the immobiliser to infiltrate the sensory system.



**Fig.2 Electric Effect**

**C. GSM Modem**

Global system for mobile communication (GSM) is a worldwide accepted standard for digital cellular communication. GSM is the name of a standardization group recognized in 1982 to create a common European mobile telephone standard that would formulate conditions for a pan European mobile cellular radio system operating at 900 MHz. Whenever someone sense unsafe, GSM (Global System for Mobile communication module) sends extremity message to chosen contacts and the police control room.



**Fig.3 GSM**

**D. Global Positioning System(GPS)**

The GPS module functions similarly to a satellite, receiving data on a regular basis and speaking to the RS32 in a similar way. The US Division of Safeguard developed it

(DOD). A entire consecutive information message including region, speed increase, and time data is compressed at the sequential line after the radio wire contribution of the module receives the GPS signals. The module provides current date, time, longitude, scope, height, speed, and trip path, among other data. It may be used in a variety of applications, such as route, armada the board, global positioning system, planning, and advanced mechanics.



**Fig.4GPS**

**E. Buzzer**

Ringer The piezo bell produces sound in opposition to the piezoelectric impact. The age of tension variety, which depends on the use of electrical potential across the piezoelectric, is the fundamental principle of the piezo signal. The ringer can also be used in warning circuits and other systems.



**F. Arduino**

UNO Arduino It is a board-assembled microcontroller based on the ATmega328P. It contains 14 computerised input/output pins, a USB connection, a 16 MHz quartz precious stone, and a power jack. A reset button is present. Simply connect it to a PC using a USB cable that starts with an AC to DC connection. In light of the written programme, various applications can make use of a standard ARDUINO UNO board. To capture the start of ARDUINO programming, " UNO" was chosen. The Arduino version 1.0 serves as the standard and is currently updated to newer versions. The UNO board served as the foundation for a series of USB ARDUINO sheets and served as the Arduino platform's role model.

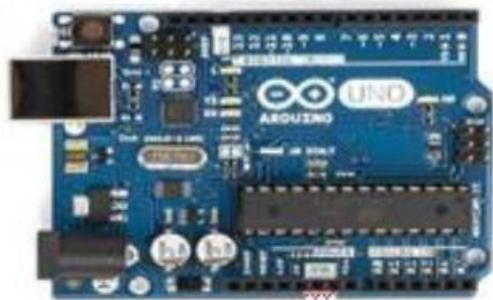


Fig.5 Proposed Block diagram

7. EXPERIMENTAL RESULTS

The main principle of the security system is to avoid conflict and communicate using GPS and GSM technology. It includes cutting-edge technologies including Arduino, Vibration Sensor, Buzzer, GPS, and GSM. In order to regulate the overall cycle, an Arduino UNO is used. The Arduino is altered using C programming languages, then collected and stored in the flash memory. Additionally, when the alarm switch is pressed, an electric shock is produced on the arm.

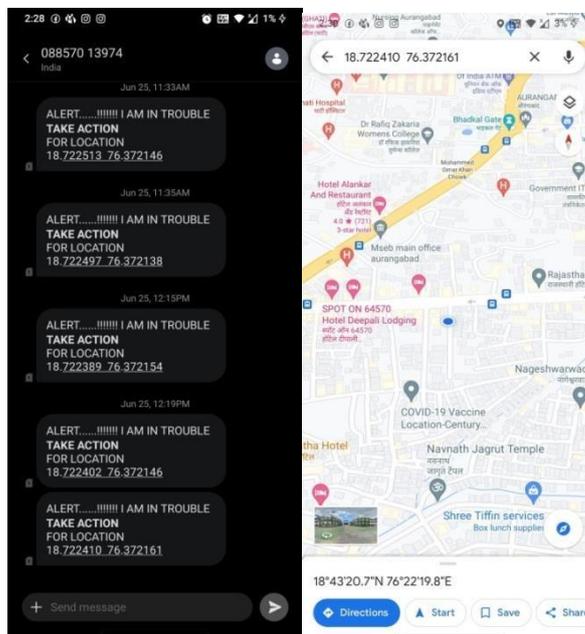


Fig.7 Message and coordinates

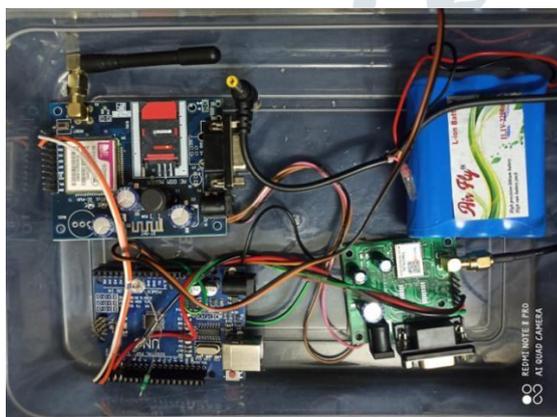


Fig.6 practical prototype model

8. CONCLUSION

The assignment rewards thinking on the women who have encountered a number of fundamental situations in the present and will assist in explaining them deductively with a packed unit and idea. The communications about the area are clearly communicated via wristbands and scenarios with elements like nerve gas release. The experience of every woman on the earth regarding her security and confirmation may be traced back to the aforementioned item.

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### BIOGRAPHIES

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