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WOMEN SELF DEFENSE SYSTEM WITH LOCATON TRACING AND SMS ALERTING THROUGH GSM AND GPS TECHNOLOGY

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ABSTRACT

In today's world, where the technology is rapidly growing, the prime question that arises in everyone's mind in recent and in past is only about the safety and security. The safety not only includes for women, it is also important for children, aged people, physically challenged people and for every individual. It is right of every individual to go against the crimes. Here in this document we introduce a gadget using present technology that minimize the crimes and provides security for each and every individual. In present technology microcontroller applications are becoming popular. Using this microcontroller application ideas we are interfacing the components like GSM modem, GPS receiver, Shock generator, voice recognition kit and alarm to the microcontroller. The location of the victim is traced using the GPS technology and SMS will be sent to the nearby police station and care taker by alerting through GSM technology. When the alarm key is pressed, it generates a sound to grab the attention of the nearby people. The main objective is to provide cost effective, less power dissipation and compact gadget.

Keywords: *Education, Security, Safety.*

I. INTRODUCTION

The security has become a major issue in the modern world where technology is growing day by day. Security is nothing but using the present technology many invention have been created in other fields, but inventors are least concentrated on the safety and security. In this modern era women are taking places in all the fields and their lifestyle has changed. They like to live independent life by earning themselves. When they come to earning topic women are least bother about shifts it may be day shift or night shifts. At this time the security is important at workplaces. Security not only include only for women, it has become major issue for every individual. It is the duty of every individual to act against the crimes. Although many inventions has been made to go against issues like kidnapping, abusing, harassment, eve teasing. But implementation of the existing devices is not successful for some or the other reason. To overcome this kind of incidents, we are proposing the safety device that is portable, cost effective, user friendly since it can be carried everywhere. Here the proposed document that can be implemented in a watch since it is very user friendly and everyone wears wherever they go. If any individual feels unsafe or insecure they can press the button given in the watch.

For example, in the figure we can see that the victim is facing a problem, in that situation she can activate the button which sends messages to nearby police stations and to registered phone numbers using GPS and GSM technology. Also she can press the button that produces audible sound to some distance and also sends messages. If the situation goes worse she can press the button that produces the shock of low frequency.

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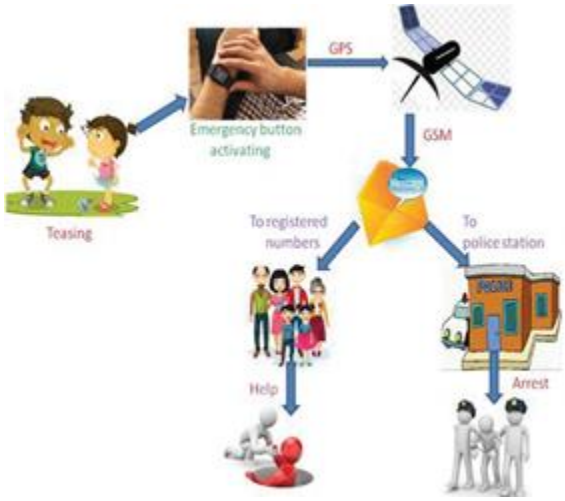

Figure: how the gadget works

In the above diagram the girl is facing some kind harassment at that time the device which is with her is used to get a help from family members or from police station. The current location of the girl can be shared through global positioning system with Google map. And messages can be sent silently, graphics, and to the registered phone numbers in the SIM (Subscriber Identity Module) and also to the police stations. If the situation goes worse, the device produces alarm sound for a certain meters. Alarm gets activated if the voice of the user matches the pre-recorded voice that is stored in the voice recognition kit. The device produces shock of low frequency from shock wave generator to escape from the situation.

II. LITERATURE SURVEY

In paper[1] the security is the major requirement for every individual on the earth. Especially women are facing problems in one or the other way. Women are dreaming and thinking about the safety that when they can move out from home freely whenever and wherever without the feeling of insecurity. Even though women are well educated, they are continue to face social challenges. Keeping security issues in the mind author BasavarajChougula and ArchanaNaik came up with an idea called Smart Girls Security System. This device consists of different modules like Global positioning System, GSM, Arduino board, screaming alarm and set of pressure sensors with rechargeable batteries. This idea has been implemented in the belt which can be carried by user easily and provides help to the victim in any kind of bad situations. Maintaining the Integrity of the Specifications

In paper [2] as the technology is growing rapidly and all are getting good education and willing to survive their own life by going to jobs to live independent lives. Women also wish to leave independent life, survive independently and support help to their family. Women works in all different fields like IT, BPO's, call centers, teaching, driving etc. Some jobs are having rotational shifts and they have to work in the morning or in the night and some jobs are do not have any kind of shifts. When women working at night, after working they need to leave the office and travel late night to reach their home. So they may feel insecure and may face strangers at lonely places. To overcome their insecure feeling author came up with an idea known as Portable device for Women Security that can be carried out every individual. This system provides shock and send message to the nearby police station and to the caretaker through the help of GPS and GSM technology. This technology generates continuous message to the particular number till they receive it and checked by that user.

