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Patient Health Care & Ambulance Tracking System

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***Abstract:** In the Proposed system presents design of a monitoring system for emergency patient transportation. The system will be useful for monitoring ambulance location using Google map and GPS as the Numbers of road accidents in India are the highest across the world. To prevent this, Using advance wireless technology of GPS, it is possible to provide medical facility to accident victim within short period of time. Continuous monitoring of ambulance location and status of patient during the critical hour of patient transportation helps to improve medical care. One of the issues during transportation of patient is traffic related problems. It is therefore necessary to have a fast, economical and efficient traffic control. It can display location of ambulance and status of heart beat rate and temperature of patient. After receiving SMS hospital can prepare their staff for proper treatment of coming patient. Proposed system track the way of ambulance coming and it makes all the signals green on the same track after sensing the ambulance. Proposed system also stores the patient's previous prescription information that will help to get better treatment. Patient's data can be fetched by using bio-metric device which will be available in ambulance vehicles.*

***Keywords:** Body Area Networks, Health-Monitoring, Wearable Systems, Biometric sensor*

I. INTRODUCTION

The main concept behind the proposed system is to provide a smooth own for the ambulance to reach the hospitals in time and thereby minimizing the delay caused by traffic congestion. The ARDIUNO system is used to alter the traffic lights upon its arrival at traffic light junction which would save a lives at critical time. To avoid unnecessary traffic signal changes. In the current situation itself, transportation of a patient to hospital in emergency conditions seems quite simple but in actual it is very difficult during peak hours. Moreover, the situation is gets worse when emergency vehicles have to wait for other vehicles to give way at intersections with traffic signals. As the survey aye 95% of the heart attack cases can be treated, if the ambulance can reach the hospital at current time without stucking into the traffic. In future it may get even worse. In this cause Recovery action need to be taken immediately. So, for our over populated environment, there is a real need for this paper for the society to make easier day to day transportations. This paper will help to reduce blockage of emergency vehicles in traffic and helps to provide immediate recovery. Mobile app to authenticate emergency and non-emergency conditions of ambulance. GPS to track the nearest traffic signal post to the ambulance and to send the app data to that particular signal post. The main goal is sharing of information between patient and hospital. This information involves patient's medical data, current condition and the most important thing location of ambulance. When the patient or his career has exact idea when the ambulance is arriving, they can take proper action according to feedback received. Similarly if the hospital knows when the patient is arriving, they can prepare for it efficiently. The sensor is capable of sending ambulances location to a server, from where it can be accessed by the hospital and the patient. This is the core part of the proposed Ambulance Tracking System (ATS), which provides real time location updates of ambulance to the hospital and to the patient who has requested the ambulance. In addition to this, the system also provides the functionality of sharing patient's medical data with hospital, so they can take proper measures beforehand.

II. RELATED WORK

A. A Survey On Wearable Sensor-Based Systems For Health Monitoring And Prognosis

In this paper, The design and development of wearable biosensor systems for health monitoring has garnered lots of attention in the scientific community and the industry during the last years. Mainly motivated by increasing healthcare costs and propelled by recent technological advances in miniature biosensing devices, smart textiles, microelectronics, and wireless communications, the

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continuous advance of wearable sensor-based systems will potentially transform the future of healthcare by enabling proactive personal health management and ubiquitous monitoring of a patient's health condition. These systems can comprise various types of small physiological sensors, transmission modules and processing capabilities, and can thus facilitate low-cost wearable unobtrusive solutions for continuous all-day and any-place health, mental and activity status monitoring. This paper attempts to comprehensively review the current research and development on wearable biosensor systems for health monitoring. A variety of system implementations are compared in an approach to identify the technological shortcomings of the current state-of-the-art in wearable biosensor solutions. An emphasis is given to multi-parameter physiological sensing system designs, providing reliable vital signs measurements and incorporating real-time decision support for early detection of symptoms or context awareness. In order to evaluate the maturity level of the top current achievements in wearable health-monitoring systems, a set of significant features, that best describe the functionality and the characteristics of the systems, has been selected to derive a thorough study.

