ABSTRACT :

Rescuing lives in emergency situations is important , but it is hard and difficult to overcome the rush hour situation in hot spot cities due to the lack of spaces and traffic. Since there are many existing ideas in the present world , yet the problem remains unsolved . Our motive is to increase the survival rate of the lives through “SMART SANITKA”. The Smart Sanitka refers to the smart ambulances which is a combination of several processes where the process gets started when the trigger gets triggered in the ambulance. By which we can inform the control room in order to change the traffic signals and monitor the availability in the hospital with the help of Neo 6m GPS ,GSM module and LoRa module. Death rate due to delay is the worst. So ‘Smart Sanitka’ will create a great impact in the present world. Though we don’t have separate lanes for ambulances in our country, we could able to clear the traffic accordingly through our project “SMART SANITKA”.

TECHNICAL FIELD :

Wireless technology and Internet of Things.

PREAMBLE OF INVENTION :

References :

1) 202131002090 " IOT BASED INTELLIGENT AMBULANCE TRACKING AND ROAD CLEARANCE SYSTEM" , CLASSIFICATION (IPC) H04L0029080000, G08G0001000000, A61G0003000000, G08G0001040000, G08G0001096800 , 19/02/2021 Published.

2) 201741029146 " INTELLIGENT ROAD/TRAFFIC MONITORING FOR AMBULANCE ALERT SYSTEM" , CLASSIFICATION (IPC)- G08G1/087, 25/08/2017 Published.

Objective of the invention:

The main objective of the invention is to provide a smart vehicle system for healthcare in order to reduce the death rate which occurs due to traffic and to equip the system with multiple features.

Brief description of the drawings:

Figure 1: Block diagram of Smart Sanitka .

Figure 2: Process flow of Smart Sanitka .

Components Required:

- Neo-6m-GPS with Arduino
- LoRa antenna
- LoRa sx1278 module
- LoRa receiver
- Arduino UNO
- LCD display
- GSM module
- Battery

DETAILED DESCRIPTION OF THE COMPONENTS :

NEO-6M-GPS :

Neo 6m GPS is a best GPS receiver with better navigation sensitivity and best accuracy which is kept in the ambulance and connected to the GSM SIM 900 .This help is to identify the ambulance's live location.

GSM Module :

GSM stands for Global System for Mobile communication which is also kept in the ambulance and connected to Neo-6m-GPS and small LCD display. It is used for sending and receiving SMS from the control room. In this system, we have used SIM 900 Module.

LoRa Module:

LoRa stands for long range. LoRa Sx1278 is placed in the control room. Through this module,we can communicate over a long distance with the minimal network which performs the process of alerting the hospital about the emergency case and we are also using Lora receiver which is connected with Arduino UNO which is placed in the hospital for the purpose of receiving the alert message. LoRa receiver is connected with the LCD display to display the

received emergency alert and also connected with the antenna for better performance and to reduce the malfunction of the peak voltage.

LCD:

LCD stands for Liquid Crystal Display which is connected to GSM sim900 in the ambulance to display the message of allocated hospital name and it is also used in the hospital to display the emergency alert by connecting the LoRa receiver with it.

ARDUINO UNO:

Arduino UNO is a micro controller programmed using Arduino IDE and to reads the inputs from the hardware components. Arduino is connected with the LoRa receiver in the hospital and interfacing with the GPS and GSM in the ambulance to read the inputs and outputs from the sensor and receiver.

BATTERY:

A battery is a combination of one or more Electro chemical cells. Here we are using the battery for providing the minimal electric voltage for the GPS sensor and the LoRa module.

Detailed description of the invention:

Smart Sanitka comprises of several process which gets started when the Trigger is the ambulance gets triggered in the emergency situation.The ‘Smart Sanitka’ starts sharing the live location as a SMS to the registered number in the control room with the help of Neo 6m GPS and GSM module present in the ambulance where the GSM module in the ambulance is interfaced with the Arduino and GPS. With the help of arduino,GSM and GPS we can share the live location as a SMS via the GSM sim 900 module which will deliver the SMS to the registered number in order to clear the traffic in a quicker way. Instead of informing the situation to the traffic police in the signal, we can inform the control room to change the signals accordingly from there because it is always monitored by the officers and we can get an immediate solution.

A small LCD display will be present in the ambulance which is used to display the information sent from the control room. The control room officer can check the medical availability with the help of the server and will give the return message of the allocated hospital name to the ambulance driver which gets displayed in the LCD display. The displayed

message will be received through the GSM module. The driver can follow the instructions given by the control room officers. From this we can reduce the pressurization of the driver for checking the availability in the nearest hospital under emergency situation.