In paper [3] the technology called GPS and GSM are used for the purpose of sending messages to the caretaker, police station and to the registered number that are stored in the SIM (Subscriber Identity Module) card. Using this technology person who is in trouble or some kind of problems can hope the help by sending messages which provides fast reaction on the situations by pressing the button which is located on the gadget in case of harassment.

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This message is declared to the number in the form of SMS alert. Further it can be tracked using the Google Map in terms of latitude and longitude.

III. METHODOLOGY

The proposed gadget consists of following components:

- Shockwave generator
- GPS Modem
- Alarm
- LCD
- ARM 7
- Power Supply
- Voice recognition
- GSM/GPRS Modem
- Emergency Key

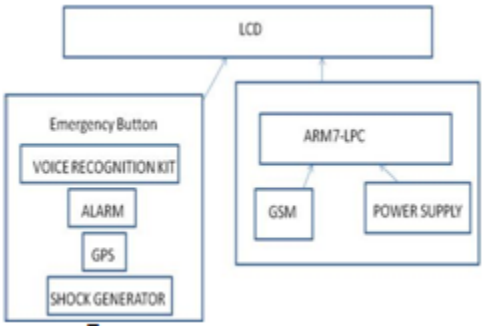

Figure: components arrangements

Shockwave generator: It produces a shock of very low frequency. This button is used by the victim in case if victim is not getting any help from family or police station to escape from the culprit. It provides instantaneous solution.

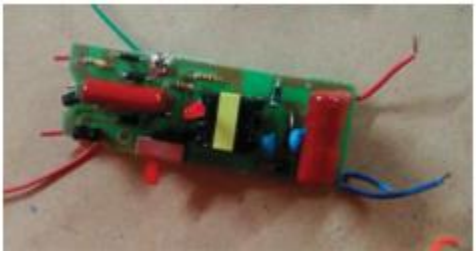

Figure: shock generator

GPS modem: Identifies the location of the victim in terms of longitude and latitude. It calculates initially the location of the victim, if the button gets activated this modem sends the messages to the registered numbers and to the police station which is near to the victim. The message gets delivered to the numbers in the form of URL, this can be opened in Google map.

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Figure: GPS modem

Alarm: It produces sound that is audible for certain distance. It is activated by the voice of the user. It can also be activated by pressing the button which is located on the gadget. Usage of this component left to the users.

Figure: Alarm

Liquid Crystal Display**:** It is used to display the time and status of the messages in the form of 16 characters in 2 rows.

Figure: LCD

The usage of LCD is more than the LED because of the following reasons:

α. Low price of LCD

β. Displaying capacity of numbers, characters, graphics is more compare to LED.

ARM7-LPC: Advanced RISC microcontroller with low power consumption, it is the main part of device and controls the activities of other components.

Figure: ARM7-LPC

Power Supply Unit: It consists of rechargeable batteries. It is used to supply power to all other component that are interfaced.

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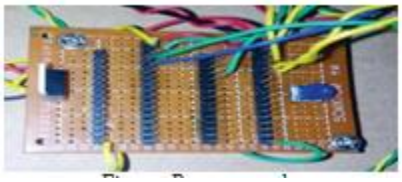

Figure: Power supply

Voice recognition Kit: It is used to store the voice of the user. It can store up to 72 different kinds of voices. The pre recorded voice will act as commands to the devices and initiates to send messages and alarm. The user can store the voice by switching to the button one, it displays "YOU CAN SPAEK NOW" message.

Figure: Voice recognition kit

GSM/GPRS Modem **:** Global System for Mobile communication is used to send the location information of the victim in the form of messages to the numbers registered in the SIM (Subscriber Identity Module). It is a removable smart card containing user information. It stores the number of the necessary contacts to contact in case of emergency by sending the messages.

Figure: GSM modem

Using the above mentioned component the interfacing is done. The code to operate the gadget is written y=using embedded c language and it is dumped to the ARM7-LPC microcontroller using the software called Flash magic. The code is dumped once, no need to dump the code every time when running the gadget. The code is written in the environment called Kiel-C compiler, which supports the microcontroller based application programs.

