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Smart Car System

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Abstract:
Now a day's car accidents due to mobile phones take frequently in high intensity which causes loss of number of life's. This project gives solution to this problem by auto de-acceleration of car. When the mobile phone rings, then the speed of car is automatically decreased after few seconds. Driver is not able to increase the speed of car, till he cant disconnect the call. This system prevents the car accidents because of the use mobile phones.
This project has one more feature i.e. useful in high intensity car accident and helpful for injured peoples on road side. In this project, GPS system is used to detect location of car accident. When the accident is happened then through web API message will be send to emergency service center and victim guardians.
Every year, innumerable road accidents and deaths take place due to distracted driving. Large number of studies shows mobile phone usage while driving was the major reason for distracted driving. With the aim of preventing road accidents due to mobile phone usage while driving, this system propose a highly efficient automatic electronic system for early detection of incoming or outgoing call, sensor located around driver seat used for detecting when the driver uses mobile phone with its range covers only driver seat which decreases speed of the car automatically.
This project describes about the AUTOMATIC VEHICLE ACCI-DENT DETECTION AND MESSAGING SYSTEM using GPS and WEB API technologies. This project using computerized system. The GPS receives the location of the vehicle that met with an accident and gives the information back. This information will be sent to a mobile number through a message. This message will be received using WEB API present in the system. The message will give the information of longitude and latitude values. Using these values the position of the vehicle can be estimated.

Keywords: *Web API, Web, GSM Modem, GPS device, embedded devices*

1. Introduction

Every year, innumerable road accidents and deaths take place due to distracted driving. Large number of studies shows mobile phone usage while driving was the major reason for distracted driving. With the aim of preventing road accidents due to mobile phone usage while driving.
In an emergency, the golden hour is the first sixty minutes after an accident. The victim's chances of survival are greatest if he or she can be given the right medical assistance within the golden hour. Accident Informing on right time is most important to save one's life and this can be done by our system.

1.1. Basic Concepts

Every year, innumerable road accidents and deaths take place due to distracted driving. Large number of studies shows mobile phone usage while driving was the major reason for distracted driving. With the aim of preventing road accidents due to mobile phone usage while driving, this system propose a highly efficient automatic electronic system for early detection of incoming or outgoing call, sensor located around driver seat used for detecting when the driver uses mobile phone with its range covers only driver seat which decreases speed of the car automatically.
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accident and gives the information back. This information will be sent to a mobile number through a message. This message will be received using WEB API present in the system. The message will give the information of longitude and latitude values. Using these values the position of the vehicle can be estimated.

1.2. Modules

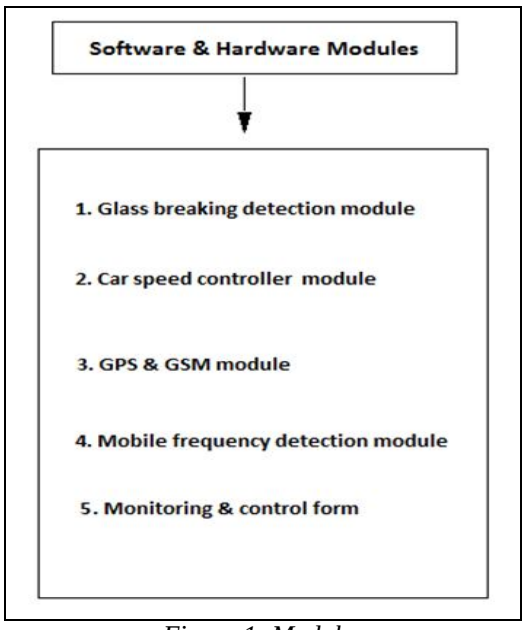

Figure 1: Modules

1.3. Applications

1. Instant awareness of accident status.
2. Life saving for people.
3. Useful for economic car used by ordinary peoples

2. Overview

Over the past 20 years, hand-held mobile telephones have emerged as a road safety problem. Research [1] has shown that the reaction time of drivers increases by 0.5 to 1.5 seconds when they are talking on handheld phones, and drivers have difficulty maintaining the correct positions in their lanes, maintaining appropriate speeds and judging and accepting safe gaps in traffic. Some evidence indicates that drivers who use hand-held phones face a risk of crash four times higher than risk faced by other drivers, imperiling themselves and other road users [2]. Hands-free phones can also distract drivers, but the current evidence suggests that hand-held phones pose a greater problem [3]. Many different studies have shown that when drivers use a cell phone while driving increases the accident risk [4], This risk also extends to pedestrians [5]. For example, it is estimated that mobile-phone use for one hour a month increases accident risk by 400–900\%. Other studies show that a high percentage of accidents among youngsters are due to mobile phone use [6]. The increased accident risk is due to the fact that drivers using the phone are distracted from their main task, resulting in slower reaction time which leads to accidents.

