ISSN No:-2456-2165

Women's Safety Band

Yash R. Sawalkar
Department of Electronics and Telecommunication
PES Modern College of Engineering
Pune, Maharashtra, India

Himanshu H. Chitnis
Department of Electronics and Telecommunication
PES Modern College of Engineering
Pune, Maharashtra, India

Rushikesh R. Sakharkar
Department of Electronics and Telecommunication
PES Modern College of Engineering
Pune, Maharashtra, India

Aparna P. More(Asst. Professor)
Department of Electronics and Telecommunication
PES Modern College of Engineering
Pune, Maharashtra, India

Abstract:- For women, the world is becoming considerably less safe. In our country, though it is a superpower and undergoing economic development, still there are many crimes happening against women. This prototype can help put an end to the crimes committed against women. This security system was created specifically for use by women who are in danger. Being outside without knowing how many harassers are at large is not safe. It's time for us to arm ourselves with the tools we need to handle such difficult circumstances. All they want is a portable device that the woman can wear whenever she feels frightened. This band can transmit information about the attack to a smartphone, enabling the device's app to send messages to a few emergency numbers, which will expedite the arrival of assistance.

***Keywords*:-** *Women, Security System, Portable Device, Attack, Smartphone.*

I. INTRODUCTION

Due to the rising number of crimes in our nation, such as harassment, abuse, and assault, women still feel uneasy leaving their homes in the current period. Currently experiencing growth in the business and IT industries. Even on nights and weekends, there are many women employed in the corporate world. The working women experience a sense of insecurity. The proposed technology is more akin to an emergency safety system. The device is wearable on the wrist. It is a portable device that has a lot of features and functionality. So, this device's capacity to respond with just a click is a key feature. The device's operation entails just clicking an SOS switch, at which point the controller will produce a signal that will alert the mobile application through the Bluetooth module on the device. The mobile application will retrieve contacts from the database and the user's position using GPS after receiving the alert. The contact between the protector and the GSM user subscriber module will receive the most recent GPS coordinates. The design and development of a wearable device that integrates a few modules to send a message are shown in this study.

To begin the procedure, the emergency push button must be pressed. This device's primary function is to notify the authorities and guards of the victim's present position. The victim's present location is tracked using a GPS system, and the message is sent to the predetermined numbers via a GSM module. By Text messaging the victim's location and reducing the possibility of sexual abuse, numerous applications exist. All of the subsystems' operations are managed by the Arduino, which functions as an embedded computing system. It connects to a Bluetooth module, buzzer, and SOS switch. The trigger button is hit in an emergency. The system keeps track of the GPS-derived location data, creates a text SMS with the current location information, and sends an SMS via the GSM module to the police control room as well as a distress message to the pre-specified cell number. Google maps can be used to locate the GPS location utilising the data provided by this system. She will feel safe and protected as a result.

II. BACKGROUND

The main elements of this system are the Arduino mini, mobile application, GSM module, and GPS module. The user can feel comfortable wearing this band because it is a typical band that can be used as a watch and is also lightweight. The SOS switch, the power supply, and the Arduino are all attached to the band. The SOS switch, a straightforward switch used to activate the Arduino for alert signals and activate the alarm system, is coupled to this Arduino together with the 3.7V rechargeable battery power supply. Given that this band will be used frequently, a rechargeable power source must be provided rather than a disposable battery. Due to the close proximity of the band and the mobile device, Bluetooth is employed for connectivity. The Bluetooth module, which uses short-wavelength UHF radio waves in the ISM band between 2.400 and 2.485 GHz, is connected to Arduino. The smartphone features an integrated Global System for Mobile Communication (GSM) and Global Positioning System (GPS), and the mobile application is connected to the Bluetooth module.

ISSN No:-2456-2165

Women who work at night are determined to be in no way safe, whether on the highways nor in the public transportation options offered to them at their respective workplaces. Women constantly run the risk of being harassed, even at work. This system has been designed for such situations only. Females can wear this band at any point in time whether it be day or night. Whenever the female feels unsafe she can press the SOS switch of the band provided that it should be connected through Bluetooth with her mobile. Only such circumstances were considered when designing this system. This band is suitable for female wear at any time of day or night. Anytime a woman feels threatened, she can push the SOS button on the band as long as it is Bluetooth-connected to her phone. Mobile application is one of the main elements, as it is the main communication medium between the female and her protectors. The provision to enter the three contacts that will be used for texting and calling purposes is provided by a mobile application. Every time she presses the switch, a notification is sent to the mobile application, which is already equipped with a database of her contacts. Three phone numbers of her loved ones who can act to safeguard her in this dangerous situation can be provided by her on the mobile application. The mobile application already has a message prepared stating that she is in danger and that will be sent to the contacts she has listed along with the position coordinates as soon as the application receives the notification from the band's Bluetooth and GPS module that will retrieve the location of her device to mention the coordinates in the text message. Along with the text message to all three, the first contact number on the list of three will also be called with help of GSM. The main advantage of using a GSM module is the amount of coverage and range it can offer, without using any form of repeaters.

III. WOMEN SAFETY BAND WITH MOBILE APPLICATION

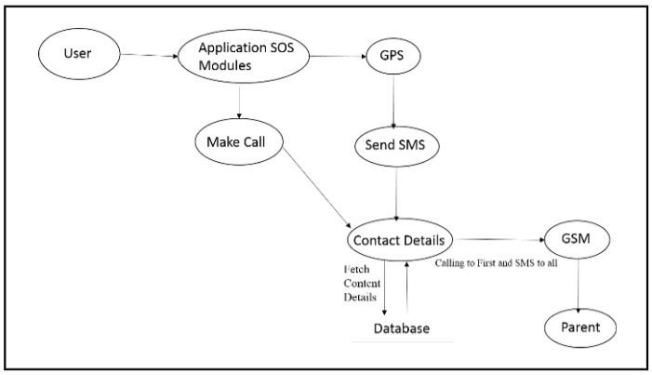

Fig 1

Mobile application provides interface between the user and her protectors. The inputs provided by the button on the band are used to make the decision. The pre-programmed situations are used by the system to make decisions and are handled by the smartphone app. The duties carried out by mobile applications include assigning the GPS module's transmitter and receiver pins, set the serial buffer to 4800 bit/s and 9600 baud, scan the SIM for the phone number, o Obtain GPS module data and create a Google URL using the GPS longitude and latitude. Until the device is reset, attach this URL to an alert message, then periodically send it to pre-selected ICE (In Case of Emergency) numbers from SIM memory.

IV. CONCLUSION

This paper demonstrates how an intricate system was created with the intention of giving women fully autonomous help. A variety of sensors were used in the creation of this system. These sensors coordinated with one another to create a system that will alert female guardians of any unanticipated emergencies with the proper information. Being the first of its kind, this type of concept naturally plays a significant part in protecting women's safety. The suggested design will address significant problems that women have recently experienced and provide technologically advanced tools to help address them. This concept could be used in various security and surveillance applications with additional study and invention.

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