An Optimal Live Stream Monitoring For Tracking School Vehicles

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Abstract: **The Gaps navigation current location from the vehicle GPRS transmits the tracking information towards the server and also the GSM can be used for delivering alert message to vehicle's owner mobile. A sophisticated vehicle monitoring and tracking system according to Embedded Linux Board and android application was created and implemented for monitoring the college vehicle from the location A to location B at real-time. The suggested system will make use of recent technology that according to Embedded Linux board namely Raspberry Pi and Smartphone android application. The suggested system creates Gps navigation/GPRS/GSM SIM900A Module including all of the three things namely Gps navigation GPRS GSM. The suggested system would place within the vehicle whose position will be determined on the internet page and monitored at real-time. Within the suggested system, there's comparison between your current vehicle path and already specified path in to the file system of raspberry pi. The suggested system also required proper care of the traveler's safety by utilizing LPG Gas leakage sensor MQ6 and temperature sensor DS18B20.Means selecting path from location One place to another happens from vehicle owner's android application which provides more safety and safeguards visiting the traveler. When the vehicle's speed goes past the required worth of the rate, then even the warning message is going to be sent from system towards the owner mobile. Therefore, the driver drives the automobile only around the vehicle owner's specified path. When the driver drives the automobile around the wrong path then your alert message is going to be sent in the suggested system towards the vehicle's owner mobile as well as loudspeakers alert driven using Raspberry pi's audio jack. Within the suggested system the already specified path within the raspberry pi's file system obtained from vehicle owner's android Smartphone using android application.**

Keywords: **Raspberry Pi; Sensors; Embedded System;**

I. INTRODUCTION

We daily see or read this particular activities that are raising the issue in our security and safety both in private and public sectors. Within the cities, human assistance is somewhat difficult in supplying the database of tracked vehicle. Within the suggested system, the machine supplies a fully automated tracking and monitoring from the vehicle which useful for college bus, their proprietors, children's safety and it offers the accurate arrival duration of the automobile at particular location or stop. So there's necessity of real-time monitoring and tracking the automobile also storing and updating its database of specific situations [1]. For tracking the automobile using Gps navigation and keep its database, MySQL database product is use which advanced feature of Raspberry-Pi. Within the database base monitoring and updating mechanism, the GSM/GPRS module can be used which transmit the updated vehicle database towards the server and user connect to the database using web site in Smartphone. To be able to reduce man power and saving of cash, here the machine provides easy tracking solution using Embedded Linux Board. The machine offers students safety mechanism with the aid of temperature sensor and gas leakage sensor. Hence within the situation of raising the temperature within the vehicle because of some reason or leakage from the LPG gas within the vehicle, the alert message get send towards the driver in addition to vehicle owner. The suggested system get tracking information from the vehicle like vehicle number (Unique ID), location, speed, Date, Some time and store in to the database of Raspberry pi.
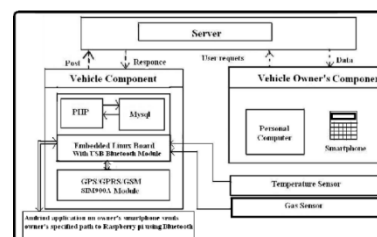

