

# Women Security Device Using GPS: A Review

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**Abstract**— In our Country, even though it has superpower and an economic development, but still there are many crimes against women. This device is a security system, specially designed for women in distress. Method/Analysis: Using microcontroller for the hardware device is the most efficient and it consumes less power. Findings: We analysis that there is no security device for our total safety. The user has to carry multiple devices. We found an ALL-IN-ONE security device which has all the features in one click. Applications/Improvements: In this project we used microcontroller and c and python application in which both the device and the smart phone are synchronized using GPS, hence both can be triggered independently. We can send message for further investigation and can give an alert call and message to the pre-set contacts with the instant location every 2 minutes and can be tracked live using our application.

**Keywords:** GPS (Global Positioning System), All-In-One Security Device

## I. INTRODUCTION

Security is the condition of being protected against danger or loss. In the general sense, security is a concept similar to safety. The word “security” in general usage is synonymous with safety, but as a technical term security means that something not only is secure but that it has been secured. This project is designed with microcontroller 8051. This project presents a women safety detection system GPS(GLOBAL POSITIONING SYSTEM) modems. The system can be interconnected with the alarm system and alert the neighboring. This detection and messaging system are composed of a GPS receiver, microcontroller, and GPS modem.

GPS receiver gets the location information from satellites in the form of latitude and longitude. The microcontroller processes this information and this processed information is sent to the user using GPS mode. Even in this modern era women are feeling insecure to step out of their house because of increasing crimes in our country like harassment, abuse, violence, etc., The corporate and IT sector are currently in boom. Many women are working in corporate even in night shifts. There is a feeling of insecurity among the working women. The proposed device is more like a safety system in case of emergency. This device can be fitted in a jacket (similar to a blazer for women). It is an easy to carry device with more features and functions. The emergency push button is held to one of the buttons of the jacket. The main purpose of this device is to intimate the parents and police about the current location of the women. A GPS system is used to trace the current position of the victim and a GPS modem is used to send the message to the predefined numbers. There are several applications that reduce the risk of sexual abuse by sending

SMS but in our model, we also provide an audio circuit which is more useful for physically challenged people.

This device can also be miniaturized in the future and can be embedded in pieces of jewelry, mobile phones, etc., in order to make this device handy. This can also help the police department to reduce the crimes, which are against women and the evidence can be used to trace

- Being stalked while walking.
- Attempted physical or sexual assault.
- Unsafe neighbors.
- Domestic violence.
- Hidden camera detector

## II. LITERATURE REVIEW

The term “GPS was first used in 1999 by British technology pioneer Kevin Ashton to describe a system in which objects in the physical world could be connected to the Internet by sensors. Ashton coined the term to illustrate the power of connecting Radio-Frequency Identification (RFID) tag used in corporate supply chains to count and track goods without the need for human intervention. While the term “GPS” is relatively new, the concept of combining computers and networks to monitor and control devices has been around for decades. By the late 1970s, for example, systems for remotely monitoring meters on the electrical grid via telephone lines were already in commercial use. In the 1990s, advances in wireless technology allowed “machine-to-machine” (M2M) enterprise and industrial solutions for equipment monitoring and operation to become widespread. Many of these early M2M solutions, however, were based on closed purpose-built networks and proprietary or industry-specific standards rather than Internet Protocol (IP)-based networks and Internet standard using IP to connect devices other to the Internet is not a new idea. The first Internet “device” an IP-enabled toaster that could be turned on and off over the Internet was featured at an Internet conference in 1990. Over the next several years, other “things” were IP-enabled, including a soda machine at Carnegie Mellon University in the US and a coffee pot in the Trojan Room at the University of Cambridge in the UK (which remained Internet-connected until 2001). From these whimsical beginning, a robust field of research and development into “smart object networking” [helped create the foundation for today’s Internet of Things. If the idea of connecting objects to each other and to the Internet is not new, it is reasonable to ask, “Why is the Internet of Things a newly popular topic today?” From a broad perspective, the confluence of several technology and market trends is making it possible to interconnect more and smaller devices cheaply and easily. Many organizations have developed their own taxonomies and categorizations of GPS applications and use cases. For example, “Industrial IoT” is a term widely used by companies and associations to describe GPS applications related to the production of

