

Women Safety Solution Based On Internet Of Things (IOT)

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ABSTRACT:

In recent days of today's world and technology the safety and security of women is a main theme and became critical in India and other countries. The issues of handling of this cases by the police in control preventing them for responding spam calls of distress. These restrictions include cannot trace the place of the crime and end of the victims in the crime, reaching to the crime is a discretely is a challenge and removal of these constraints. Due to this number of cases increases against women and children growing as a planted seeds in the Indian people minds. So, for the security of woman and child, many rules and regulations made by the government in the society. Even there were many existing systems for this women safety has been developed. There are some limitations are in these to tackle it immediately and mainly these system Involves the working of buttons, buzzers, Etc... So, to overcome these, This paper can help preventing women during crime or unusual situation. To overcome it certain sensors used in this by that live action of police will be taken and can help lot of girls by this. This paper explains the development of app that helps the women during crime and unusual situations.

Keywords: sensors, GPS/GSM, Smart phone application, smart band, BLE.

I. INTRODUCTION

Security is the most important to every child and women now a days. So, by using today's technology and science we can ensure the better way of security various types. . This is the theme to generate the project that can be act as regenerate device and better way of in security in various types. In this paper we use the technology called internet of things. The technology called internet of things that can describes the

Objects in a network "Things"-that are merged and combination with a particular sensors, designed software and other type of technologies for the purpose of linking and dispatching information with the connected devices and systems. Reason to develop the project that can be act as reuse device and product at the time of danger. The main Motivation of this paper is to protect the women and child. While facing social challenges this can help the women and child can use this technology and can avoid from the motivation behind this is paper is women safety system so that they should overcome the challenges in upcoming ages. This women safety security system involves an specially designed system can that track the location, detect the condition of health in person in the incident of being , that will be traced by the receiver , body temperature , sensor , flex sensor etc.... there are lot of sensors and technologies to perceive and detect the live situations of the women in abuse position . The pulse rate of heart of a person is that hyper situation is very higher and detect by the sensor can be make decision abnormal and while is victimized.

II. RELATED MODELS FOR WOMENSECURITY

As the number of crimes increased against women that has growing as a planted seeds of fear and security in the minds of Indian people and other countries people ,because of these fears ultimately end point in the imposition of restrictions and strict rules every women has compromise with, willingly, unwillingly to win their goals and achievements . Instead of bringing the confidence in a young women and children, these restrictions normally and again turn them into meek beings dare less and uncap able of facing in front of the world. To get rid of the fear of family members and to help a woman and child move around with confidence and encouragement, many developers have made up with of many applications and some security devices. Some of them are as follows,

1. FEMME:

It is used by the women in the time of emergency and distress for the security. It is designed like an application that can be used by everyone who would have installed and make use of this in their mobiles and devices. The basic approach of this device is that the victim wants to trigger (single click) by that it can trace the location of the person and the emergency message .

2. WOMEN SAFETY DEVICE DESIGN:

This women safety device, it has been designed in form of a glove and it is used through electrically completely. The person wants to wear this glove and it works by activating it by the person itself during emergency. They want to activate circuitry in that glove.

3. EYEWATCH SOS FOR WOMEN:

Eye watch SOS are specially made for women that captures the video and can record the audio of the surroundings near the women and sends an alert through message to the special contacts (**Advanced Electronics System for Human Safety**) this application can be used at the high locations like mountain, hills and without GPRS thus we can receive a safety confirmation message clicking button I am safe button.

4. SMARTBELT:

Design of this system is similar like normal belt and this system is also portable. The main parts of this system are Arduino Board, screaming alarm and pressure sensors. The device will be automatically activated when the sensor crosses the threshold of the pressure for asking help, to send sirens, the activation of screaming alarm should be done

5. SHE (SOCIETY HARNESSING EQUIPMENT):

The design of this equipment is garment embedded With an electronic device. The voltage generating capacity of the electronic circuit in this garment is about 3800 KV. 80 Electric shocks can be sent if there were multiple attacks.

The principal limitation of these model, systems or devices is that the first approach is to be made by the victims themselves. That time, during that strange situation we are not give assurance that all the victim should activate that system. So we want to build an SHE application that works autonomously in situation encountered.

- TYPES OF SENSORS USED:**
1. Temperature sensor
 2. Vibration sensor.
 3. Tilt sensor
 4. Pulse rate sensor
 5. Motional sensor.

