



Smart Automation Truck using GPS and Sensor

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Abstract:

The Vehicle Automation is fully automated will be capable of controlling all aspect of driving without human intervention. Automation is the Formation of auto technology and Automation is application in the way to control and monitor the production, delivery of various goods and services. Automation is being used in a number of areas such as manufacturing, transport, utilities, and facilities. In existing system for handle vehicle automation number of code are developed by programmer for changing path. In this project, numbers of program are reduce for changing path and reduce man power of programmer. In Self driving car, dri ver doesn't known about back door are open or close but in that when limited time of loading is complete but process is incomplete then it generate bit to alert. We will trace location through GPS to track & trace location of vehicle to monitor and getting location from source to destination. To detect from obstacle we are using sensor to prevent accident and after completion of loading and unloading process that will be generate beep.

Keywords: GPS, Sensor, Bluetooth, Motor Driver, Arduino

I. INTRODUCTION

This chapter puts the information about vehicles that operation occurs without direct driver and it takes input to control the steering, acceleration, and brake. Trends of automation vehicles, which can control collision Detection & collision avoidance of vehicles or anything. Autonomous vehicle are done with many positive benefit: that are used to provide the security, reduced congestion and decrease stress for car occupants among others. That vehicle uses the Artificial Intelligence for making automated truck. Sensor are used to sense the obstacle in the road that are process and it is operation of specific actions or task to protect from accident & GPS system is used for Location, navigation, tracking, mapping, Timing. GPS is used to play very important role for track and trace that particular place. Professional truck drivers are very important for transportation in keeping the global economy alive and commercial products transportation. In that used to increase the productivity and improve safety and amount of automation which is implement in modern trucks. Vehicle Automation is fully automated that are usable to control and monitor various aspect of drive without human interferes. Automation is the construction of vehicle automation and application in order to restraint and monitoring transportation of various difference goods and many services and product. In other Industry, automation is greatly best productivity that is save time and reduces costs. Automation is being used in a number of areas that are manufacturing, transport, utilities, facilities, operations and information technology. This report examines various emerging repeated issues surrounding the deployment of automated and Autonomous Vehicles. This work was based on the master opinion of the authors and serves as a think piece regarding the nature, timing and scope of regular action regarding automated vehicle according.

II. LITERATURE SURVEY

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III. PROPOSED SYSTEM

In proposed system, automation diagram show the for many purpose we are including the various hardware to solve the problem of obstacle and finding the location that is wireless connection handle through internet. Arduino is easy to use

hardware and software in this project. Mega Arduino is microcontroller board based on the ATmega2560. External power can come from AC to DC adapter or battery.

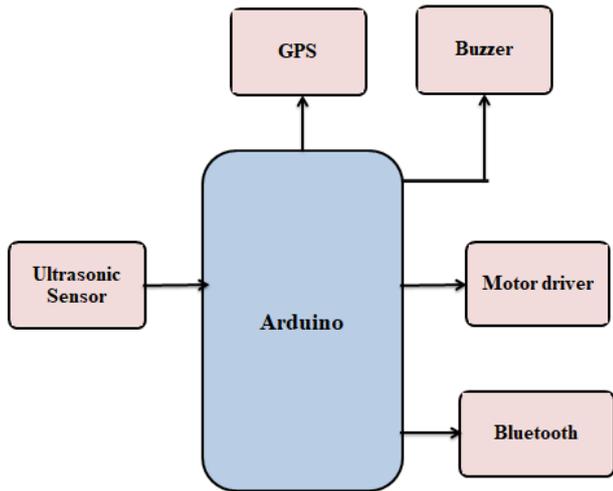


Figure.1. Block diagram of Truck Automation

In Ultrasonic Sensor, It is use to sense the emit short, high frequency sound pulse at internal. Ultrasonic sensor is suitable for target distance from 20 mm to 10m. GPS is used to find the location to specified the particular place that are currently being used for around the world include mining, aviation, surveying, agriculture, marine, recreation and military. GPS system is used to work more to protective, safe and easier. Motor Driver is hardware module motors drive that allows controlling the working speed of vehicle. The Direction of the Motor driver are design and develop based on L293D IC. Motor driver current voltage 5 Volt. Bluetooth is the wireless technology used to connect the device to communicate with each other that is personal area network that transfer the data over short distance that wavelength that wave in ISM band. We are use the alert Buzzer used for data loading and data unloading the product translation. When the loading and unloading time will be complete then it can generate beep for alert buzzer.