goods and services, including in manufacturing and utilities. Others discuss IoT by device type, such as wearable and appliances. Still, others focus on GPS in the context of integrated location-based implementations such as "smart homes" or "smart cities". Whatever the application, it is clear that IoT use cases could extend to nearly every aspect of our lives. As the number of Internet-connected devices grows, the amount of traffic they generate is expected to rise significantly. For example, Cisco estimates that Internet traffic generated by non-PC devices will rise from 40% in 2014 to just under 70% in 2019. Cisco also forecasts that the number of "Machine to Machine" ("M2M") connections (including in industrial, home, healthcare, automotive, and other IoT verticals) will rise from 24% of all connected devices in 2014 to 43% in 2019. One implication of these trends is that over the next ten years we could see a shift in the popular notion of what it means to be "on the Internet". As MIT Professor Neil Greenfield noted, "the rapid growth of the World Wide Web may have been just the trigger charge that is now setting off the real explosion, as things start to use the Net". In the popular mindset, the World Wide Web has almost become synonymous with the Internet itself. Web technologies facilitate most interactions between people and content, making it a defining characteristic of the current Internet experience. The Web-based experience is largely characterized by the active engagement of users downloading and generating content through computers and smartphones. If the growth projections about GPS become reality, we may see a shift towards more passive Internet interaction by users with objects such as car components, home appliances and self-monitoring devices; these devices send and receive data on the user's behalf, with little human intervention or even awareness. GPS may force a shift in thinking if the interaction with the Internet—and the data derived and exchanged from it—comes from passive engagement with connected objects in the broader environment. The potential realization of this outcome—a "hyperconnected world"—is a testament to the general-purpose nature of the Internet architecture, which does not place inherent limitations on the applications or services that can make use of the technology. The cloud concept that has recently become the technological hot topic, is actually very old. It has roots dating back to the 1950's and 1960's. Computer scientist John McCarthy has been credited as one of the founding fathers of the cloud computing concept. In 1961, he was the first to publicly suggest (in a speech given to celebrate MIT's centennial) that computer time-sharing technology might lead to a future in which computing power and even specific applications could be sold through the utility business model (like water or electricity). This idea of a computer or information utility was very popular in the late 1960s but faded by the mid-1990s. However, since 2000, the idea has resurfaced in new forms (see application service provider, grid computing, and cloud computing.) A fellow computer scientist, J.C.R. Lickliter is also credited as one of the founding originators of the cloud concept. The idea of an "intergalactic computer network" was introduced in the sixties by J.C.R. Lickliter, who was responsible for enabling the development of ARPANET (Advanced Research Projects Agency Network) in 1969. His vision was for everyone on the globe to be interconnected and

accessing programs and data at any site, from anywhere, explained Margaret Lewis, product marketing director at AMD. "It is a vision that sounds a lot like what we are calling cloud computing". The cloud concept is not able to take off in the 1950's and 1960's because of technological limitations. Unfortunately, computer hardware and internet data speeds could not support the amount of data users wanted to send and receive. During the 1990s, technology would finally begin to improve and because of that, it began to satisfy the requirements needed to start bringing cloud computing to life. Cloud computing for the masses had finally arrived. Cloud storage is a subcategory of the very complex cloud computing idea. It is a service model in which data is maintained, managed and backed up remotely and made available to users over a network (typically the Internet). FilesAnywhere.com was one of the first companies to offer a cloud storage service. Their cloud storage service enabled users to store data on International Journal of Application or Innovation in Engineering & Management (IJAIEM) Web Site: [www.ijaiem.org](http://www.ijaiem.org) Email: [editor@ijaiem.org](mailto:editor@ijaiem.org) Volume 5, Issue 2, February 2016 ISSN 2319 - 4847 Volume 5, Issue 2, February 2016 Page 66 their servers from anywhere at any time, while also being able to retrieve the data from anywhere at any time. FilesAnywhere.com would be a pioneer in the cloud storage business and many companies would follow suit.

### III. PROPOSED SYSTEM

Nowadays, there are news of women harassment than their achievements. Women feel unsafe to travel alone at odd hours. There are many android applications that are developed for women safety. But it is not always possible to carry our mobile phones wherever we go or sometimes we forget to carry it. The proposed system is an attempt made to solve the problems of women's safety. The scope of the system is to develop a smart device which can help women in some emergency situations. The system is a smart wearable device which resembles a jacket. The device contains different modules such as GPS (Global Positioning System), Buzzer, Shock Mechanism Circuit. The main objective of the system is to provide a reliable security system for a woman when they are alone or feel unsafe.

The world is becoming unsafe for women in all aspects. The crimes against women are increasing at a higher rate. The employed women are feeling unsafe due to increasing crimes. This paper proposes a quick responding mechanism that helps women during trouble. When someone is going to harass, she can press the button that is attached to the device and the location information is sent as an SMS alert to few pre-defined emergency numbers in terms of latitude and longitude. The microcontroller used is 8051. It is interfaced with a push button, a GPS module and a speech circuit. If the switch is pressed, it activates the speech circuit to capture the attention of the people nearby for help. The program is developed in C and python language to demonstrate the system capability in providing real-time response, Thus the girl can be safe and she can feel protected.

