Traffic Clearance System For Life Caution

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Abstract. Ambulances are utilized to save people’s lives in time. Emergency care can be administered only in the hospital if there are any complications in the traffic congestions. Because of poor facility in the ambulance, there is a possibility for patients to lose their life. Government of India has introduced a service for ambulances called 108. This 108 service is used to admit patients to the nearest hospital. It may take hours to clear the entire traffic and, in the meantime, the situation of the patient become worse. Suitable methodology is proposed for achieving the better results in safeguarding the public lives by increasing the transportation efficiency.

1. Introduction
Traffic congestion is the main problem that causes delay in ambulance arrival. With more vehicles, there is a delay in transportation and controlling the traffic in urban areas are increasing day by day. So, certain techniques are to be proposed to increase the transportation efficiency. Efficiency of the transportation can be safely improved by means of Intelligent transportation systems (ITS). For detecting the traffic accidents and other related issues, ITS technologies are being implemented in a quick manner. By employing this method, there is a freeways traffic via ITS simulator.

When an accident occurs in urban area traffic congestion become a severe issue. This may cause traffic jams and spread the same over a big tracts of an urban network. As a result, one has to investigate the evolution of traffic symptoms for the following traffic occurrences. Jamming of vehicles is happening due to Temporary of obstructions, permanent capacity constraint and stochastic fluctuation in the demand.

Several strategies had framed to control the traffic jams so as to facilitate the public comfort and security. This enhances the improvement in the transportation efficiency. This can be achieved by three ways. They are fixed-timed, traffic responsive and predictive control strategies.

Traffic jams in urban areas can be prevented by traffic clearance board using traffic diversion systems. Sign boards and notifications are displayed for the road users that they might not enter the traffic zones. Proposed work focus on two-to disperse incident based traffic issues. Fr preventing the accidents, warning and ban signals are highlighted for the public notice at every road intersections.
However, under emergency situations traffic light control strategies, road vehicles cannot follow the warning signal rules and guarantee a considerable percentage. Classification tree method (CTM) based approach is preferred to analyze the traffic congestion issues.

2. Proposed System

Proposed system uses RF due to its cheap price when compared to the price of ZIGBEE. The transmitter section uses Temperature Sensor, ECG sensor, Blood Pressure Sensor to monitor patient’s body conditions.

The various parameters are continuously transmitted to the server through IoT. The server is continuously monitored by the hospitals and necessary procedures are carried out to keep the necessary equipments required. Current status of the patient is monitored through the LCD display and the same is shown to the people in the ambulance. An RF transmitter continuously transmits a signal. The RF signal when received by the nearby signal it turns the signal from Red to Green allowing the ambulance to pass through. So this system enables a modern methodology to prevent the patients from traffic.

![Transmission unit](image1)

**Figure 1:** Transmission unit

![Reception unit](image2)

**Figure 2:** Reception unit

The power supply is taken under through Transformer which steps down the voltage from (0-230V) to (0-6V) where in bridge rectifier is connected to its secondary side using op-amp thus an output of peak voltage DC is acquired.
Fig 3: Block diagram of power supply

LM7805 series of constant potential IC regulators of voltage has vast applications. Some of the applications are to eliminate noise thus dealing with distribution problems which come under one point regulation, 1.5A of output current is delivered. This can be made immune to overload by limiting the internal current and shutting down the temperature. It can also be used in external components with the employment of constant potential regulators where it gives an output of adjustable voltages and current.

The ECG which is the abbreviation for electrocardiogram is nothing but a tool used to diagnose the functions of the heart. A special set of cells create the low amplitude bioelectrical signals causing heart beats. The electrical signals obtained or monitored from the heart are converted to numerical with the help of this tool. The data are not only recorded from the heart but also from the hand and other parts of the body that are detected of having pulses with electrodes according to the need. This configuration is perfect with noise of low intensity.

