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Real-Time Communication and Location Tracking System for Vehicular Emergency

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ABSTRACT

In IoT vision, each and every 'thing' has the ability of talking to each other that brings the idea of Internet of Everything in reality. Numerous IoT services can make our daily life easier, smarter, and even safer. Using IoT in designing some special services can make a lifesaver system. In this paper, we have presented an IoT enabled approach that can provide emergency communication and location tracking services in a remote car that meets an unfortunate accident or any other emergency situation. Immediately after an accident or an emergency, the system either starts automatically or may be triggered manually. Depending upon type of emergency (police and security, fire and rescue, medical, or civil) it initiates communication and shares critical information e.g. location information, a set of relevant images taken from prefixed angles etc.In this paper, we have used the concept of a smart city to provide a life savior system for a smart vehicle in any kind of emergency situation occurred on road. Most of the modern cars are well equipped with several sensors, mechanical devices, software, embedded hardware etc. to pre-detect collisions or crashes and avoid them. 'Safety and security' is one of the most important criteria of a vehicle. These kinds of modern safety systems are very much useful and reliable for car drivers as well as passengers on road. But those safety systems have one major limitation. These systems can only be used to avoid crashes. But unfortunately, if the system fails to avoid an accident or there is any other emergency situation other than accident, those systems have no provision to deal with them.

I. INTRODUCTION

In this paper, we have introduced an emergency communication and location tracking system for any type of vehicular emergency. This system aims to minimize the damages after a vehicle meets any unfortunate situation like an accident by sending automatic message to the nearest hospital and police station. It is also helpful for other emergency situations such as medical emergency, criminal problem, civil emergency and also for mechanical problem in the car. When a car meets any emergency situation the system starts automatically or manually according to the type of the situation and sends emergency message to the control room. The main problem of this kind of system is the accidents can't be detected in absence of a camera. Most of these kinds of systems are dependent on the users' smart phones and are not always automated. Some of them are entirely proprietary product for their own cars and on emergency; they can connect to their call centres only. There is no provision for those solutions to contact nearest police or hospitals directly for emergencies that causes delay in rescue mission.

II.LITERATURE SERVEY

An Intelligent IOT Enabled Real Time Communication for Vehicular Emergency.
Author- Mrs.V.Saraswathi, R.Karthick
Year -2020
Internet of Things is a prominent term in the technology sector now a days. IOT is the interaction among set of devices connected through a internetwork. IOT makes the human life easy and can also be used for providing assistance during emergency situations faced by the living beings. A system which can provide assistance during vehicular emergencies has been developed. It can automatically detect an accident and can be triggered manually for other vehicular emergencies such as medical emergency, mechanical problems and report it to the rescue centres. Location Tracking is done with the help of GPS and accident is detected using vibration sensor. Node MCU is used for communicating with the server. The proposed paradigm is designed with Arduino UNO R3.

Real-Time Communication and Location Tracking System for Vehicular Emergency using IOT Based Smart System
Author-G. Naganandhini1, K. Sowndarya1, K. RiniCatherine1, M. Anitha
Year-2018

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Internet of Things is an emerging technology having the ability to change the way we live. In IoT vision, each and every 'thing' has the ability of talking to each other that brings the idea of Internet of Everything in reality. Numerous IoT services can make our daily life easier, smarter, and even safer. Using IoT in designing some special services can make a lifesaver system. In this paper, we have presented an IoT enabled approach that can provide emergency communication and location tracking services in a remote car that meets an unfortunate accident or any other emergency situation. Immediately after an accident or an emergency, the system either starts automatically or may be triggered manually. Depending upon type of emergency (police and security, fire and rescue, medical, or civil) it initiates communication and shares critical information e.g. location information, a set of relevant images taken from prefixed angles etc. with appropriate server / authority.

UNIFIED AUTOMOTIVE LOCATION TRACKING USING ANDROID THINGS (IOT)
Author- V. V. S. SaiDasaradha, P. Sasikumar

I. YEAR-2018

Safer commute and navigation have been the main concerns in this field. Proper Maintenance and Tracking of vehicles is much needed. Internet of Things has been a significant factor in bringing innovations to the transportation field. Traditional tracking of vehicles includes sending the data through GSM with no standard Architecture. Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) communication cannot be implemented through these traditional methods. Vehicular networks need a typical architecture in-order to communicate with each other.