The gadget works as follows:
The user of the gadget, stores the voice in the voice recognition kit of the flash memory of the gadget, which will

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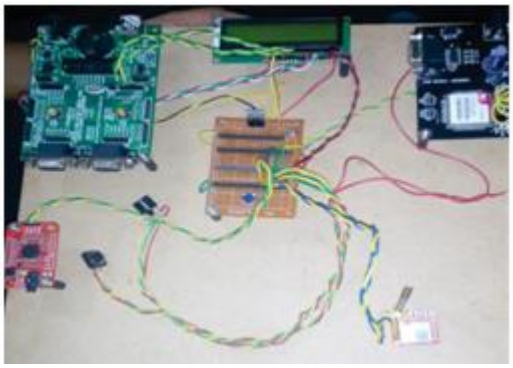

Figure: interfacing of the components

be used as commands to the microcontroller to activate the message by gathering the information about the location, it can store up to seventy different voices. Whenever user is lacking in security can say the words which are stored in the memory which generates alarm sound up to some radius. User can also send a message about the present situation by pressing the emergency key used is used for sending messages. Messages are sent and received from the victim and to the caretaker respectively through the GPS and GSM technologies. The interfacing of the components is done as shown in the below figure.

Finally the shock generating button is used by the victim if in case no one arises or arrived to help the victim.

IV. APPLICATIONS THIS GADGET CAN BE USED FOR THE SAFETY OF

- Women and men
- Physically challenged people like deaf, dumb, blind
- Children

This gadget can be used in the field of Military to track the location of the soldiers.

- ξ Military to track the location of the soldiers.
- ξ Accidents

V. ADVANTAGES

This gadget can be owned by every individual

- Consumes low power
- Rechargeable batteries
- Maintenance is easy
- Short term prevention
- Single gadget with multiple functionalities.
- Eco-friendly

But the proposing gadget sends messages about the location of the victim using GPS and GSM technology to the police station and to the saved numbers for the help and also it provides instant or sudden protection to the victim by activating the button called shock generator button.

VI. FUTURE SCOPE

The implementation of the proposing gadget can be used in future as follows:

- The proposing system is wired and it can access by the Bluetooth connectivity.
- In the office security purpose

- In colleges
- In Schools
- In hospitals
- And parking system

VII. CONCLUSION

Keeping security issues in mind, the proposed gadget helpful in avoiding crimes to an extents and can be implemented in a watch since it is very user friendly and everyone wears wherever they go. If any individual feels unsafe or insecure they can press the button given in the gadget. An existing system tracks only the location of the victim to provide help. Shock generator which generate electric shock to the opponent or culprit. The messages can also been sent through the pre-recorded voice of the users, the voice acts as the commands to the microcontroller to activate the message and to produce sound to the distant person for help. This gadget can be used by all human beings for the purpose of safety.

VIII. ACKNOWLEDGMENT

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REFERENCES

1. *AshleshaWankhede, AshwiniVelankar, PriyankaShinde, "Portable device for Women security", International Journal of Research in Engineering and Technology, volume:04, Issue:03, 2015*
2. *Prof.BasavarajChougula, ArchanaNaik, Monika Monu, PriyaPatil and Priyanka Das, "SMART GIRLS SECURITY SYSTEM", IJAIEM, ISSN 2319 – 484, Volume 3, Issue 4, April 2014*
3. *Sriranjini. J, "GPS and GSM based Self Defense System for Women Safety", Journal of electric and electronic system, 2017*
4. *Dhanshree Joshi, Chaitali Kulkarni, "Protection Circuit for Girls", International Journal of Engineering Trends and Technology (IJETT) – Volume 33, March 2016*
5. *Ms.Thania Kumar, "My Kid: An Android Based Child Tracking System", International Journal of New Technology and Research ISSN:2454-4116, Volume-2, Issue-5, May 2016*
6. *Dr.Aditi Jain and Ms.ShivaniGambhir,"Socio-Economic Women Empowerment: Sharp Focus", International Journal of Advanced Research in management, 2016*
7. *Nishanth Bhardwaj, Nitish Aggarwal, "Design and development of "Suraksha"- a women safety device", International journal of Information and computation technology, ISSN 0974-2239, Vol-4, 2014*
8. *Dr. Sridhar Mandapati, Sravya Pamidi, Sriharitha Ambati, "Mobile based women safety application", 2015*
9. *Prem Kumar.P, Cibichakkaravarthi. R, Keerthana, Ravivarma, Sharmila, "One touch alarm system for women safety using GSM", International journal of science technology and management, Vol-4, 2015*
10. *Yatharth Choudhray, Surbhi Upadhyay, Dr.Ritha Jain, Abhishek Chakraborthy, "Women safety device", 2nd international conference on emerging trends in engineering technology science and management, , 2017*
11. *A.H.Ansari, Balsaraf Pratiksha P, Maghade Tejal R, Yelmame Snehal M, "Women Security System using GSM & GPS", International Journal of Innovative Research in Science, Engineering and Technology, 2017*
12. *Mr.MageshKumar.S, Mr.RajKumar.M, "IPROB –Emergency Application For Women", International Journal of Scientific and Research Publications, Volume 4, Issue 3, March 2014.*