Sphygmomanometer is employed to investigate the pressure level of a patient. Since usual monitoring machines are cost effective to digital monitors, their usage is harder. Sometimes these, meters are referred as aneroid meters. The module setup includes a squeeze bulb to aerate the cuff and an arm cuff and a stethoscope. Gauge is used in addition to record the pressure level. Dial with a pointer displays the pressure level. If the pressure rises within the cuff the needle moves in a clockwise and falling pressure in an anticlockwise direction. The indicator in the dial marker reflects the pressure level. Person with poor hearing sense find more difficult to understand the level of heart pulsation through the stethoscope.

LM35 is the temperature sensor, calibrated in Kelvin, as the user do not want to subtract a large voltage to Centigrade. The output voltage of LM35 is proportional to the centigrade temperature. Such kind of sensor does not need any trimming or external calibration for accuracy.

Mostly Microcontrollers are used in automobiles and in many industrial applications as well. It become a central part of industrial robotics too and are usually used to control and execute simple instructions. Controllers do not require significant processing power and most commonly used Character based LCDs are based on Hitachi's HD44780 controller which is used for the display purposes.

2.1. ENCODER
The HT-640 IC encodes 12-bits of information and serially transmits this data on receipt of a Transmit Enable and a LOW signal on pin-14 /TE. Pin-17 the D_OUT pin of the HT-640 serially transmits whatever data is available on pins 10, 11, 12 and 13, or D0, D1, D2 and D3 to D7.

2.2. DECODER

N bits of address and data information are decoded using 212 series. These series are capable of decoding the information in an efficient manner. Two kind of decoders say HT12D and HT12F are used for the decoding purpose, HT12D is arranged to get four bit data and eight bit address. Likewise, HT12F decodes 12 address bit information. Decoder HT-12D will transmit the valid data to process the microcontroller in a better way. Controller will take the data bits for transmission from the data output pins.

2.3. RF RECEIVER

RF receiver has a sensitivity of 3uV and operates at 435.90MHz. TWS-434 receiver operates from 4.3 to 5.6 volts-DC, and has both linear and digital outputs. The DATA_OUT pins of RF Transmitter is connected to the DATA_IN pin and then the data is processed by the decoder. An electromagnetic field is created and it is send to an antenna and the radio frequency propagates through space. Radio Frequency of range 10-300 GHz are preferred for radio signal generation. Signals existing in other kind of sources are picked up by the wireless receiver. Transmitter module is only 1/3 the size of a standard postage stamp, and can easily placed inside a plastic enclosure. The transmitter (TWS-434) output is up to 8mW at 433.92MHz with a range of approximately 400 foot (open area) outdoors. Indoors, the range is approximately 200 foot. Module of the transmitter has a size which is one third of the postage stamp, where this gives an output of about 8mW at a frequency of 433.92Mz with the foot of 400 in open area and 200 in closed area.

RF transmitter TWS-434 can be made handy with the operation from 1.5 to 12A of DC which can accept both analog and digital inputs.

![Fig 5: TWS434 Transmitter](image)

3. Results & Discussions

Information signals are being received and transmitted from the ambulance through radio transmitter and receiver. The RF signal when received by the nearby signal it turns the signal from Red to Green allowing the ambulance to pass through. So this system enables a modern methodology to prevent the patients from traffic.
4. Conclusion
Complete assessment is made automated by means of IoT. This method enhances traffic and admission clearance process in the nation. Without being halted present traffic can help the ambulance to reach the hospital with lesser time consumption. The algorithm for implementing this process has been tested extensively causes less operating power and low cost. During the emergency situation the traffic signal automatically switches to green and allows the ambulance to pass through the road intersections, and via RF transmitter and receiver, data can be shared further. Remote traffic assistance is made from the control room by accessing the data received from the ambulance. This improves the traffic congestion in a short time delay.

This proposed paper represents an intelligent ambulance traffic control with Zigbee Technology. Ambulance will not wait anymore in a traffic signal. And also it is the way to easier to reach the hospital for quickly and save the patient’s life in time. By this project the life of the patient is saved. In future, this project will be enhanced by using automated approach for fast and accurate response

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