

Ensuring Women Safety by Offline Tracking

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Abstract - Our world is a society of peace-loving and law-abiding citizens. However, like any other civil society, there are aberrations, and a few persons break the law now and then. In recent past, a few isolated incidents have been reported across nations in which women travelers were sexually assaulted. There have been many cases where cab drivers, taxi drivers or auto rickshaw drivers have harassed, molested or tried to kidnap the women passengers. To avoid these incidents many have proposed their idea which uses GSM, GPS and a MC to help the victim. Even though, these ideas face many disadvantages such as unavailability of network, warning sent to the person who is not near. Herewith an idea has been proposed to overcome these disadvantages and to help the victim in advance.

Keywords— Aberrations, GSM, GPS, victim, molested. Aberrations, GSM, GPS, victim, molested.

1. INTRODUCTION

There are many situations under which someone has a chance to lose their security. Especially women are forced to be careful always since they are the victims in many problems which arises in the societies. When we talk about women empowerment we should also think about their security. In recent past, a few isolated incidents have been reported across nations in which women travelers were sexually assaulted. There have been many cases where cab drivers, taxi drivers or auto rickshaw drivers have harassed, molested or tried to kidnap the women passengers. These incidents are familiar nowadays since no efficient action has taken to stop these incidents. Hence it is crucial to propose a system to avoid this problems. The current situation of women is referred in figure 1.1. Many have proposed their ideas for women safety system. Some of which is listed in chapter 2.



65% of women reported being harassed on the street.
Extrapolated nationwide, that's roughly
104 MILLION WOMEN.

Fig 1.1 statistical report

1.1 PROBLEM STATEMENT

Women are considered to be weak physically which is taken as an advantage by some intimidator to harass them. Moreover women are not provided with enough security in society. There are many situations at which we don't know what we are doing. Always we can't be conscientious to our surroundings so there is a chance of acute incident. Moreover technology has not only made us works simple but it also developed evilness among loathsome people, which make them to break the law and make them to do crimes.

2. LITERATURE SURVEY

- 1 There are many inventory ideas proposed by many to avoid the women harassment out of which some ideas are listed below; Dongare Uma et al proposes a voice keyword recognizing app to recognize the user and activate the app functionality even when the mobile

keypad locked. The GPS module tracks the longitude and latitude to trace an exact location of a user and sends the pre-stored emergency message including location to the registered contact numbers. The Audio Recording module starts the recording of the conversation for five minutes and stored as evidences. The message goes in queue if network problem and send when network gets available. A notification is generated for successful deliver message.

- 2 Mahesh Kumar et al proposes an emergency response situation recognizing app called as IPROB to provide women safety even in the situation like terrorist attacks or natural disaster, by just shaking the mobile above the predefined threshold value automatically activate the system. It starts capturing the surrounding voice to test and confirm the unsafe IPROB situation where it raised the notification and user fail to respond in predefine time then the message alert sends to the register contacts.
- 3 Vajjyanthi Pawar et al proposes a SCIWARS app (Spy Camera Identification and Women Attack Rescue System) which consist of two modules. A first module act as an intelligent alerts system which detects the infrared rays coming from every Night-vision hidden cameras placed in changing room's hotels room etc. and also informed the user about unsafe place through message. Now it's the user responsibility whether to register a complaint or not by forwarding the notification with the location to legal authorities such as Police. The second module will get activated by pressing any key continuously which will provide the help to the victim from physic attack in unsafe situation. It sends the emergency message containing location to register contacts.
- 4 Bhaskar Kamal Baishya et al proposes an android app to provide security at two different situations as follows. The First module provide security to Women at Emergency Situations propose a Save Our Souls (SOS)

app to provides the security on a single click of SOS button for the women travelling at night or alone. No need to unlock the screen, instead by just pressing the power button it directly triggers the application to run at the background, to send the emergency message including the location in the form of latitude and longitude to the registered contacts.

- 5 Dr Sridhar et al proposes an app, in which a single click of SOS sends a message containing the location and/ or audio- video call to the guardian number. At receiver touch the location URL in the message to view it in the Google Map. It also provides different help tools like First-Aid help, Fake Call Help and video call. The First- Aid help tool provides the help on various health issue problems occurred at an accidental or emergency situation during the night time. First aid help for various problems are as: unconscious and not breathing, choking, bleeding heavily, burns, heart attack, diabetes etc. The Fake call help to escape from the meetings- parties at a time when women start feeling uncomfortable and think that, "if someone calls me then I can leave this place". Fake call rings tone same as that of normal incoming call ring and once call accepted it stop ringing.
- 6 Thooyavan V et al propose an automated highly reliable women security device which consist of the advanced sensors embedded in a wearable dresses. It consist of advanced sensors, GSM and ATMEGA8 microcontroller with ARDUINO tool which keep user under observation at all the time. It monitors the heart beat-rate, temperature and vibration in body through sensors to check for uneasy situation. In such situation it will activate the GPS module to track the location and wireless camera to capture the images that get send to the control room of the receiver through GSM modules to take necessary actions. At the same time processor activate the mice unit with amplifier which strengthens the voice of the women to screams or shout above the threshold limit.