Fig.1.Proposed system framework

II. PROPOSED METHOD

The suggested system would get controlled with the aid of Raspberry pi which placed within the vehicle. The Gps navigation/GPRS/GSM SIM900A module get talk to raspberry pi using USB interface. The longitudes and latitudes of the present path caused by Gps navigation get in contrast to the stored longitudes and latitudes within the particular extendable within the database of raspberry pi. In the event that longitudes and latitudes not complement the stored one then wrong path recognition alert massage can get delivered to vehicle's owner mobile [2]. Offer safety atmosphere towards the children using gas sensor and temperature sensor by messaging alert. Continuously monitoring and tracking the college vehicle at real-time atmosphere using web site in Smartphone and when the automobile choose wrong path then system provide the aware of the owner's Smartphone and also on raspberry pi's sound system . Also suggested system provides student's safety with the aid of DS18B20 temperature sensor and gas leakage sensor MQ6. These sensors get interface with raspberry pi. When the temperature within the vehicle crosses the particular value or LPG gas get leakage within the vehicle then your alert message will delivered to the vehicle's owner. Embedded Linux Board: 5V@1A maximum power from your adaptor, 700 MHz ARM1176JZF-S core, 1GHz operating speed, 4 USB ports for being able to access exterior memory, 40 GPIO pins, and Ethernet port for internet connectivity, VGA connector and HDMI connector, 3.5mm stereo jack for audio to amplifier, Sd card interface slot to hold the OS, 512MB of SDRAM. Sensor: Measures temperature from -55 to 125 Degree C, User definable non volatile (NV) alarm settings [3]. Thermometer resolution is user selectable, Each device has unique 64 bit serial code kept in an Aboard ROM. Requires no Exterior components, Could be powered from Data line power rang is 3.0v to five.5v, Fast response, Stable and lengthy existence. Simple drive circuit, Gps navigation/GPRS/GSM Module SIM900A: ESD Compliance. Power controlled using 29302WU IC, Enable with MIC and Speaker socket, SMA connector with GSM Antenna, Configurable baud rate, Dual-Band GSM/GPRS 900/ 1800 MHz, TTL data, Supports QZSS, SBAS varying. Ultra-High Sensitivity: 165dBm. High Update Rate: as much as 10Hz. SIM900A Module which will get interfaces using the Raspberry pi provides the real-time tracking information from the vehicle for example longitude, latitude, speed, duration of the automobile. Then android application saves that longitudes and latitudes of tracked path inside a particular extendable so that owner can send that file towards the raspberry pi database using Bluetooth or USB port. Using file system programming, the present longitudes and latitudes caused by Gps navigation of Gps navigation/GPRS/GSM SIM900A module get compares using the longitudes and latitudes caused by android application [4]. The automobile tracking system works upon an formula by which, real-time information of car for example Longitudes, Latitudes, Speed, Date, and Time get store in to the database of Raspberry pi using Linux, Apache, MySQL, and PHP. The suggested system takes proper care of the children's safety by utilizing LPG Gas leakage sensor and temperature sensor. Hence if the comparison gives less tolerance only then do we can tell that driver drives the automobile on the right track. That information obtained from USB interface get stored in to the database and additional transmits towards the server [5]. The suggested system provides more safety and secure solution using android application for wrong path alert. The automobile owner's Smartphone getting an android application that gives the data regarding choice of particular path from One place to another by which the automobile designed to travel. And therefore driver drives the automobile on the way that made the decision by android use of owner's Smartphone only. Now within the further development, we go ahead and take tolerance between this separated current vehicle information like longitude, latitude, speed, date, time from Gps navigation receiver and also the information caused by android use of owner's Smartphone providing wrong path aware of the automobile owner. The Gas sensor MQ6 gives output because it receives 5V input. Then your digital output has travelled into restricting resistor and additional provided to raspberry pi. Using file system programming, the sensor data get easily access and processed further for giving alert message. So whenever the sensor sense LPG gas it provides analog output which in turn provided to LM358N Op-amp gives digital output [6].

III. CONCLUSION

The suggested system hence made use of Smartphone technology by supplying safety and secure visiting the traveler using wrong path alert mechanism. Whenever driver drives vehicle around the wrong path or perhaps in situation of vehicle's accident situation occurs, the suggested system offers the vehicle's current location, speed towards the vehicle owner's mobile. Within these specific situations, according to student's safety concern, the suggested system also gives alert massage on student parents mobile to ensure that parents also learn about their children's safety. The suggested system plays a huge role instantly tracking and monitoring of car by updating vehicle real-time info on the server side after certain interval of your time to be able to monitored vehicle continuously. Hence this advantages to track the automobile as

soon as possible. Student's safety mechanism also will get provided using temperature and LPG gas leakage sensors.

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