When an auto crash occurs suddenly, the reaction of the emergency services now becomes a race between life and death. Today, wireless innovation has tilted the odds in favor of success like never before. Before, the people in the emergency services had little more to rely upon than raw courage. Now the world of wireless has inspired an entirely new way of managing and minimizing the death rate due to auto crash.

The scene of a fatal accident is always a theater where man and technology face the ultimate test. Whether the emergency is fire, earthquake or flood, relief or needed medical attention in this case, the stakes are always high. Indeed, wireless communications has become extremely important in emergency response. Obviously the most important tool in any situation is people. But better information with the aid of machine-to-machine (M2M) network means better decision making and that means technology is helping to save property and lives.

Accident Alert System (AAS) is quite a novel research area, on the 15th of January, 2007, the European Commission (EC) proposed an auto crash alert system called the e-call. The e-call system is intended to automatically initiate an emergency call to 112 from the vehicle and transmits satellite positioning data to the operator in case of a road accident. It has been estimated by a new research report from the analyst firm; Berg Insight that e-call could save thousands of live and that it's long term saving would be in the range of €5-10 billion, whereas the long term cost is projected at €4 billion[11].

Vehicle tracking systems have been deployed by private companies to clients that desire such services across the globe and it's recent surge in Africa and most especially in Nigeria is not a news[8],[10]. However, Emergency Alert System (EAS) is a novel research and

development area even in advanced countries [9]. Some experiences of the development in this interesting life saving research area are illustrated as follows:

There are variants of location based systems with various advantages and disadvantages.
E-OTD [12] uses a mobile signal from base-station to call special chip and then to fixed location known to operators. This is triangulated among three points, it has an accuracy of 5 to 50m but it involves high network investment cost for the operator and also requires new handset. GPS method uses satellite sent positioning signal to handsets equipped with GPS chip, which calculates it's own location to approximately 1-10m. It has a high accuracy but could be used only outdoor. Another good example of emergency alert system is the Trako System from India[7], It uses the GPS coupled with geo-referenced GIS (Geographical Information System) maps to communicate real-time information to the control station. A handset provided allows the driver to speak to the control station anytime and send an alert in case of emergency through the hotline buttons provided on it. The trip reports and maps generated by the system can also be conveniently viewed through a web interface.

3. Existing System
The existing system provides only alarming and buzzer system in car which gives attention to the nearby people. The existing system works only if car have crash or roll over at low intensity and works at moving car at changing velocity.

3.1. Limitation

1. At driver seat mobile phone totally of because of jammer.
2. Jammer is effect on other users mobile, which are in jammer radiation area.
3. In case of GSM, SIM cards, individual authentication keys of the users are stored in the authentication centers. Any person with the rights and qualifications to access to authentication center can manipulate these to impersonate that mobile user.
4. Existing systems are in two different project.
5. Cost of existing system is large.

