ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website:www.ijareeie.com

Vol. 9, Issue 3, March 2020

Vehicle Parameters Monitoring and Security System

Balakumar .M [1], Dhandapani L.S[2], Dhanesh Kumar .B[3] A.M Ezhil Azhahi[4]

Final Year Students, Department of Electronics and Communication Engineering, Agni College of Technology, Thalambur, Chennai, India [1,2,3]

Assistant Professor, Department of Electronics and Communication Engineering, Agni college of Technology, Thalambur, Chennai, India[4]

ABSTRACT: Vehicle Maintenance and security of vehicles is one among the foremost problem for a standard man nowadays and alongside the thief's have gotten intelligent too as "they can break any security system" easily and loot the vehicle. Also, Nowadays looting the vehicle becomes easier around the world,To overcome the adverse effects.We are going to introduce digitalized security parameters for our vehicles. Thus by using this proposed model,we will monitor the vehicle parameters through android application and controls the vehicle security system by using RFID module.

KEYWORDS: Vehicle, Security, Monitoring, Maintenance, Vehicle Parameters.

I . INDRODUCTION

The design development of vehicle monitoring and security system especially useful for many appliances has been reported in this paper.The novelty of this system is the implementation of vehicles internal and external parameters in different ways.As a standard man one won't be satisfied on spending an excessive amount of on maintaining his vehicle and nobody will his/her bike being looted.

As a foothold for India's digital India projects it's a layout for digitalizing the access of vehicles through the RFID and mobile app. The RFID IGNITION CONTROL MODULE allows the user to show ON/OFF the engine which results in more security. Since the vehicle is digitally connected to the user through a mobile application it ensures a wiser thanks to monitor the vehicle from anywhere. Thus it ables to monitor all the parameters in the efficienct way.

II.LITERATURESURVEY

IoT is that the internetworking of physical devices, vehicles, and other devices embedded with the electronics, software, sensors and network connectivity that enable to urge data of these objects. Confiscating details from their own vehicle without making any physical touch could be a hardly possible one. Augmentation of Smartphone makes an outsized impact in society by diminishing their toil. A surge movement of applications within the Smartphone may cutback the human's accent. In India transportation could be a booming field where the count of vehicles increasing day by day. Security and maintenance of these vehicles could be a risky one. Monitoring vehicle parameters like fuel, engine oil, tyre pressure is a perfect to grasp without making any physical touch of the vehicle. Digital locking system could be a much needed one during this digital domain. Tracking of our vehicle is additionally a significant one when your vehicle isn't with you. IoT based vehicle parameter monitoring system could be a capable one which results in monitor our vehicle's parameters like backlog, tyre pressure, engine oil level through an Android App. It's Smart RFID digital key secure your vehicle over by accessing by keys. During this app

ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website:www.ijareeie.com

Vol. 9, Issue 3, March 2020

we will save our vehicle documents, user driving licence, insurance copy and other documents. Notification for engine oil, battery rejuvenation is additionally done. Message and shares location to trusted persons whenever ensue accidents.

Ⅲ. PROPOSEDSYSTEM

In this proposed system,we are going to implement all the vehicle parameters in a single device called node MCU (esp8266).Thus node MCU can able to monitor all the parameters in the efficienct way.By using this model and by implementing various sensors,we can easily able to track our vehicle by Gps module, temperature sensor (LM35) to detect the temperature of the vehicle.RFID IGNITION CONTROL MODULE allows the user to show ON/OFF which results in more security.Ultrasonic sensor is added to check the level of petrol.So therefore, If the vehicle is continuously in running state.The condition of the vehicle is gets to notified by the user with the help of android application.So this will helps to monitor our vehicle parameters and guidegaurd our security system.

BLOCK DIAGRAM :

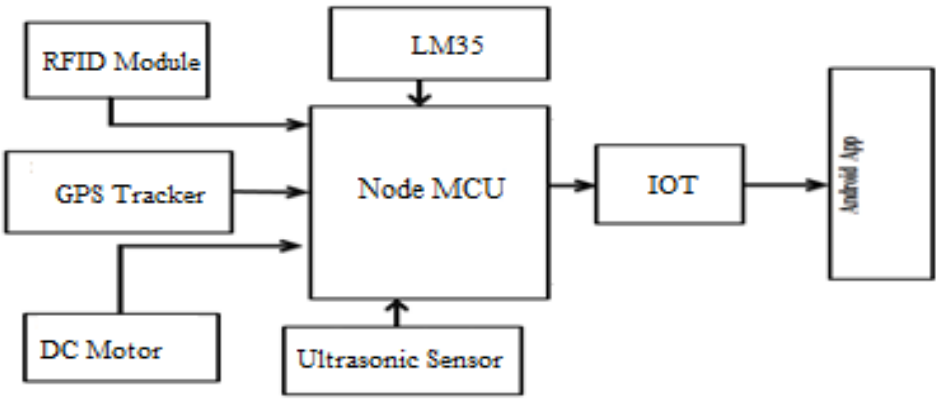

Fig 1: BLOCK DIAGRAM OF THE PROPOSED SYSTEM

The Node MCU ESP8266:

The Node MCU ESP8266 which has 8MB FLASH

• 2xUSB Host/Device Interface, 1xEthernet

• 5xSPI, 3xI2C, 8xUART, 7x12-bits ADC

• Which provides High speed processing with operating frequency of 400MHz and therefore the USB host allows one to use endless devices with MCU .Here the MCU Processes the serial data and in addition as analog data