III. PROPOSED MODEL:

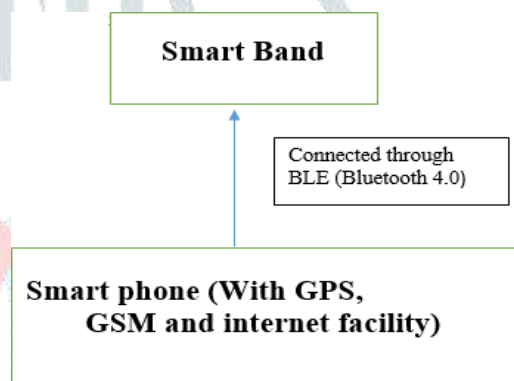


Fig. 1. Main block Diagram

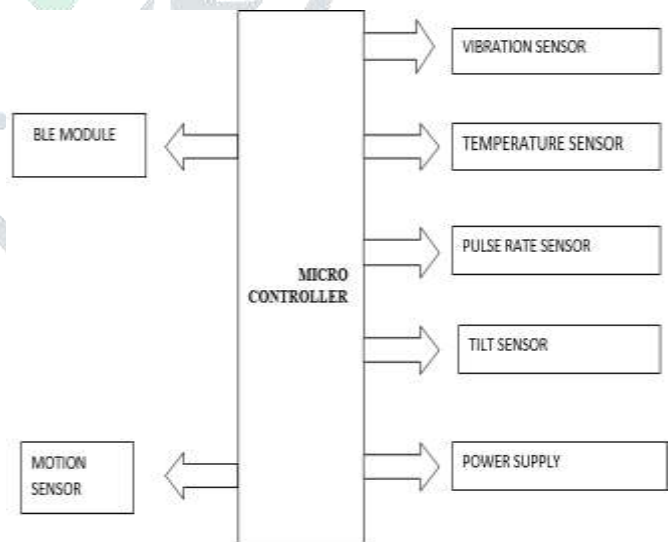


Fig 2 smart band module

As shown in the . above figure 1 that consists of connection between smart phone and smart band through the Blue tooth energy (BLE) Communication is done by the Machine and smart phone is by a specifically and accurately sketched app and this application is act as an interface between phone and device, Now the directed data like as heart pulse rate, temperature of body, tilt (orientation), vibrations of victim together with movement of the victims of the body is constantly checked by the app which is already downloaded in smart phone. During exploit , the application directs the smart phone to carry out the below works..

- It dispatch to the victim's relations together with coordinates.
- To request immediate action, interrelates is sent to nearby police station
- And it will also send help message to nearby people who are all installed that app
- For public attention. It will also send immediate alert message to minute near radius people in quick.

In order to trace the interrelates and check the women, this Application is designed in manner that it can use Global positioning System for easy tracking ability. For sending the help messages to relatives and also the nearby police control room, it uses Global System Mobile communication which is already integrate in the smart phone.

In order to provide a Social platform, this app will also help to send help messages instantaneously to the near radius people who have already installed this app so that they can also be contribute against injustice in just a time.

Information should be collected by the control unit from smart wrist and Global Positioning System user .Then these data will be send to base unit from control unit through GSM module. Now this unit collects all information from our body by the help of temperature sensor, image sensor heart rate sensor .flex sensor and keys. For sending information from, carpus unit to the unit controller, RF module issued.

A) TEMPERATURE SENSOR:

To maintain our health, human body temperature is very important and it is essential to check it regularly. For this temperature sensor can be used. Temperature sensor is used to detect hotness and coldness of human body .The temperature of body can measure by using several types of temperature. For example, LM 35 version are more précised in combined circuit sensors with voltage from the output is directly proportional to Celsius temperature. In case of emergency, our temperature of the body changes at certain situations and circumstances which can be traced by this sensors.

B) HEART RATE SENSOR:

Heart Rate sensor is based on plethysmography. It gives us report pulse rate of heart. . During the process of working of heart rate sensor, it starts to flashing led all pulse rate .for the calculation purpose of the BPM ,the conversion process will be done by converting this report into microcontroller .The principle behind this sensor modulation of the light by the satellite network traced to uplinked information for

synchronisation. Four frequencies are used by this system in band.

C).BLUETOOTH LOWER ENERGY:

Bluetooth lower energy is made for linking the machines low consumption of power. It is wireless communicable technology that is mainly used for transmits energy in small packets over a short interval to authorize small machines to transfer information .In day to day life , we are using many device for the purpose of interaction such as smart mobile ,wireless headphone ,and laptop which is many up of blue tooth lower energy to produce logical circumstance in between our devices.

D) GPS MODULE:

A GPS, is a satellites system that is made to help to navigation process around the Earth . This can shows the present location of the users and also it shows the particular time, particular position ,particular velocity. It Can identify particular latitude and longitude position of person from the GPS receiver.