IV. METHODOLOGY

This methodology is show process of truck automation will be work and which hardware are add in for hand hardware vehicle. In that software and hardware how to work for control traffic and protect from obstacle and through command how to automatic track path to transport. the Autonomous trucks use Artificial Intelligence and work using sensor to detect from accident and Danger prediction. Adriano board is use for interface hardware & software to able read inputs. It’s used to connect automated truck and software. Using GPS we are easy to track and trace location of truck to monitor and getting location from source to destination. Arduino is used to capable to read the inputs which is light on sensor finger on a button and massage in twitter and turn it into the output which is use for active the motor, LED turn and publishing anything online. Mega Arduino is used to play very important role in any project that is used to connect all type of device in Arduino port. In that total Mega 2560 pin board. 54 digital pins of input and output in that of which 14 is for PWM output can be used and 4 UARTs that will be hardware serial port. In Arduino, memory always in built that can be store the hardware related programing in that storage memory. Arduino Design Institute as easy tool for fast speed prototyping, main motive at

students without a background in electronics and programming. Wider community, the Arduino board beginning the commute to adapt to different needs and challenges. Differentiating its offer from simple 8-bit boards to products, wearable, 3D printing, and embedded environments. All Arduino boards are totally free-source, to authorize users to make them independently and adapt them to their specific needs. Now day's many industries and Organization are using robots for high level of performance and authentic and which is a great help for human beings. For avoidance the obstacle of robotics that are used the detecting or discover sensor to sense determine it and ignoring the collision. The determination of obstacle is the first important requirement of this autonomous robot. The robot collects the information from surrounding area-using sensors on the robotic vehicle. Various different sensor devices used for obstacle detection determine that is bump sensor, infrared sensor, ultrasonic sensor etc. Ultrasonic sensor is most useful for obstacle discovers and Ultrasonic sensor cost will be low and it has high ranging capacity. The obstacle avoidance vehicle uses ultrasonic sensors for its movements. It is used to achieve the desired operation. The motors are connected through motor driver and that will be IC to microcontroller connects. The ultrasonic sensor is placed in front of the robot vehicle to detect fast and perform act. GPS is a global positioning system that is provides geographical location and time information to a GPS receiver anywhere and anytime or near the Earth where there is an unobstructed line of sightseeing for more GPS satellites. The global positioning system (GPS) is a 24-satellite navigation system that is used that various uses satellite signals to find a Particular position on earth. The technology was mainly used for military by emergency purpose to locate people in need of assistance. GPS systems are extremely new changes and can be found in almost any Organization sector. They can be used to map forests, help farmers harvest for their fields, and navigate airplanes on the ground or in the air. It is what allows you to tag your digital photos with precise to collect geographic information. GPS is the process of embedding a digital photo with latitude, longitude and even altitude data.

V. CONCLUSION

Safe and secure the automation vehicle, fun to drive, fun to use this is the automated drive. As autonomous driving is become, a part of everyday life style and accidents or traffic jams all become outdated such an automobile environment cannot be realized with the progress of new technology. It wills way of reestablish rules from many viewpoints from the past, such as the development of laws, country and regulations beneficial for auto vehicles that will be responsibilities when unexpected problems arise. Various different feature add in this project to detect from collision, to identify location that specific place are trace and track, sense to protect from accident and its wireless Bluetooth through drive. Many advance technique are used in that for improving working of vehicle automation.

VI. FUTURE SCOPE

In future, the use of GNSS is Global Navigation satellite system in automated vehicle. A laser radar that surveys the three-dimensional shape of the automobile’s surroundings, 360 degrees. It rotates in high speed to detect vehicles and pedestrians. It frees up the resource to focus on tasks that require creativity, decision making and judgement and that can be used for improvised analytics and improved data authenticity.

VII. REFERENCES

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