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Iot Based E-Puc System

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Abstract: — Pollution is always been a major problem on earth. The best example and burning issue of air pollution is china and also our India's capital Delhi. Which is suffering from air pollution. There are many reason stands behind air pollution but most of times it seems that vehicle is largely causes to air pollution. Now it is estimated that there are 60-70 million motor vehicles in India. An Indian government took this issue in serious manner, so they are emplacement and pollution control board to examine done by a vehicle. They develop a P.U.C system that checks the level of pollutant which is exerted by a vehicle. P.U.C is simple way to check the pollutant content Exerted by vehicle with some electronic equipment and less space. But now days we can see that the equipment is not in proper manner. And the P.U.C Holder examiner is not proper guided and has a less education ability. For this problem we have designed and device which is Internet of Things based E-PUC system, which has four sensors which detects pollution content of vehicle smoke. And automatically send the information to authorized government R.T.O office. Which analyze the data and send message to the particular vehicle owner. If the content of P.U.C is out of limit fine amount is cut through owner account. The advantage of this device is require less human resources, process is automatically and fast, no need to visit P.U.C center. This helps our governments to keep easily attention on pollutant vehicle and helps to keep nature of green India.

I. INTRODUCTION

Pollution has major preoccupation on earth. There are different techniques to measure the pollution. From time until to minimize impact of the pollutant. But neither pollution is reduce nor its source. From ancient world to till present stage none of solution is fully compatible to reduce the impact of pollution. The pollution can be categories in many classes. The pollution and specially an air pollution which one of the type of pollution. Which is seriously key factor for environment .India is developing country; an India has large pollution around 1.252 billion and 24.85 million cars and vehicles driven by people.

One of very important key factor of pollution which is causes to pollution is emission of various gases exerted by an vehicle such gases are, CO, carbon Monoxide, non-methane, hydro carbon, nitrogen oxide, which is serious factor which lead to air pollution and degrades the level of surround of environment. An Indian government succeeds to find the final solution in some amount. Which means of PUC i.e. Pollution under Control. The air pollution which can be done from vehicle can be check by system called PUC system. A PUC system which is commonly seems at petrol pumps, gas stations and in PUC store. Which is commonly measure the level of gases exerted by an vehicle, if these are at level of harmful. It will be fined by authorized government.

P.U.C. what actually does it contain a gas analyzer, computer and printer for an output test result. What we have to do just put a pipe near an silencer of vehicle the sensor which decides the level of gas emitted by vehicle.

II. OBJECTIVE AND SCOPE

The main aim and objective of our project is to minimize human interference in P.U.C system through which we can minimize the air pollution. This technology can be easily used by common vehicle and making more safe our environment which saves the surrounding nature. This project has the large benefit and scope as it has the features which help us in daily life and easy to use, and to understand it.

III. REVIEW OF LITERATURE SURVEY

SIAM in conjunction with SAFE had been pressing hard to establish prototype computerized test centers in the main metropolis but backed off in the light of political pressure against them. They were accused of making vehicles to a low quality standard that could not get through a strict test, and promoting an I&C test with lenient limits. The SIAM initiative is focused only on data entry and data collection. SIAM really has not done any work to improve the test itself, measure anything other than CO or tighten limits. Bangalore now has over 100 computerized PUC stations (vs. 2 in Mumbai) and the next in line to adopt them is Hyderabad.

SIAM has installed a computerized data entry program in place in Bangalore for non-diesel vehicles and SIAM/SAFE is now proposing the data collection side. SIAM itself has been going around the PUC center's to manually collect data

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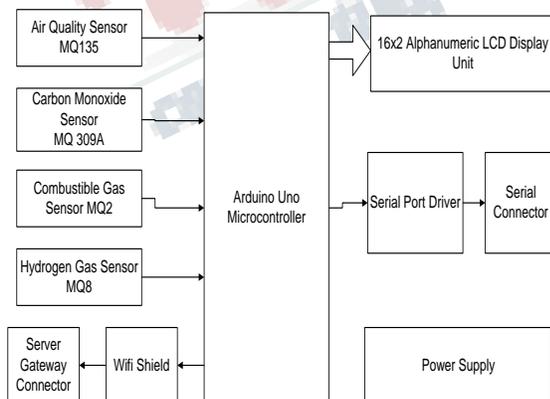
but have yet to find anyone interested in using it. The current software, written in Visual Basic 6 with its database in Access, includes the drivers for obtaining the HC and CO readings from 10 different analyzer's (four 4gas analyzers and six 2-gas analyzer's). Some of these data channels are analogue and very few allow synchronous communication with the gas bench. The software is designed for data input; it does not control the analyzer or the length of the test. Its current level of security against tampering is low, being protected by only one Access password. It includes a custom driver for the web camera to include a photo of each vehicle in the database.

The software does not include any functions necessary for quality control and quality assurance, such as calibration control, auto-zero and residual checks. Neither does it include any data transmission functions at this stage. At a later stage SIAM intends to add a data transmission module for each centre to send the daily results to the main SIAM server via the Internet. From there, they plan to make some of the information available to the local authorities

- **Present State:**

P.U.C. what actually does it contain a gas analyzer, computer and printer for an output test result. What we have to do just put a pipe near a silencer of vehicle the sensor which decides the level of gas emitted by vehicle. P.U.C is simple way to check the pollution content exerted by vehicle with some electronic equipment in less space. All the process gives result by an computer system but resulting which taken by a particular an shop owner of P.U.C centre is not with proper right procedure and equipment

IV. PROCESS DESCRIPTION/METHODOLOGY



Result which taken by a particular an shop owner of P.U.C centre is not with proper right procedure and equipment. Which are not in proper saturated and not calibrated time to time, equipment are not checked and equipment are too faulty. The P.U.C examiner has less education ability and not proper guided which helps to maximize air pollution. So looking for the problem related P.U.C we took concept of IOT based E-PUC system. An IOT based E-PUC system which has base of an Aurdino which is used for as base to process an control of system. which is an aurdino Uno, An IOT which is internet of things based E-PUC system used sensor which are carbon mono oxide, gas combustion sensor are used to sense an smoke exerted by an vehicle and the gases which are leading to air pollution the four sensor which detect pollutant center of vehicle smoke which is placed near exhauster of vehicle.

The sensor gives output to the controller of system. The system's controller analyzes the result of the system. If the result that make concern as compare to standard value and exceed the limit of safety it sends the data to the cloud.

To send the data from controller to cloud the medium digital. Which is WIFI shield interfaced with an Aurdino which require basic internet connectivity and hot spot the cloud which contain information of particular user with one private access key. Vehicle user with one private access key which shows you the result of your P.U.C test.

The result can also be displayed by an alphanumeric display and various ways we can display our result. The other way to display P.U.C result are electronic mail and through the SMS and Social app TELEGRAM. The result has two copies one for authorized government and second one are for the vehicle owner. The device to fit in particular vehicle. The reason behind this project that any third party or person cannot manipulate the P.U.C result. The test took for vehicle is purely assured .less human interference for device .no need to visit the particular P.U.C shop.

- **Hardware**

Aurdino Uno kit with Wi-Fi shield.

- MQ 135 Sensors.
- MQ 2 Sensor.
- MQ 309 a sensor.
- MQ 08 Sensor.

- **Software**

- Aurdino software.

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