

Embedded Based Security System

GPS Integrity Monitoring and Biometrics based Safety Enhancement

Latha.S

B.Tech- Information Technology

Sri Sairam Engineering College

lathashankar96@gmail.com +919176467210

Lavanya.S

B.Tech- Information Technology

Sri Sairam Engineering College

krithlav@gmail.com +919940675815

Abstract-*In this article, we have proposed our idea to develop the wrist watch as a safety device that can send alert signal to any police station in case of an emergency. We still have not yet reached a scenario where women could walk about with no worries in this industrial world, so without putting lives in danger, it is better to take precautions and ensure women safety by using this watch. By a simple press of a button and using the concepts of Biometrics and GPS, we have proposed this idea. The alert message consists of information regarding the current location of the victim, which enables the police officers to arrive at the scene and ensure her safety. Such an approach helps in saving womankind and thereby ensuring their safety.*

I. INTRODUCTION

Women in India- a better half of Indian society, today, are becoming the most vulnerable section as far as their safety and security is concerned. When we turn the pages of a newspaper, we come across many headlines reporting cases of sexual assault, molestation, sexual harassment, rapes, trafficking, ill treatment of women in houses, violence against women in remote areas etc. It is sad reality that we live in an increasingly violent society in which the fear of crime is ever-present. Personal safety has become an issue of importance for everyone, but especially for women. So to avoid such happenings we aim to propose this system.

II. EXISTING SYSTEM

A watch with a GPS tracker is currently in use in some foreign countries. Parents use this to have a lookout on their children playing outside. When the child crosses a preset distance, its location will be tracked via GPS; and that message will be sent to the parents. Using this basic idea, Indian government has started to work on a plan to develop a wrist watch like safety device that can sense voice command and

users and send alerts to the police and relatives in case of an emergency. The device would react to voice command and trigger off many processes immediately like sending alerts to phone numbers fed in the system. Commercial production were said to be undertaken only after successful trials and on meeting the stringent tests of reliability and affordability.

III. DISADVANTAGES OF EXISTING SYSTEM

There are few serious issues in the system that our Government has decided to implement.

There is a high probability of misuse. In that case it is an absolute waste of time for the rescue team who arrive at the scene.

There is also chance of WRONG ALERTS. Voice Trackers are highly inefficient at most cases. And those preset words could even be used during the normal talks, thereby leading to wrong alerts.

IV. PROPOSED SYSTEM

As proposed in the abstract of paper, the motto of our existing system is to assure safety for women. Here components used includes a watch in which GPS(Global Positioning System) Tracker and fingerprint scanners are embedded.

So when the girl is in four corners, she needs to press a button in the watch and scan her thumbprint. As soon as she does this, her current location is traced through GPS. A sim is installed which has the emergency codes of all the police stations all over tamilnadu. Then the emergency code of the corresponding area is found out and an emergency signal (or alert message) is sent to that respective station. The alert message consists of informations regarding the current location of the victim and her thumbprints.

By matching the received thumbprint and those in our database (which consists of details about the

particular victim which was registered after purchasing the watch) , the details of the victim is found out using Biometrics Fingerprint Sensors .This enables the police officers to arrive at the scene and ensure her safety.

V. COMPONENTS REQUIRED FOR THIS SYSTEM

The following are few major components required in the system:

A. GPS TRACKING UNIT:

A GPS tracking unit is a device, normally carried by a moving vehicle or person, that uses the Global Positioning System to determine and track its precise location, and hence that of its carrier, at intervals. The recorded location data can be stored within the tracking unit, or it may be transmitted to a central location data base, or Internet-connected computer, using a cellular (*GPRS or SMS*), radio, or satellite modem embedded in the unit. This allows the asset's location to be displayed against a map backdrop either in real time or when analysing the track later, using GPS tracking software. Data tracking software is available for smartphones with GPS capability.

B. FINGERPRINT SENSOR

A fingerprint sensor is an electronic device used to capture a digital image of the fingerprint pattern. The captured image is called a *live scan*. This is used in Biometrics which is a metric related to human characteristics. Biometrics authentication (or realistic authentication) is used in computer science as a form of identification and access control. It is also used to identify individuals in groups that are undersurveillance.

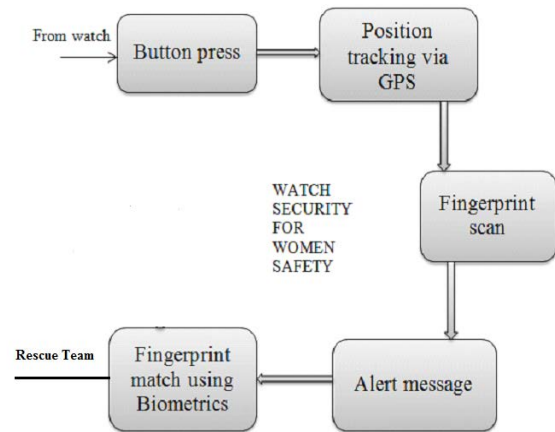
These Fingerprint Sensors are the *distinctive*, measurable characteristics used to label and describe individuals. Biometric identifiers are often categorized as physiological versus behavioral characteristics.

VI. ADVANTAGES OF PROPOSED SYSTEM

This system overcomes the disadvantages of existing system by including the concepts of *Biometrics* , which produces *reliable results* through fingerprint matching.

The database used for linking these fingerprints is also effective as it includes the records of the victims who only bought the watch.

VII. PROPOSED MODEL - DFD:



VIII. CONCLUSION

Thus this system when implemented in future can ultimately assure women safety in India. Women still are not able to enjoy the fruit of freedom that they are entitled to, in this independent Nation. We want what we deserve - for us and for our daughters – a safer India for women.

REFERENCES

- [1] <http://tech.firstpost.com/news-analysis/women-safety-govt-plans-to-design-watch-that-can-record-send-alert-212590.html>
- [2] <http://www.gizmag.com/hereo-kids-gps-location-tracking-watch/31165/>
- [3] https://en.wikipedia.org/wiki/Fingerprint_recognition
- [4] https://en.wikipedia.org/wiki/GPS_tracking_unit#Data_loggers
- [5] www.gpstracker.in/services.html
- [6] computer.howstuffworks.com/fingerprint-scanner.html