ACCIDENT DETECTION USING AUTOMOTIVE SMART BLACK- BOX BASED
YEAR-2010 AUTHOR-P. JOSEPHINSHERMILA

Autonomous vehicles want reliable and strong sensor suites and alert systems. This paper discusses the composition and performance of a sophisticated monitoring and alert system for automobile vehicle parameters. The number of automobiles has also grown quickly to meet the enormous population. Additionally, this resulted in an increase in accidents. The accident prevention strategies now in use are all static and dated. Additionally, there is no reliable accident detection system.

III.EXISTING SYSTEM

Internet of Things and Smart City are emerging research topics recent days in Internet oriented technologies grabbing the attention of researchers. The exponential growth of this field is taking us rapidly towards a smart planet, well-equipped with smart objects everywhere. Not only in theory but Padova smart city has actually proved that a fully IoT enabled (smart) city can be achieved in reality. Some of the researchers have also studied on traffic and road security in a smart city. In authors have proposed a GPS based location tracking system able to collect location information and send it through SMS. But the main problem of this system is, it is not a fully automated system. The user has to start the system manually. In the authors have discussed the impact of Intelligent Transportation System (ITS) for future intelligent vehicles.

DISADVANTAGES OF EXISTING SYSTEM

1. This is the most important emergency type for a vehicle on road.
2. Sometime it happens that a passenger or the driver of a car suddenly becomes sick and is unable to go to the hospital or find any hospital nearby.
3. If a vehicle meets some mechanical problems, nearest car workshop is informed

IV.PROPOSED SYSTEM

In this paper, we have introduced an emergency communication and location tracking system for any type of vehicular emergency. This system aims to minimize the damages after a vehicle meets any unfortunate situation like an accident by sending automatic message to the nearest hospital and police station. It is also helpful for other emergency situations such as medical emergency, criminal problem, civil emergency and also for mechanical problem in the car. When a car meets any emergency situation the system starts automatically or manually according to the type of the situation and sends emergency message to the control room. The control room then forwards the message to the nearest rescue center (hospital, police station, govt. office, car workshop) according to the emergency type and situation.

ADVANTAGES OF PROPOSED SYSTEM

1. It has a wide verity of emergency situations that could occur on road.
2. There are some cameras in the car in different angles that can send pictures automatically to the control room to describe the condition more specifically.

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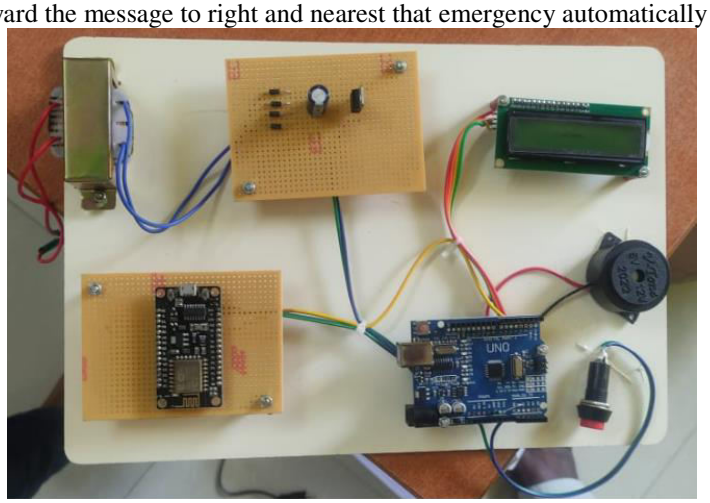
3. The control room can forward the message to right and nearest that emergency automatically o manually.



V.CONCLUSION

In this proposed vehicle safety system various sensors are used for obtaining various parameters. The sensors used here are the crash sensor, temperature sensor, and gas sensor. The accident is detected through the crash sensor. The temperature sensor and gas sensor are mounted inside the vehicle to find abnormalities. GPS is also mounted inside the vehicle. Based on certain critical parameters such as: measuring attributes of the moving vehicle, sensors and actuators used for data obtaining in tracking devices, data transferring methods fortransmission, networks and protocols utilized forcommunication, utilized stock for data storage, programming languages or systems, and algorithms utilized for raw data analysis.

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