

The Smart AMBULANCE Service

Shubham Patil, Vikram Rajiwade

Department of Computer Engineering, Shree Ramchandra College of Engineering, Lonikand. Savitribai Phule
Pune University, Maharashtra, India

ABSTRACT

India is a second most populous country in the world. So, in day to day use people uses vehicles for their daily purpose and it causes heavy traffic on the roads. Hence it is very time consuming and difficult for the ambulances to avoid the traffic and reach to the hospital as early as possible. We developed a Smart Ambulance Service that alerts to traffic police who is present on the same route from where the Ambulance is passing. It notifies the traffic police when Ambulance is 1 km away from him.

Keywords : Ambulance, Hospital, Map, Traffic control.

I. INTRODUCTION

Large peoples in India uses vehicles for their daily commute also bad road conditions in country causes the increase in traffic. The traffic mainly become large problem when the emergency vehicles like ambulance have to pass through this traffic. The time is most important factor in case of emergency situations.

To deal with this situation we have proposed The Smart Ambulance system which provides user to find the Ambulances which are nearer to their location. The “Smart Ambulance Service” provides the patients location to the ambulance driver.

When the ambulance picks the patients to reach the hospital. Our system also provides the nearest hospitals available to the user location. When the user selects the nearer hospital, it provides a route towards the hospital. The map is provided to ambulance driver. The traffic police will get notified when the ambulance is 1km away from him so he can clear the

traffic and help Ambulance to reach the hospital quickly.

In this system we provide the Google Map API to the user which is useful for finding the nearer ambulances and hospitals to the user location. Also provides the Map from the user location to the Hospital. Which is helpful to finding the sort route traffic update on the route to the ambulance driver.

Our application provided the live location tracking technology for the Ambulance driver to reach the user’s location and for the traffic police to know the how far the ambulance from his location to create a route in traffic for the Ambulance.

II. LITERATURE SURVEY

At the time of the medical emergency there should be the availability of the medical help to the patient as early as possible. Traffic is the biggest cause behind the delaying the emergency vehicles from delivering patient to the hospital.

In smart ambulance different sensors like heart sensor, blood pressure, ECG will be judged. In previous system when ambulance picks the patient, the ambulance has components such as heart rate controller, blood pressure controller, body temperature controller that continuously sends data to the hospitals database. So that the patient's health's vital parameters are managed directly by the hospital doctors. Due to this, doctors in the collaborated hospital can continuously monitor the patient's health.[1]

The time plays crucial role when the accident is happened. At that time, it is totally dependent upon the people available there but if the accident happens at the area where there are less people to help. For that a kit is developed that has to be installed in every vehicle. So that when the accident is happened to a vehicle it will send alarm to the control room with the location where accident is occurred and emergency contacts. The control room then redirects the ambulance to the accident's location. If the vehicle unit is damaged during the accident the passer-by can also contact to the control room.[2]

The device will have its own heart beat sensor, temperature sensor, blood pressure sensor and the data collected through these sensors will be sent to the microcontroller and then microcontroller will send this data to raspberry-pi which will connect to internet to internet or cloud. In the collaborated hospital the doctors will continuously monitor the patients' health condition. If the patient's condition is critical then hospital will allot ambulance to the patient location. The ambulance allotted will have the obstacle detection kit installed into it. The kit will have Arduino Uno, Ultrasonic sensor, buzzer, led, connecting wires, breadboard, etc. In case if the driver is not alert. If the obstacle comes in front of ambulance within some specified range the buzzer will blow. This will help ambulance to avoid accident.[3]

Sr no	Paper	Author	Methodology used	Limitations
1	Smart Ambulance System using IoT	Omkar Udawant, Nikhil Thombre	In smart ambulance different sensors like heart sensor, blood pressure, ECG will be judged.	Limited ability to accurately measure heart rate
2	Smart summoning of Ambulance during a vehicle accident.	Sivaraman Kartikeyan, Shreyas Srinivasan, J. Syed Ali	For smart summoning of ambulance during an emergency the components such as microcontroller, GPS module, GSM Module.	Multiple user uses same Bandwidth so face the prob of interfacing .
3	Monitoring patient's health with smart ambulance system using IOT.	Himadri Nath Saha, Maitrayee Saha, Neha Firdaush Raun	It will sense the body condition and send the data to the collaborated hospitals website.	Not useful for small hospitals and Village doctors.

III. PROBLEM DEFINATION

In India the medical response is not fast as it has to be. And another problem was as compare to the other countries in India due to heavy traffic the emergency medical vehicles are not reach to the patient's location quickly. The big problem is that to reach the patients location the ambulance has to face the heavy traffic on road. Because of that the emergency

vehicles are not getting reach on time to the patient location and it was not good for the patients' health.

IV. EXISTING SYSTEM

The existing system are work on the emergency medical number 108. If any medical emergency the emergency number they're for the use. The working of the existing system is to call on the emergency number then it will connect to the customer care the care executive was answer the call then take the whole details regarding to the emergency and store to the database.

After that the care executive find the nearest ambulance to the location of the emergency spot, then call the ambulance and tell to the location where need of medical help and also tell the nearer hospital address to the driver of ambulance.

The Ambulance was going to the location where the executive tells but it takes time to reach the exact location because the exact location was not known to the Ambulance driver.

