

SURVEY ON CONSTRUCTION SITE SAFETY USING ALERTING SYSTEM

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ABSTRACT

After agriculture, the construction industry is one of the main jobs in India, and it is rapidly developing. The safety of workers is more important than anything else. Because most people originate from rural areas, a lack of information about their safety, as well as a lack of training, are key causes of accidents. As the construction sector expands, effective safety and emergency management are required. Emergency alert systems are critical for reducing loss during emergencies. In the construction business, emergency alarm systems range from the simple air horn to the more advanced remote and app-based systems. A smart phone can be efficiently used for personal security or various other protection. This study attempts to improve construction safety by identifying a location and sending a message with a single click on this app. This application can be activated by a single click, whenever the need arises. It identifies the location of a place through the GPS and sends a message comprising the location URL to the registered contacts to help the victim in a dangerous situation.

Keywords: Safety, Construction Site, Alert Messages, Android App, Workers, Global Positioning System (GPS).

I. INTRODUCTION

India is a developing country, and most developments are going on in the construction industry. India has maximum manpower to utilize as an option for machine work to promote employment. India's construction sector is the second largest employment generator, and as of 2023, 71 million of the workforce is estimated to be employed in the construction sector, but 81 percent of this workforce is unskilled and only 19 percent are skilled employees. Human life and safety are more important than anything, so systematic safety and emergency management are required at construction sites. Not only the construction industry but also the government should take active participation in this process. As per National safety council (NSC), till day many construction companies do not have safety and emergency department. The responsibility is just given to individuals who do not possess proper knowledge and experience in this field. Completing a successful construction project today does not only include providing a high-quality project on time and budget but also includes providing a safe and healthy working environment for all workers on and offsite. The safety record of construction industry is always poor. In fact, the 2018 Census of Fatal Occupational Injuries Summary in 2018 reported that over 1,000 construction workers died on the job that year. That's equivalent to around 19 workers every single week going to work and then not returning home. Sometimes, though there are safety and emergency provisions made, implementation of these provisions is not found, which can prevent accidents. This research aims to improve construction safety using an emergency alert system through which a single click on this app identifies the location of a place through the Global Positioning System (GPS) and sends a message comprising the location URL to the registered contacts to help the victim in a dangerous situation. It is a free of cost service available to every individual. This application can be activated by a single click, whenever the need arises. In order to track the movement of the person, Google maps for mapping the location is used and sent on the mobile phone. This system is a low-cost service which is wireless data communication system.



II. PROPOSED METHODOLOGY

In today's world, people using smart phones have increased rapidly and hence, a smart phone can be used efficiently for personal security or various other protection purposes. The mobile phone technology has enabled us to communicate across the world. This application is designed to help the workers, who surprisingly fall into an emergency situation and needs an instant communication, it can be activated by a single click, whenever need arises. This application can be very useful as it offers many advanced features as compared to other system available currently. The Global Positioning System (GPS) is the main key of this application. The location will be tracked with the help of GPS system, for using this application one must have GPS enabled to send the location to the registered contacts. On a single click on this app identifies the location of a place through the GPS and sends a message containing the location URL to the registered contacts to help the victim in a risky situation. In order to track the movement of the person, Google maps for mapping the location is used and sent on the mobile phone. This is a safety security application having multiple features such as GPS tracking, text indicating current location of the victim along with the battery level of the phone.



Features:

1. Your loved ones and close friends can AUTOMATICALLY receive a text message.
2. Your location (with map link).
3. The battery level of victim's phone.
4. Exact time of the alert triggered.

III. OBJECTIVES OF THE STUDY

To investigate the significance of worker safety on construction sites. The objectives of the study are to enhance the efficiency and effectiveness of emergency alert systems for construction sites, ultimately leading to improved safety, reduced risks, and improved protection of lives in emergency situations.

IV. ADVANTAGES

1. App will help the victim, so that help can be attained to them at earliest.
2. User interface is easy.
3. Free of cost.
4. Cost of GPS devices are reduced.
5. Easy installation and setup.
6. Enhanced worker safety awareness and confidence.

V. LIMITATIONS

1. We require internet for accessing this application.
2. We require android mobile phones.

VI. FUTURE SCOPE

The future scope of emergency alert systems holds significant promise as advancements in technology continue to reshape how we communicate and respond to emergencies. The rapid growth of cutting-edge technologies like 5G networks, IoT devices, and AI-driven algorithms, emergency alert systems are poised for

transformation. These systems will use those technologies to deliver lightning quick alerts with more reliability, reaching even the most remote areas; providing emergency alert messages in case of zero balance situation; implementing the application without the use of internet. Robotics will be critical in improving alert accuracy and importance by examining real-time data from multiple sources to tailor alerts to specific events and locations. The future of emergency alert systems is one of increasing effectiveness, speed, and adaptability, which will ultimately improve our collective ability to respond to and mitigate all types of emergencies.



VII. CONCLUSION

The Emergency Alert System project solves a key demand in the mechanical industry by assuring worker safety. By implementing real-time communication and location tracking, the system has the potential to significantly improve emergency response times and overall workplace safety. One click on this app can send a message containing the location URL to the registered contacts to help the victim. This project not only safeguards workers but also contributes to a safer and more efficient work environment.



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