B. Health Monitoring And Management Using Internet Of- Things (Iot) Sensing With Cloud-Based Processing: Opportunities And Challenges

In this paper, Among the panoply of applications enabled by the Internet of Things (IoT), smart and connected health care is a particularly important one. Networked sensors, either worn on the body or embedded in our living environments, make possible the gathering of rich information indicative of our physical and mental health. Captured on a continual basis, aggregated, and effectively mined, such information can bring about a positive transformative change in the health care landscape. In particular, the availability of data at hitherto unimagined scales and temporal longitudes coupled with a new generation of intelligent processing algorithms can: (a) facilitate an evolution in the practice of medicine, from the current post facto diagnose-and treat reactive paradigm, to a proactive framework for prognosis of diseases at an incipient stage, coupled with prevention, cure, and overall management of health instead of disease, (b) enable personalization of treatment and management options targeted particularly to the specific circumstances and needs of the individual, and (c) help reduce the cost of health care while simultaneously improving outcomes. In this paper, we highlight the opportunities and challenges for IoT in realizing this vision of the future of health care.

C. Internet-of-Things Security : Denial of Service Attacks

Internet of Things (IoT) is a network of sensors, actuators, mobile and wearable devices, simply things that have processing and communication modules and can connect to the Internet. In a few years time, billions of such things will start serving in many fields within the concept of IoT. Self configuration, autonomous device addition, Internet connection and resource limitation features of IoT causes it to be highly prone to the attacks. Denial of Service (DoS) attacks which have been targeting the communication networks for years, will be the most dangerous threats to IoT networks. This study aims to analyze and classify the DoS attacks that may target the IoT environments. In addition to this, the systems that try to detect and mitigate the DoS attacks to IoT will be evaluated.

D. Hybrid GPS-GSM Localization of Automobile Tracking System.

An integrated GPS-GSM system is proposed to track vehicles using Google Earth application. The remote module has a GPS mounted on the moving vehicle to identify its current position, and to be transferred by GSM with other parameters acquired by the automobile's data port as an SMS to a recipient station. The received GPS coordinates are filtered using a Kalman filter to enhance the accuracy of measured position. After data processing, Google Earth application is used to view the current location and status of each vehicle. This goal of this system is to manage eet, police automobiles distribution and car theft cautions.

E. Smart Real-Time Healthcare Monitoring and Tracking System using GSM/GPS Technologies.

Health monitoring systems have rapidly evolved recently, and smart systems have been proposed to monitor patient current health conditions, in our proposed and implemented system, we focus on monitoring the patient's blood pressure, and his body temperature. Based on last decade statistics of medical records, death rates due to hypertensive heart disease, shows that the blood pressure is a crucial risk factor for atherosclerosis and ischemic heart diseases; thus, preventive measures should be taken against high blood pressure which provide the ability to track, trace and save patient's life at appropriate time is an essential need for mankind. The objective of this work is providing an effective application for Real Time Health Monitoring and Tracking. The system will track, trace, monitor patients and facilitate taking care of their health; so efficient medical services could be provided at appropriate time.

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III. SYSTEM ARCHITECTURE

The system consists of an end-to-end smart health application that can be building up from two functional building blocks. Main function of the first building block is to gather all sensory data that are related to the person's information by using the thumb impression, whereas the second block functions are to store, when the ambulance is going if in case the traffic is present than automatically signal goes blue so the ambulance can easily go to the hospital. In the proposed system it saves the patient's time and in some accident person body not identified in this situation by using thumb impression we can find out person information. The function working is illustrated as, when the patient's heartbeat rate changes badly, the Arduino which recorded all the patient's information, GSM shield to send an SMS message containing this information, patient ID and the location of the patient which has been taken via GPS shield, to his doctor's mobile phone, who -by his turn send an ambulance to the patient's location.