3. PROPOSED SYSTEM

As mentioned earlier the proposed model avoids the disadvantage of contacting a person who is not near, moreover it overcomes the disadvantage of no network or mobile data. This system will be initiated by voice application or switch which is handled by the victim.

3.1 COMPONENTS

S.NO	COMPONENTS REQUIRED	QUANTITY
1	LORA	1
2	MICROCONTROLLER	1
3	CONNECTING WIRES	AS REQUIRED
4	POWER SUPPLY	AS REQUIRED
5	SWITCH	1
6	MESHME	1
7	GPS	1

Table 3.1 components

3.2 BLOCK DIAGRAM

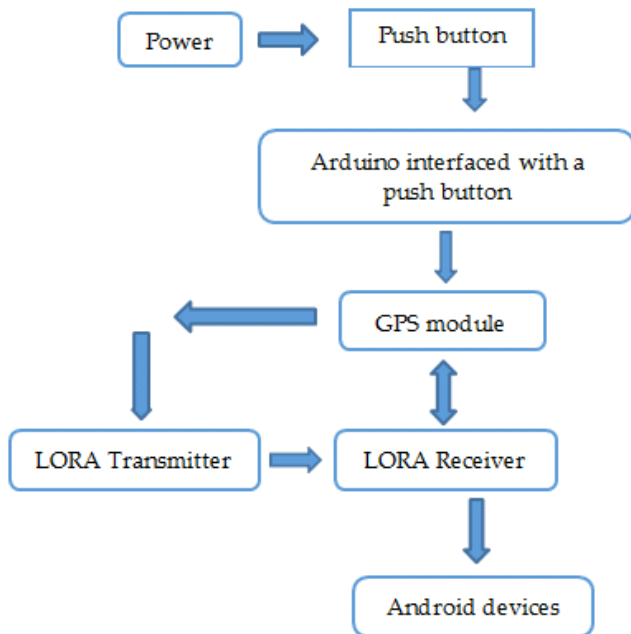


Figure 3.1 Block Diagram

The block diagram shown in figure 3.1 gives the overall idea of hardware setup. Initially the Power supply is given to each device as required. When the Push button is pressed. Lora module act as a Receiver and Transmitter. Transmitter is connected to the Arduino and it's connected with the GPS module. GPS module is used transmit the exact signal of latitude and longitude to the Lora receiver. Lora receiver is connected with the Arduino it used to send signal of latitude and longitude to the LCD Display. Lora can transfer data up to 5 km.

3.1.1 LORA

Lora short for long range module. It is derived from Chirp Spread Spectrum (CSS) technology. Lora devices and it is wireless radio frequency device. It is long range it sends data up to 1m to 500m, but it cannot transfer video, Audio, Images. It can transfer only 50kpbs. It can transfer data of sensor like Humidity sensor, Temperature sensor. It does change rapidly it is long range and it is low power consumption. It can save more Battery power life, but data rate is limited and Bandwidth limited. Lora is a wireless technology, long range. It is secure data transmission for meter to meter. It based on the Chirp Spread Spectrum modulation. It is connected to wirelessly to cloud. Lora Technologies Operates in the different frequency. In United States in Europe. It Operates up to 868MHZ band. In Asia it operates up to 865 to 867 MHZ and 920 to 923MHZ band. Lora is a low power, and wide range and area. It is network protocol developed by the Lora Alliance that wirelessly connects Battery operated things to internet or global networks as bi-directional communication end to end security, Mobility and location services.



Figure 3.2 LORA

3.1.5 Global Positioning System

GPS Stands for Global Positioning System. It is used to find the position. It Receivers Constellation from Satellites and ground stations to compute the position and time almost anywhere on the earth. A ground-based receiver or GPS module. It calculates its position and time. GPS can be work without.

Internet GPS satellites are six orbits around the earth at approximately 20000km. GPS radio can still get fix directly from the satellites. Digital dash users to quickly add the locations. The signal of time is sent from the GPS satellite at the given point. The time difference between the GPS time and the point of time clock.



Figure No 3.5 GPS Module

GPS receiver receives the time signal will calculated and it generate the distance from the receiver to the satellite. The process will be done with three other available satellites. It possible calculate position of the distance from the GPS receiver. It generates on the spot time information. It reduces the margin of the error in the position accuracy. GPS satellites broadcast beams into carrier frequencies, L1 (1,575.42MHZ) and L2 (1,227.60MHZ). Beams can be accessible to the general public are encoded in code. The data of orbit of all satellite is called almanac. The navigation messages are broadcast at rate of 50bits per second.