A. Transmitter:

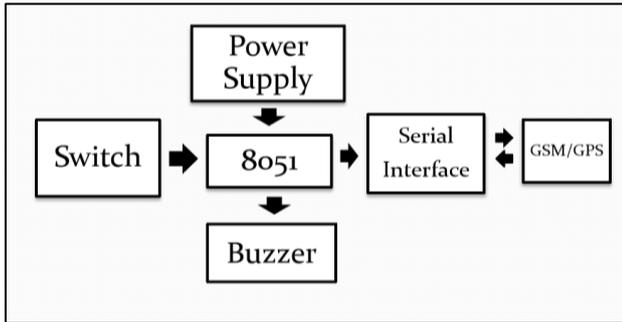


Fig. 1: Block diagram

B. Receiver:



Fig. 2; Mobile Unit

The system basically consists of:

- 1) Switch
- 2) Power Supply
- 3) 8051 Microcontroller
- 4) Buzzer
- 5) Serial Interface
- 6) GPS (Global positioning system)

1) Switch:

In electronics, switch is an electronic component or device that can switch an electrical circuit, interrupting the current or diverting it from one conductor to another.

Typically, electronic switches use solid state devices such as transistors, though vacuum tubes can be used as well in high voltage applications.

The most widely used electronic switch in digital circuits is the metal-oxide-semiconductor field-effect transistor (MOSFET).

2) Power Supply:

The primary function of a power supply is to convert one form of electrical energy into another and, as a result, power supplies.

3) 8051 Microcontroller:

8051 microcontroller was designed by intel in 1981. It is an 8-bit microcontroller. It is built with 40 pins DIP (dual inline package), 4kb of ROM storage and 128 bytes of RAM storage, 2-16-bit timers. It consists of four parallel 8-bit ports, which are programmable as well as addressable as per the requirement. An on-chip crystal oscillator is integrated in the microcontroller having crystal frequency of 12 Mhz.

4) Buzzer:

Buzzer is an electrical device buzzer is an audio signaling device, which may be mechanical, electromechanical. Typical uses of buzzer or beepers include alarm devices, timers, and confirmation of users' input such as a mouse click or keystroke.

5) Serial Interface:

Telecommunication, RS232, recommended standard refers to a standard originally introduced in 1960 for serial communication transmission of data. The standard defines

the electrical characteristics and timing of signals, the meaning of signals, and the physical size and pinout of connectors. The RS-232 standard had been commonly used in computer serial ports. personal computers used them connection not only two modems, but also two printer computers mice, data storage, uninterruptible power supplies, and other peripheral device.

6) GPS (Global positioning system):

The GPS (global positioning system) is “constellation” of approximately 30 well-spaced satellites that orbit the earth and make it possible for people with ground receivers to pinpoint their geographic locations the location accuracy is anywhere from (100 to 10m) for most equipment. GPS equipment is widely used in science and has now become efficient that almost anyone can own a GPS receiver.

IV. RESULT

A. Software

The “latitude and longitude” location will be sent with an alert message to the pre-set contacts for every 2 two minutes in a single click. Double click, audio will be recorded, and an alert message will be sent to the pre-set contacts. Long press will send emergency call with alert message to the pre-set contacts.

B. Hardware:

The “latitude and longitude”, which will be sent from the device with an alert message to the pre-set contacts for every 2 two minutes in a single click, whereas in double click audio will be recorded and alert message will be sent to the pre-set contacts. Long press will send emergency call with alert message to the pre-set contact. A hidden camera detector will be triggered from the device and a message is sent to the phone from hardware. Whereas even in the device using LED light it shows the range of the detected hidden camera. Overall both can act separately and also acts in synchronized

V. CONCLUSION

This type of idea plays an important role in providing the fastest way of safety for women. The proposed design will deal with critical issues faced by women in the recent past and will help to solve them through using safety devices. This work was focused on developing a smart low-cost device to help women, feel safer and prevent the occurrence of rape, harassment, and other dangerous situations. The project would aid in enhancing the safety and security of all despondent and badgered women and children. It can be concluded that the system helps to support gender equality by providing a safe environment to women in the society and allows them to work till late nights. Anyone before doing any crime against the women will be deterred and it helps to reduce the crime rate against the women.

It can be used in:

- Old age person or woman Safety
- Tracking our personal things
- Vehicle tracking

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