• Serial.0 is employed to speak with wifi module to produce internet to the vehicle in addition as involves in data transmission

ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website:www.ijareeie.com

Vol. 9, Issue 3, March 2020

• Serial.4 is employed to speak with GPS Module to receive the vehicle coordinates (lat, lon), Time(UTC),date,etc.,

• Serial.5 is employed to speak with RFID reader to receive the Tag details and initialize the Ignition

• Digital pins

• D4 & D5 are wont to activate & off the Relay supported the Tag scanned and current vehicle's power status

• Analog Pin

• A0 is employed to Read the analog voltage received from Float sensor and it's processed to induce the number of fuel.

• A1 is employed to read the analog voltage from temperature sensor (LM35) and therefore the value is processed to induce the temperature of vehicle's engine

• A2 is employed to read the voltage received from the battery of car and is processed to work out the vehicle's Battery health and Level

• A3 is employed to read the analog data from the oil level sensor to work out the oils health

• The RFID Reader works on tags has the operating frequency of 125kHz and it's Highly Precise and Accurate. The most aspect is that this has Tag reading capability up to 10cm which ensures perfect reading of cards

• The GPS Module provide the coordinates of the vehicle as a serial data to the MCU for tracking it works on 8 satellites to produce exact location of car

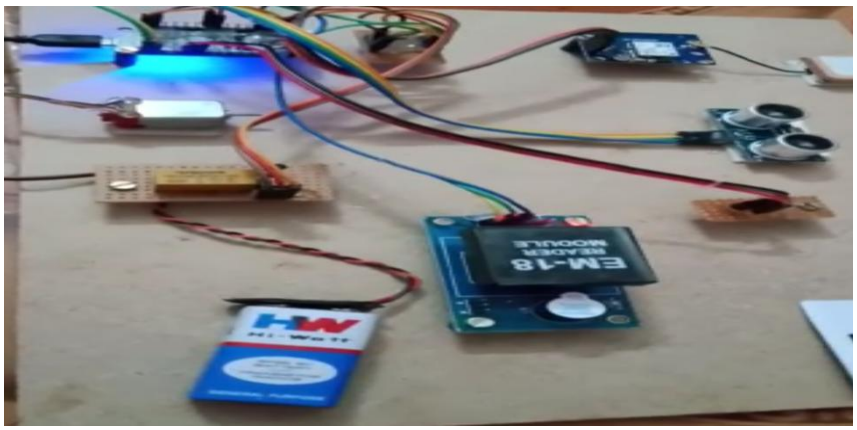

Fig 2: Vehicle Parameters Monitoring and Security System

IV.FUTURESCOPE

This system is
• In Hospitals we are able to use IOT to manage complete package
• Home Automation
• Actuator application like switches
• For security purpose

ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website:www.ijareeie.com

Vol. 9, Issue 3, March 2020

A. ADVANTAGES

- ✓ 1.Reliability :- differential signaling
- ✓ 2.Priority :-easily prioritize messages
- ✓ 3.Low wire count
- ✓ 4.Node independence
- ✓ 5.can add / remove nodes
- ✓ 6.node breakdown doesn't bring down network

B. APPLICATION

Most typical use is within the industry. accustomed connect subsystems within an electronic control unit additionally as connect electronic control units together .Typically the biggest control unit during a vehicle is that the engine control unit Modern automobiles may have up to 70 electronic control units

V.CONCLUSION

The literature survey on the implementation of varied techniques has been reviewed and that we have suggested an answer during this paper. By this solution we've provided a security to the vehicle owners by providing location tracking, backlog monitoring, Engine's health etc. There are various ideas are proposed similar with our idea but all the ideas are just for four wheelers and trucks. The thought we proposed is for 2 wheelers. The value are going to be less compared with other ideas. By this the placement of the vehicle are going to be seen within the mobile application and backlog also indicated. This provides a security and simple to access for the vehicle.

REFERENCES

1. ManaliShilimkar "Survey Paper on Vehicle Tracking System using GPS and Android", International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 3 Issue 11, November 2014.
2. A.Anusha "Vehicle Tracking and Monitoring System to Enhance the Safety and Security Driving Using IoT" 2017 International Conference on Recent Trends in Electrical, Electronics and Computing Technologies (ICRTEECT), July 2017.
3. Mayuresh Desai "Internet of Things based vehicle monitoring system" 2017 Fourteenth International Conference on Wireless and Optical Communications Networks (WOCN) IEEE, Feb 2017.
4. "Design and Implementation of Vehicle Tracking System Using GPS/GSM/GPRS Technology and Smartphone Application", IEEE World Forum on Internet of Things (WF-IOT), March 2014, Seoul.
5. "Design and Development of GPS-GSM Based Tracking System with Google Map Based Monitoring", International Journal of Computer Science, Engineering and Applications VOL 3, No.3, June2013.
6. "Vehicle Tracking System GPS", T.Sathepooja, International Journal of science and Research (IJSR), India . Online ISSN: 2319-7064 volume 5, Issue 4, April 2016.
7. "Challenges in Android Application Development: A case study" Abinav kathuria, Anu Gupta, Vol 4, Issue-2015, pp. 294-299.