



Global Positioning System: Effective Tool in Protection of Women's Dignity

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Global Positioning System: Effective Tool in Protection of Women's Dignity

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Abstract

Protection of women's rights and dignity especially against increasing incidence of sexual assault has embodied as a prime national issue. The Supreme Court of India has had to redefine the term "sexual assault" in a measure to curb this social evil. Cries of increasing protests have resonated in legislative bodies time and again for an effective legislation. Restrictions like dress code imposed by some social organizations (aimed to ward off such incidences) can be challenged as a violation of women's fundamental rights by women activists. The author proposes a tracking system based on indigenous global positioning system consisting of a transreceiver belt \ band worn by the user that will transmit radio-signals (when required) targeted to a central receiving system/server installed in a police control room (PCR). In case of an emergency, the user (the assaulted in this situation) is required to switch-on the band-trans-receiver (activation) leading to the reception of the location-information in the PCR. The transmitter device would also be designed to get auto-activated by any shearing force that may be applied by the assailant. The funds for this system can be raised by fees collected as registration charges of user band-transreceiver tuned with the PCR receiving system.

Introduction

"**Yatra Naarit Pujyatey, Ramantey Tatra Devta**" is a saying from ancient Indian literature which means that 'God resides at those places where women are worshiped'.

Sexual assault is any physical means of outraging and/or attacking the modesty/dignity of a female. It is a crime of violence, the purpose of which is to overpower, control and / or humiliate the female.

Sexual assault is more prevalent than presently thought. For every case reported to police it is estimated that ten more go unreported. At some time in their lives about one in two females is afflicted with this crime. This problem has assumed greater significance ever since girls/women have taken to

outdoor activities like coaching and outdoor jobs (especially those demanding night duties).

Impact of sexual assault

The psychosocial trauma inflicted by an assault on a woman's dignity is immense and at times irretrievable. Their basic feelings of wholeness, strength, trust and self-control are lost, and with them the women may lose confidence in their abilities resulting in sense of insecurity and inferiority which may imprint on their minds permanently.

Current preventive measures and control

1) Role of the society:

Parents are apprehensive and hesitant in sending their girls out of homes. Some social organizations have advised dress code for females. Both these measures can be viewed as infringement on the females' fundamental rights and their freedom. Moreover this does not appear a permanent solution to the problem especially in the modern age we are living in and can be viewed as direct violation of their right to equality.

2) Role of law enforcement agencies:

It appears that present legislation and its process are not sufficient to punish the assailant or even instill any sort of fear in their minds; hence such criminals think trivial about the prevalent punishment against this crime. The demand for more stringent punishment and laws has constantly been raised by various organizations. Some organizations have proposed measures like imposition of restrictions in movements of girls/women, a dress code etc. These restrictions however do not offer a stable resolution of the issue; further, such restrictions may be challenged as violation of women's rights.

In this proposed project, keeping in view the above mentioned problems and limitations, the author proposes the possible application of recently launched Global Positioning System (GPS) and General Packet Radio Service (GPRS) in an attempt to curb this increasing social evil of sexual assault and to preserve the fundamental rights issued to females and

everyone else in the society.

This project is aimed to instill a sense of security (which is steadily receding) in the females' minds and at the same time inculcate sense of fear and terror in the assailants' minds especially in view of recent assaults in some metropolitan cities in moving vehicles, where the proposed project can perform highly effectively in prevention and dealing with this crime.

Methods and Materials

- 1) GPS Operation
- 2) GPRS Operation
- 3) Digital Map Software

GPS:

Global positioning satellite system (GPS) has revolutionized navigation and position location. It is now the primary means of navigation for most ships and aircraft and is widely used in surveying and many other applications. The GPS space segment consists of 24 satellites in medium earth orbit (MEO) at a nominal altitude of 20200 kms with an orbital inclination of 55 degrees [1].

The first commercial use of GPS was in surveying, but by 1990 several companies had produced low cost, handheld GPS receivers for general position location and navigation. GPS receivers are now consumer products and are in process of being available for installation in every car and cellular phone, which is bound to bring down their costs drastically.

GPRS:

The GPRS is a service that provides more efficient packet based data at higher data rates [2-3]. The most commonly used coding schemes for packet data transfer is coding scheme 2 (CS-2), which enables a given time slot to carry data at a transmission rate of 13.4 kbps [4]. The data rate for usable data is approximately 20 to 30 percent less than the transmission rate. The packets are sent over the network node to node. At each node, the packet is stored briefly then routed according to the information in its header [5].

The advantage of GPRS is the use of packet switching technology. It enables multiple users to share air interface resource. Because this is a request allocation procedure, the users feel their service to be "always on" [4].

Digital map software:

Digital map software consists mainly of a digital city map. All the locations (names and places) are

assigned particular values (latitude, longitude and altitude). This software will be installed in a Master police control room. It gives output as the name of the exact location on the map.

Overview of the proposal

A transreceiver band would consist of GPS receiver and a GPRS transmitter. It would be worn by the user and designed to be activated by a press button when the user finds self in a threatening situation. Provision is also to be made for auto-activation of the band on application of any shearing force, which may be applied by the assailant or during a scuffle between the user and the assailant. As soon as the trans-receiver band is activated, the current location of the user provided by the GPS would get transmitted via GPRS to the receiving system installed in the Master police control room (PCR). The digital map software in the Master PCR computer would process and display the location of the user. This location would then be flashed to the PCR van nearest to the site / location of crime via wireless transmission that would then set off towards the site of crime.

The track-route taken by the user to reach her routine destination (work-place/ college/ school/ coaching/ training institute/ home etc) can also be fed into the Master PCR computer; two or more such routes as alternative may also be registered. A monthly report of the routes undertaken or the violation of the registered route(s) to be conveyed to the user's guardian can be considered in an attempt to caution the user to stick to the registered route as her part/role in her safety. This may not be viewed as an encroachment on the civil liberties of the user as the process of registration and abiding to its regulation is with the consent of the applicant and her legal guardian. Even then, a provision may be made to voluntarily switch-off the band by the user when she is meeting her relative or friend on her own will.

Being equipped with the proposed device will boost the girls' confidence, instilling a sense of security at the same time alleviating the fear of an assault.

Recently an article published in Times of India on 21st May 2008 stated, "GPS system is being successfully used in Massachusetts, USA for tracking movements of criminals" [6]. The Oklahoma senate also voted 47-0 to entrust GPS to check domestic violence. This news has rekindled the hopes that the same GPS in modified form, as proposed, can be used for preventing sexual assaults on women in India.

Funding of the system involved in the project

Since the whole system may involve substantial monetary burden on the State exchequer, the author also proposes that contribution to partial funding of the system can be raised by the users also in the form of registration charges of their transreceivers that would be tuned with the receiving system installed in the Master PCR. This will also eliminate (to a great extent) possible misuse of the band by the user as her identity and bio-data (including the routine route adopted during her ambulation) would also be registered in the PCR.

Limitations

- 1)GPS system does not work underwater and underground.
- 2)Errors can be caused in case of tall buildings reflecting the GPS signals because of extra delay in travel time of the signals.

Conclusion

The author hopes and expects that this proposed-project would be able to curb the incidence of sexual assault to a great extent. More importantly, it might work more successfully as a preventive measure. Further, it would preserve the social equality of women and safeguard their dignity and self-confidence. It is also hoped that this project would (to a great extent) ease the apprehension in the minds of the guardians when their girl-children are out of home.

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