The Another thing is that the traffic police was no idea related to the ambulance was come or not. Because there is no system to get alert or notified to the traffic police who is present on the same route of Ambulance. Hence the Ambulance was facing the traffic issue. If the traffic police were known about the coming of Ambulance on route then he tries to make a route in a traffic for the Ambulance. That was helpful to reach the hospital quickly.

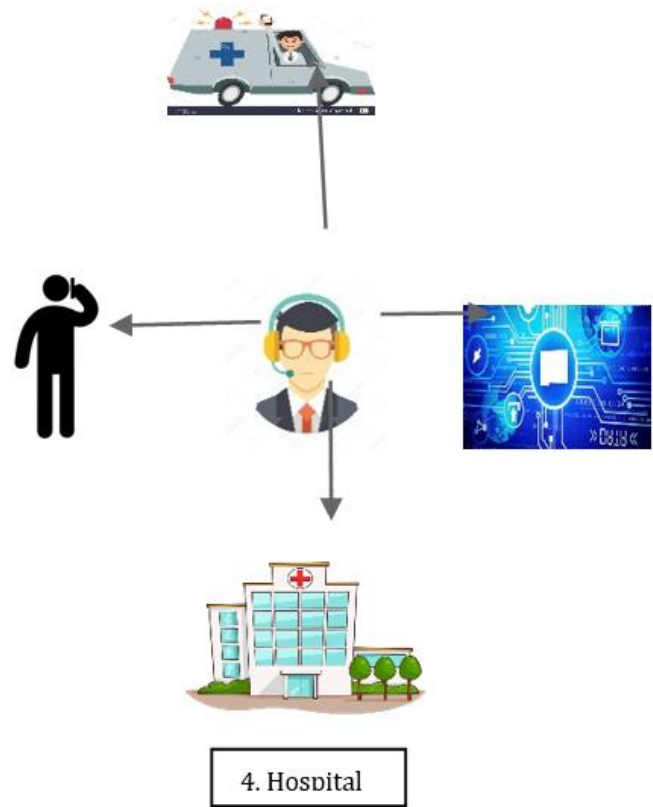


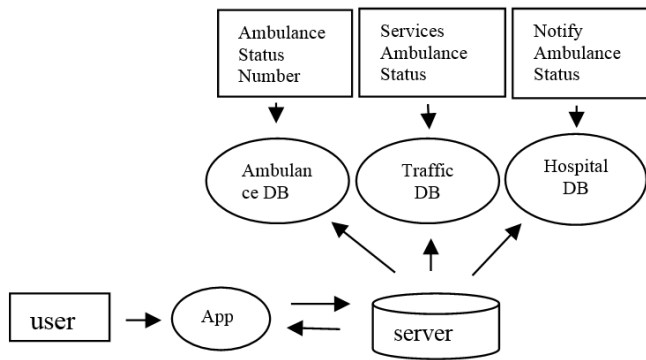
Fig 1.Existing System

V. PROPOSED SYSTEM

In our system we are using the RFID for the purpose to solve the problem of the traffic. It works such that when the ambulance is passing through the heavy traffic. There will be the RFID tag used such that, when the ambulance is 100 meters away from the signal. The RFID detector placed near traffic signal will detect the ambulance and the signal will be switched such that the ambulance will pass easily.

We have creating the mobile app that will save the patients location such that ambulance will reach the patient easily. The police will also get the information to about the coming ambulance so that they can help ambulance reach the hospital easily.

The hospital will also get the information about the patient through the fingerprint scanner reader patients pre-health data and will understand the treatment.



Architecture Diagram

In this the three databases are used to store the data regarding to the application. Every database stores the different data like ambulance database stores the Ambulance related data, traffic database stores the traffic police data, Hospital database stores the hospitals related data that selected by user.

VI.CONCLUSION

In this system we proposed an idea for saving a patient’s life in a faster way.

With this application, the ambulance can reach the patient location by the live location provided to the ambulance driver by application.

An alert can be sent to traffic police so that it reduces the time complexity and help to provide faster transportation services for Ambulance.

VII. REFERENCES

[1]. Smart Summoning of Ambulance during a Vehicle Accident 1. Sivaraman Karthikeyan, 2. Shreyas Ramachandran Srinivasan, 3. J. Syed Ali, 4. A. K. Veeraghavan Smart Ambulance Approach Alarm System Using Smartphone

[2]. Toru KOBAYASHI, Fukuyoshi KIMURA, and Kenichi ARAI Division of Electrical Engineering and Computer Science Graduate

School of Engineering, Nagasaki University Nagasaki, Japan

[3]. Monitoring Patient’s Health with Smart Ambulance system using Internet of Things (IOT) Himadri Nath Saha. Department of Computer Science & Engineering Institute of Engineering and Management Kolkata, India himadri@iemcal.com

Cite this article as :

Shubham Patil, Vikram Rajiwade, "The Smart AMBULANCE Service", International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), Online ISSN : 2394-4099, Print ISSN : 2395-1990, Volume 7 Issue 3, pp. 70-73, May-June 2020. Available at doi : <https://doi.org/10.32628/IJSRSET207321> Journal URL : <http://ijsrset.com/IJSRSET207321>