4. Proposed System

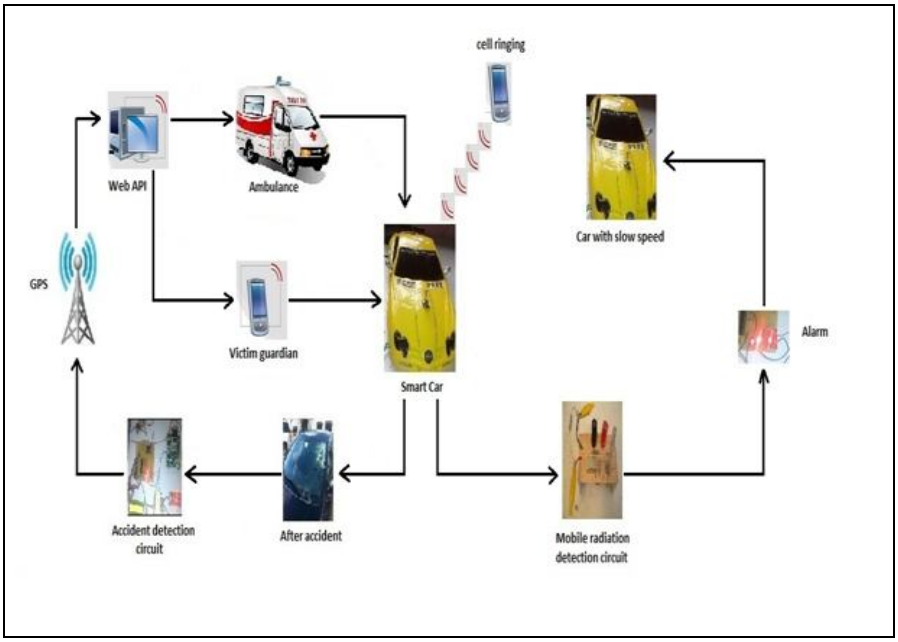

Figure 2: Peopsed System Architecture

Avoid the car accident due to use of mobile phones by decreasing car speed. Prevent the life of humans after accident. By informing to emergency service center & victim guardians.

4.1. Cell Phone Accident Avoidance System While Driving
Innumerable road accidents and deaths take place due to distracted driving. Large number of studies shows mobile phone usage while driving was the major reason for distracted driving. With the aim of preventing road accidents due to mobile phone usage while driving, we propose a highly efficient automatic computerized system for early detection of incoming or outgoing call, an mobile radiation detection circuit used for detecting when the driver uses mobile phone and one shaft are use for controlling a speed of car when driver use mobile phone at time of driving. Speed of car is totally controlled by system if driver use mobile at driving time.

4.2. Automatic Vehicle Accident Detection and Messaging System Using GPS and GSM modems

This paper describes about the AUTOMATIC VEHICLE ACCI-DENT DETECTION AND MESSAGING SYSTEM using GPS and GSM technologies. We are using computerized system for this. When accident is happened the system is switched on, The GPS receives the location of the vehicle that met with an accident and gives the information back. This information will be sent to victim guardians and emergency service center through a message. This message will be received using GSM modem present in the circuit.

5. Conclusion

We develop a Smart Car System, It useful for economic car used by ordinary peoples. This system prevents the car accidents because of the use mobile phones by controlling speed of car. It provides life saving for people by informing victim guardians and emergency service center. This system is possible to use in a normal cars.

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7. References

1. Alm H, Nilsson L. Changes in driver behaviour as a function of handsfree mobile phones: a simulator study. Accident Analysis and Prevention, 26:441–451.
2. Redelmeier DA, Tibshirani RJ. Association between cellular-telephone calls and motor vehicle collisions. New England Journal of Medicine, 336:453–458.
3. The risk of using a mobile phone while driving. Birmingham, Royal Society for the Prevention of Accidents.
4. Walsh, S.P., White, K.M., Hyde, M.K., Watson, B., 2008. Dialling and driving: factors influencing intentions to use a mobile phone while driving. Accident Analysis \& Prevention 40, 1893–1900.
5. Loeb, P.D., Clarke, W.A., 2009. The cell phone effect on pedestrian fatalities. Transportation Research Part E: Logistics 45, 284–290.
6. Neyensa, D.M., Boyle, L.N., 2007. The effect of distractions on the crash types of teenage drivers. Accident Analysis \& Prevention 39, 206–212.
7. Jeganathan C., Sengupta, T, “Utilization of Location Based Services for the Benefit of Visually Handicapped People”, Proceedings of Map India, 2004, New Delhi.
8. Martin Backstrom, Andreas Hardrup, Tomas Nylander, Jari Vikberg and Peter Ohman, “Mobile @ Home-GSM Services over Wireless LAN”, Ericsson Review, No.2, 2005.
9. Ericsson White Paper ,”Communication and Information Services for National Security and Public Safety”, Ericsson Microwave System AB [Online],\\ Available: http://www.ericsson.com/products/white_papers_pdf/2952_nsps_a.pdf
10. Agrawal S.C., Agrawal, “Location Based Services”, Tata Consultancy Services (TCS) [Online], \\Available: http://www.tcs.com
11. Application Notes[Online], Available: http://www.maxim-ic.com/an1490
12. E-OTD, “Enhanced Observed Time Difference”[Online],\\ Available: http://www.phonescoop.com/glossary/term.php?gid=188