CHENNAI	13.0801721	80.2838331
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Table 3.2 GPS Location

3.3 FLOW CHART

The flow chart referred in figure 3.7 presents the flow of action of the device. The switch is switch on in the device first to get the location from GPS Module and based upon the area. It generates the signal from Global Positioning System.

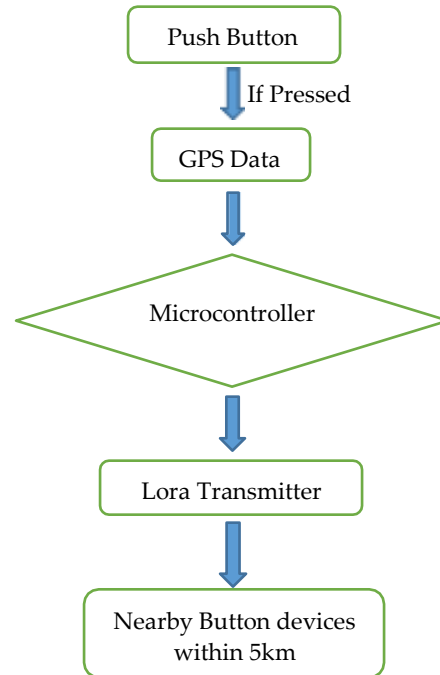


Figure 3.5 Flow Chart

The Location is Generated from the GPS it sends data of latitude and longitude to the Microcontroller is used to collect the data from the GPS and it is used to data to Lora Transmitter. Lora Transmitter send the data to the Lora Receiver. It collected the data from the meter to meter by offline system. It works without the internet. Lora Receiver send the data to the Microcontroller. It sends the GPS data Latitude and Longitude to the display. The Latitude and Longitude data are entering into the online map to get an accurate location.

3.4 HOW IT WORKS

The idea is that when the victim finds that she is in danger. All that she wants to do is that she wants to press a Push

PLACE	LATITUDE	LONGITUDE
BIT	11.4956653	77.2763231
COIMBATORE	11.0018115	76.9628425
ERODE	11.3692044	77.6766269
OOTY	11.4037401	76.6959156

Button. This will initiate the device various proposed ideas involves the use of GPS (Global Positioning System) for tracking the location of the moving vehicle. Lora Transmitter is used to send the location data to Lora Receiver. Lora Receiver collect the data from transmitter and it send a signal to the nearby android devices. The GPS data are collected and it enter in the online map services.

4. CONCLUSION

The proposed ideas of the several authors help woman to have a self-defense mechanism in case any harassment. But however, there must me a way to overcome the problem which arrives in their proposal which is avoided in proposed system.

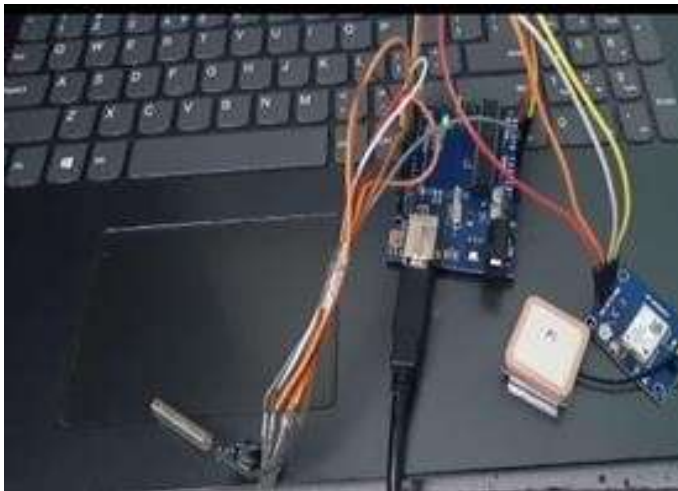


Figure 4.1 LoRa Sender



Figure 4.2 LoRa Receiver

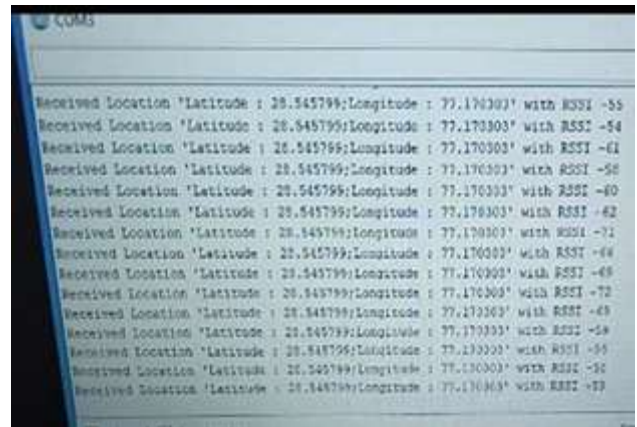


Figure 4.3 Location output

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