E) GSM MODULE:

A GSM module is a hardware machine which utilize GSM mobile technology to furnish a data connection to a local network. On view of the mobile network, they are crucially similar to an normal mobile ,including the SIM to point out one selves to the network. The purpose of GSM is to dispatch information from control unit to base unit .We use GSM 900 which uses at 815 to 915Megahertz to dispatch an information from the mobile station to the base unit.. In 25Megahertz Bandwidth 124 carriers are produced with Strait(channel) spacing of 200 kilohertz Frequency Division Multiple Access. Each carrier divides into 8 aperture Time Division Multiple Access. During illustrate of time 992 speech medium are made access able in GSM 900.

F) MOTION SENSOR:

A motion sensor is an electrical gadget that make use of sensor to detect close by motions.. A motion detector is the detector that is the combined component of a system that itself performs a function or it aware the particular person who are in danger of motion in particular area . Motion sensors plays a crucial vital role in security. Nowadays, these sensors use fusion of several technologies. While merging these collective technologies into one detector decreases invalid triggering and also it decrease the cost of the product.

IV LITERATURE SURVEY:

AUTHORS	CONTRIBUTION	LIMITATION
D.G. Monisha et al, 2016 et al, [4]	By pressing a button on a device that is developed when the button tapped by one or two times or it can be long press in emergency times.	The message or the particular information can't be shared and transmitted near the places like low network.
Nishant Bhardwaj et al, 2014 [2]	When the women gets distressed in a particular location the nearest police station gets an alert	They might be a late for some time to reach he particular police station.
Nandita viswananth ET, al 2016 [3]	A foot wearable gets signal through blue tooth by tapping some force through it in emergency .it calls some emergency contacts.	This can be stimulated always and even gets some shocks.
Sankalp mehtha et al 2017[7]	The location can be tracked by shaking the phone.	This can lead to confusion. Mobiles trembles usually.
Vallidevi Krishna murthy et al 2017[6]	The location can be tracked through gprs for every 30 sec. And send to contacts.	It cannot be possible in low network area.
Mohammed zikriya et al 2018[8]	A device can help the capture the image of the culprit at a particular area and send it through area.	Network issues will be in many areas so they cannot accessible.
Jismi Thomas ET, al 2018[9]	The device that can be captured the video of the surroundings and send it to polices and relatives.	It will be not safety
Pragna D r et al 2018[10]	A device that can be wearable and consist of four buttons to functions and to protect them.	Usage of more sensors can costs expensive.

TECHNOLOGY USED IN OUR MODEL:

The Technology Of alarm and alerting to reduce the incidents that can be traced by the certain technology .GPS and GSM Technology. And our proposed model is based on the technology called Internet Of Things. As our designed in two parts.

- Alert call (Or) Message through a wireless technology.
- reduce the incidents of crime

Most of the women will wear watch or bracelet .Meanwhile , the watch or band of our technology is wored by women , then this can help them .,During the incidents of crime like harrasement, etc through our abnormal heart beat, our abnormal temperature it helps the victim by giving alerting messages to victim's relations and nearby control room.

MICROCONTROLLER USED:

In this safety device which is based on the technology called internet of things is combination of several types of sensors for detection purpose which are all controlled by microcontroller called AVR microcontroller. This microcontroller is one of the aged microcontroller and it has version named AT mega 8 microcontroller which has less features that bother microcontroller in complexity and it can available easily. It is very wiered when compared to other microcontroller.

The implementation is done by the AVS microcontroller through GSM modem and interface is done through MAX -Rs 232 on the women safety and security system.

V. SOFTWARE ALGORITHM:

When one's unusual behavior of the user is detected , the following steps should be initiated. According To the input given by the various sensors like Temperature sensors, pulse rate sensors, flex sensors And unusual motion detected by motions sensor , the decision should be made. Based upon which the Device makes the decision, the situations are pre Programmed into the system and this is handled by App in the smart phone.

1. Transmitter and receiver pins of the GPS Module is assigned.

2. Serial buffer is to set with baud rate 9600 and Bitrate 4800.

3.Now the loop is to be set that activate the Following tasks.

- a) First scan the contact number of the person in emergency.
- b) Next get the data through GPS module.

- c) Then conversion of latitude and longitude obtained from GPS module into a goggle URL.
- d) At last, send the alert message to pre - selected some close relations number whom numbers the victim is selected already when the app installed time for informing there emergency situation in quick, from victim Subscriber Identity Module flash card constantly till someone reset that machine
- e) The alert mess is also sends automatically to the very close near people to attain public station.

VI. CONCLUSION

So, to conclude, the frequent occurrence of threats to Women leadsto development of many security applications and devices. This research broadcasts the involvement of various sensors and techniques which are used in applications and smart devices to ensure the women safety. The proposed design will be helpful in very critical and unusual situation that all women and child fear to face. and there are many types of sensors. Are use in this proposed model.With further future research and innovation, this project can be implemented in every aspect of the world for security and surveillance.

“SAVING A GIRL CHID IS SAVING A MOTHER, SISTER AND A DAUGHTER.”

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