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Project report
on

HAM RADIO BASED DIGITALLY SECURED TRANSCEIVER FOR ACCIDENT LOCATION IDENTIFICATION

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ABSTRACT

The rapid increase in population has also led to an increase in the usage of vehicles. Therefore the number of accidents are also increasing. Prevention of accidents is one line of work but also it is necessary to implement effective emergency services in the time of an accident. This project focuses on the availing of emergency services in the case of an accident. If the accident occurs on a highway or any well traveled road pedestrians are there to help the injured or inform emergency services like police or ambulance. But in hilly regions or in the remote places no one might be available. In such an event, the delay for arrival of emergency services may cause loss of life. Also there are cases of valuables being stolen at the accident spots. Hence a new system may be implemented to automatically detect an accident and call for emergency services. Here accident detection and emergency beacon activation are taken up as separate parts of this system. In this project a transceiver system is being developed for the digitally secured emergency beacon intimation via HAM frequencies.

The intent is to develop a HAM based digitally secured transceiver that transmits encrypted GPS based location data which consists of data in GPGLL form using HAM Radio emergency frequency band to a receiver placed in police stations or help centers. This transmission will be digitally secured using an AES based encryption algorithm to avoid misuse of the location data. The data i.e. co-ordinates of a position are received by the GPS receiver and that are encrypted using MSP430. The encrypted data is transmitted through the HAM Radio frequency. At the receiver side the data is recovered through AES based decryption algorithm. The same is displayed to intimate the emergency services regarding the incident. The decrypted information is the information that is extracted from GPS receiver.