**4.Functionalities**

**4.1 List of Modules and Functionalities**

* **Congestion Control:** While running a normal cycle if there are more vehicles in any lane then the lane opposite to lane with more vehicles green light will be High in order to control congestion. Consider a senior if the GREEN LED for 4th lane is High and there is more traffic density on the 1st lane. According to the normal cycle the 1st lane GREEN signal will be on but now due to high density on lane 1, the GREEN LED of 4th lane will be HIGH so that congestion on lane one will be cleared and then the normal cycle will work as before.
* **Emergency vehicle Detection:** When there is an Ambulance in lane, immediately the Green signal for Ambulance will be given so that Ambulance can be moved without interruption so patients can be reached to hospital as soon as possible.
* **Navigation Using Li-Fi:** Li-Fi technology, where streetlights transmit area maps to vehicles, aiding navigation without relying on mobile data or Wi-Fi. The received map is displayed on the vehicle's screen, offering a novel road navigation helps ambulance driver to take shortest path and avoid the traffic so reach the hospital as soon as possible. Li-Fi for highway navigation offers avenue for improving communication, navigation, and overall driving experience on highways. It has the potential to enhance safety, reduce congestion, and provide drivers with timely and relevant information.
* **Traffic rule violation monitoring system:** If the vehicle passed through a red-light signal, record the offence, notify it to the police control room, and send a message to the violator with necessary details such as date, time, location, image (if taken), and the penalty levied. Use of technology, sensors, and surveillance to monitor and detect violations of traffic rules. The system aims to enhance road safety, enforce traffic regulations, and contribute to the overall efficiency of traffic management**.**
* **Healthcare Monitoring :** Public transport operators consequently need to provide reliable services in order to minimize disruption events that can affect the vehicles and their drivers, such as breakdowns, accidents or illnesses. The project here described focuses on the type of events and approaches related with the vehicle drivers and the identification of both their performance profiles and health condition while in operation.

**Smart Flow**

**Smart Traffic Management**

**Emergency vehicle Detection**

**Congestion Control**

**Smart Flow**

**Healthcare monitoring system**

**Emergency vehicle Detection**

**Navigation Using Li-Fi**

**Traffic rule violation monitoring system**

**Congestion Control**