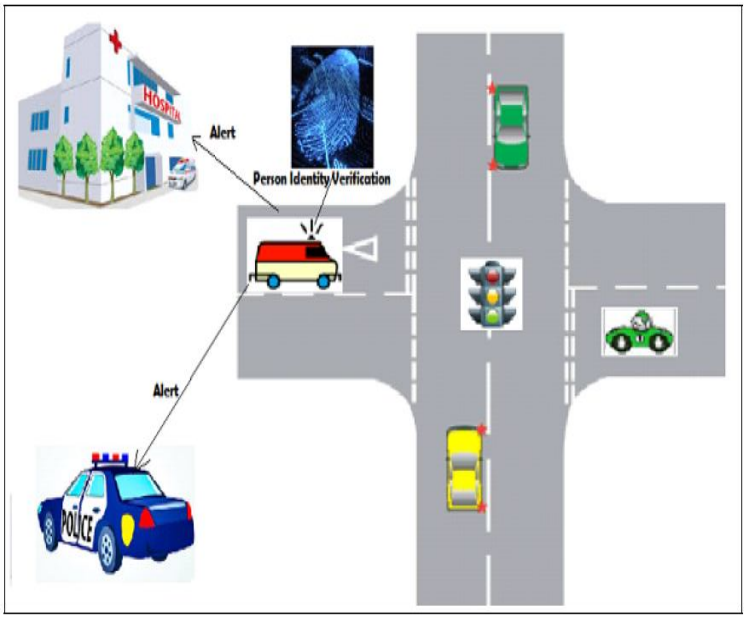


Fig1. System Architecture

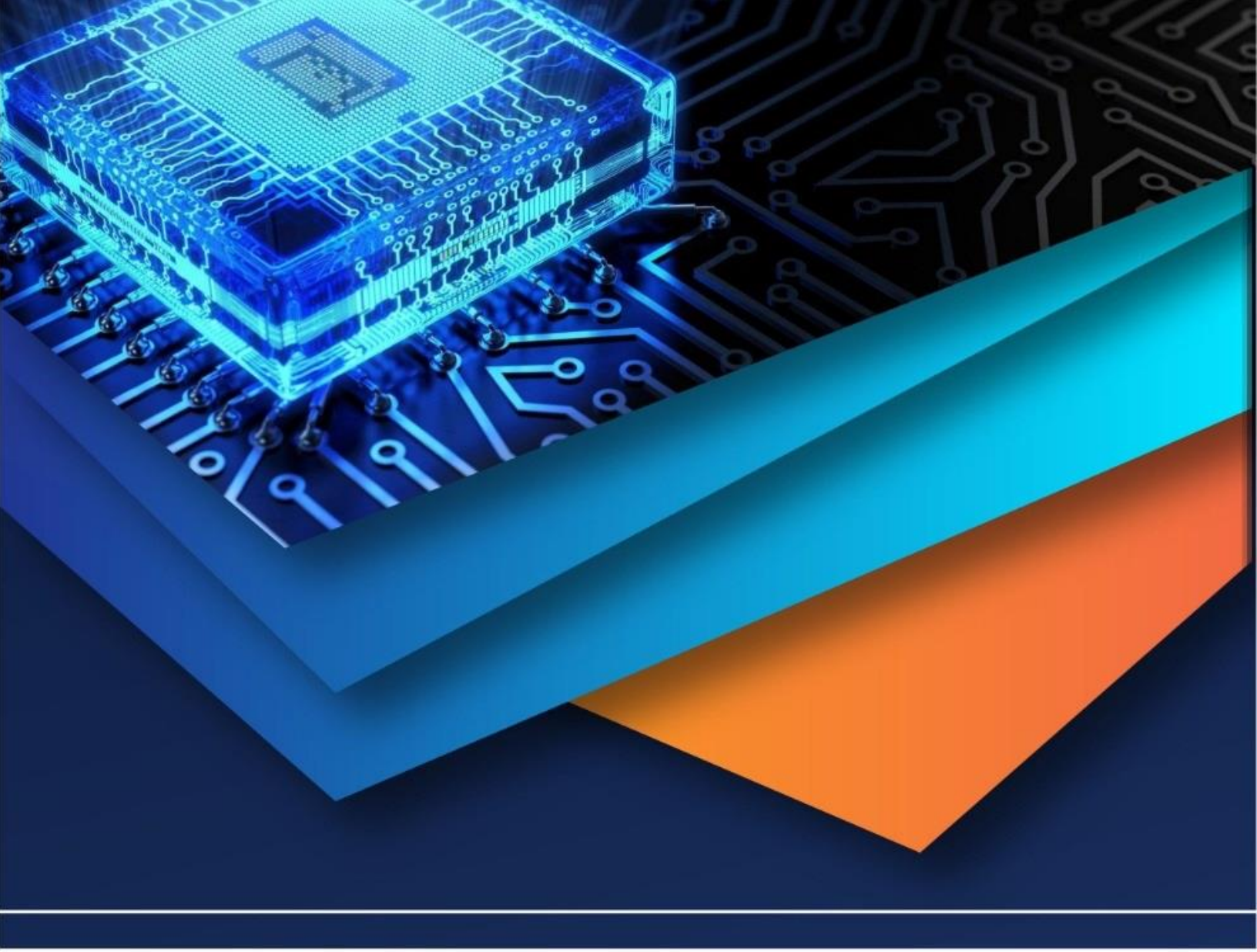
IV. CONCLUSION

In this paper, system will reduce accidents which often happen at the traffic signal intersections because other vehicles have to huddle to give way to the ambulance services. The proposed system is useful for critical patient information easily find out. It provides transportation unit information and as well as patient health information, which is useful in further emergency treatment for doctors. The Ambulance tracking system can help in saving many lives. It can also send current location using GPS system to the server database. The server in turn sends location and status information to the doctor.

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