Informing the nearest hospital about the emergency case will be done by the officer in the control room with the help of LoRa sx1278 which is connected to the Arduino and in the hospital the information which is sent from the control room will be received by the LoRa receiver connected to the Arduino and an antenna is present along with the LoRa and Arduino to prevent the malfunction of this device due to the peak current helps to receive the alert in the hospital.So that,the LoRa transmitter passes the emergency alert to the specific LoRa receiver.Where we can connect the specific LoRa receiver by Lorawan protocols by Radio head packet method .So that we can receive message by the lora receiver which will display the message in LCD display which is present in the hospital. So by using this LoRa we can communicate through the minimal network connection even in rural areas. so we were able to make the necessary arrangements in the hospital in advance to save a patient's life.

CLAIMS :

1.Smart Sanitka comprises Neo-6m-GPS with arduino, LoRa sx1278 module, LoRa antenna, LoRa receiver, Arduino UNO, LCD display, GSM module, Battery.

2.LoRa is present in this system which is used for communication purposes even in minimal network regions/areas.

3.An alert will be given to the hospital from the control room regarding the emergency with the help of LoRa sx1278.

4.The emergency situation will be notified to the control room by the ambulance driver when the trigger button gets triggered in the ambulance.

5.In order to make way for the ambulance, the traffic lights will get controlled by the control room when they get notified by the ambulance.

Figure 1:

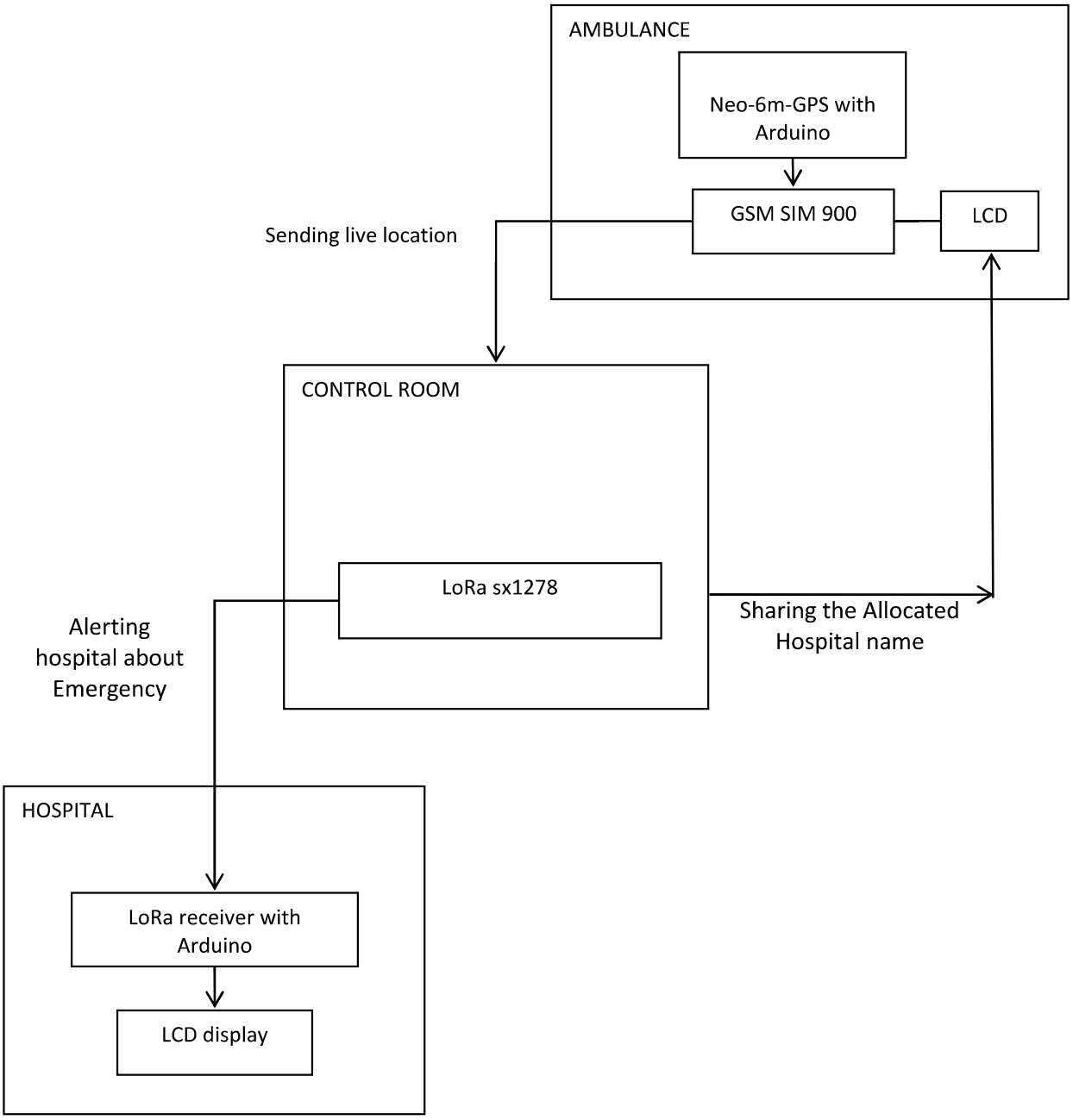
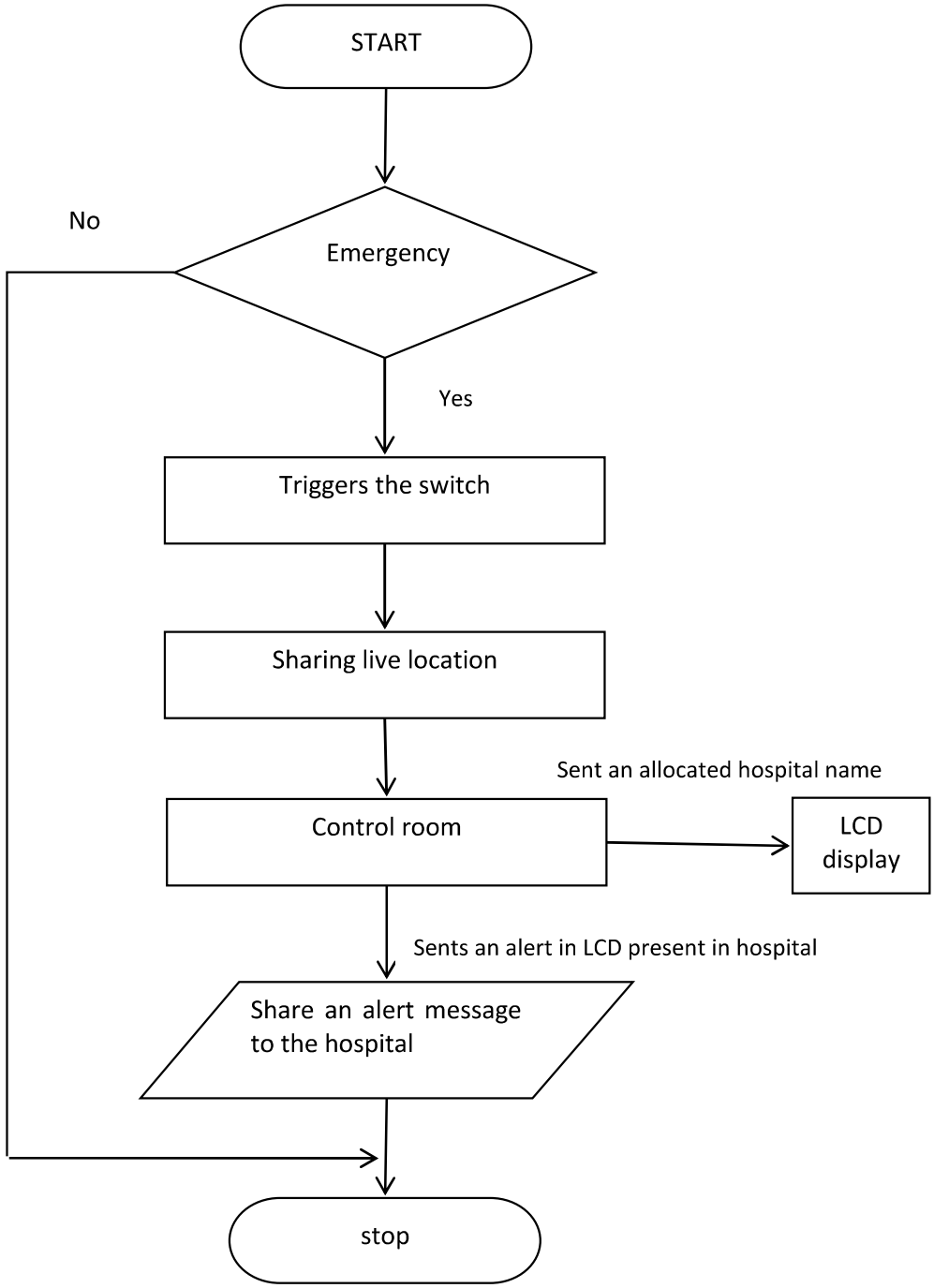

AMBULANCE
Neo-6m-GPS with Arduino
GSM SIM 900
LCD
Sending live location
CONTROL ROOM
LoRa sx1278
Sharing the Allocated Hospital name
Alerting hospital about Emergency
HOSPITAL
LoRa receiver with Arduino
LCD display

Figure 2:


START
Emergency
No
Yes
Triggers the switch
Sharing live location
Sent an allocated hospital name
Control room
LCD display
Sents an alert in LCD present in hospital
Share an alert message to the hospital
stop