

Spot: A Safety Band for Women

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Abstract- *With the development of economies, women, child, old age safety has been paid more and more attention on in a today world. In 2015, 92% of the women feel unsafe in Delhi. Already available products in market are the stun gun, the stun baton, The pepper spray, The stun ring, The personal alarm, The lightning strike personal protection device, The mace spray, The TASER device, The tear gas spray, The ultrasonic dog repellent. All of the products are not frequently used by females. This project report introduces a wearable band can work as a fashionable jewelry and keep you safe and connected as well, consisting of sensing, alert generation, on spot protection. This system implements the threat-monitoring and service-provision anywhere and anytime. The band is designed in such a manner that it is a wearable device for women to communicate/ raise alert when she is in danger. As existing devices are complex to use or even difficult to carry a wearable band can work as a fashionable jewelry and keep you safe and connected as well. A success can be measured in drop in crime against women and more criminals are caught after its usage.*

Keywords- Women Safety, Bluetooth, Wearable band, Electric shock circuit, Android application, Voice recognition, Pulse detection, GSM module, GPS module, Arduino

I. INTRODUCTION

SPOT is a wearable safety watch which aims to solve the issue of women safety by providing every female a convenient way to get help whenever and wherever, they are in danger. SPOT gets activate when the heartbeat of a female is getting abrupt due to some external threats or when voice recognition detects scream or a woman shouting for help, and the other alternative to activate the device is emergency panic button. On getting activate SPOT will send SOS message to contacts saved in its directory and also to nearest police station and local NGO, woman safety helpline branch. GPS module is added to the project to detect the location, time and send these parameters as an information in SOS message to all contact of family friend woman helpline and nearest police station so that victim can be easily traced ,so that the person would be reachable as soon as possible. While for on spot protection victim can make use of electric shock circuit protection which to give a non-lethal shock if any kind of assault is initiated.

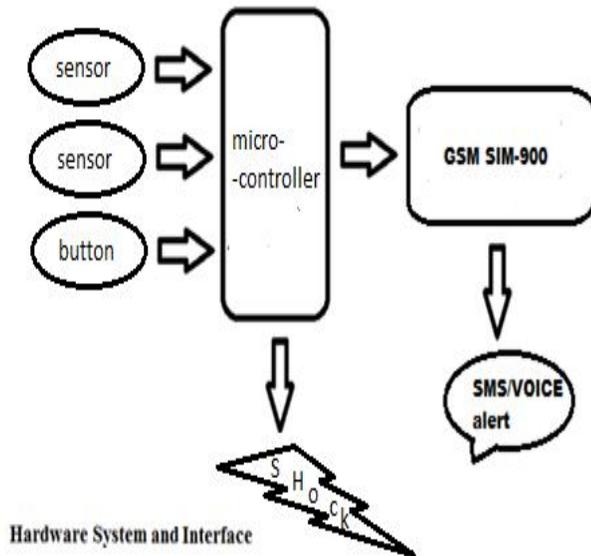
The uniqueness of this watch is that it does not require any smart phone to work. So from this we conclude

that women safety is required in everyday life as the violence, rape cases are increasing day by day and Knockout will help women to feel safer at any point of time especially in rural areas where people cannot afford smart phone. It will add value in terms of e-commerce as this watch will not only sell as a fashionable product but also provide security and safety to the women without using any smart phone. The end users or women will get benefit from this idea as crime is increasing day by day and we need such innovations that will help women to feel safe while working late at night.

II. RELATED WORKS

In 2015, 92% of the women feel unsafe in Delhi. Already available products in market are the stun gun, The stun baton, The pepper spray, The stun ring, The personal alarm, The lightning strike personal protection device, The mace spray, The TASER device, The tear gas spray, The ultrasonic dog repellent. And other products like “Smart Girls Security System” [4] is a device which looks like to a normal belt, but is capable of performing location tracking. But it is hardly available or very costly. All these devices leave some scope for improvement either in case of cost or size. “Women Anti-Rape Belt”[6] is a safety weapons available for women self-protection in situations like rape, assaults and adds new perspective of using GPS system and android smartphones for women safety. “VithU”, which an emergency application is created by a popular Indian crime television series “Gumrah” aired on Channel. In this app when the power button of the Smartphone is pressed twice consecutively, it will send alert messages, with a link to the location of the user. Now Honor smartphone has a mobile application “Emergency Alert” same VithU. All of the products are not frequently used by females.

III. BLOCK DIAGRAM



IV. WORKING

This project contains Arduino nano as a controller, for monitoring of different parameters we are using pulse sensor for heart rate monitor, voice recognition module v2 as roar/scream sensor, gps module(NEO 6M) for location, GSM SIM-900 module for alert message and voice call generation, push button for emergency alert generation and electric shock circuit for on spot protection. All the sensor are connected to the Arduino board which collect different parameters like heart rate, voice pulse, push button signal and process it accordingly. While in situation of threat if emergency(push button) button is pressed, or sudden increase of body pulse say 235-240bpm for 1-2 minutes constantly, or shouting for HELP or SCREAMING the system generates sos sms with information like gps coordinate , a missed call and send it to police , local NGO , women safety center and victim relatives. While for on spot protection victim can make use of electric shock circuit protection which to give a non-lethal shock if any kind of assault is initiated.

V. FUTURE SCOPE

This paper describes a operational self-defense gadget which would provide protection to women in case of any assault or unsought contact. But there is always area for improvement. Some improvements can be made so that it expects to enhance the performance without altering the existing design. For more reliable and low complexity of the system the controller section can be replaced by other Advanced Microcontrollers and accuracy can be increased by using high sensitive sensors and more reliable certified

modules. Voice recorder will be added which will recognize the voice as well as records it for future prospective and video/image screen cast which will help to screen cast video/image at the time of danger. Android application will be added to connect project through Bluetooth so as to provide more features. The flaws can be rectified and online monitoring service can be provided by using the IOT technology.

VI. CONCLUSION

The uniqueness of this device is that it does not require any Smartphone to work. So from this we conclude that women safety is required in everyday life as the violence, rape cases are increasing day by day and spot will help women to feel safer at any point of time especially in rural areas where people cannot afford smart phones. The major merit of this product is its simplicity and is also economical and effective handy device for women who travel alone. This gives more confidence to the women about their safety. It can also be used as a digital watch and a phone locator if phone is lost or misplaced. The model is developed with easily available and comparatively low cost components. This work is of moderate cost, very effective, and productive. It will add value in terms of e-commerce as this watch will not only sell as a fashionable product but also provide security and safety to the women without using any smart phone.

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