

# IOT BASED BOREWELL VEHICLE STATUS USING MICROCONTROLLER

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## ABSTRACT

The objective of this paper is to design an automatic borewell vehicle status informer using Arduino UNO microcontroller which can be used for monitoring the number of borewell rods drilled and this informations are monitored in webpage. The work is decided on approval of borewell vehicle owner and customer. The amount of borewell rods drilled into ground and unloaded from ground is planned using immediacy sensors. All this development is controlled with the support of Microcontroller. The number of rods drilled which is measured by using proximity sensors is necessary to be known in order to calculate actual depth the borewell is drilled. The customer calculates the total cost for the borewell operation based on certain fixed amount per rod so it is necessary for a customer to know the number of rods drilled. Borewell drilling process continues for long time thus the workers need to work for long time without any rest. This is not possible the workers need some rest so there is a compulsion to stop the compressor this in turn leads to difficulty in calculating the total runtime of compressor accurately. So we go for an advanced technique to compute the entire runtime of compressor. As the borewell vehicles travel to different locations for borewell drilling process the owner of the vehicle may not know the accurate locality of the vehicle so here is a simple technique to notice the accurate locality of the borewell drilling vehicle by using GSM.

**Keywords:** Borewell, Arduino Microcontroller, Rods, Proximity Sensors

## I. INTRODUCTION

Bore well is an process of drilling the ground to extract water. In India, the bore wells are the main water basis which is old for marital and agricultural purposes [1]. In order to complete this process bore well drilling machines are required. These bore well drilling equipment are emotionally involved to vehicles in order to carry them to exact site simply. As the bore well vehicles travel over prolonged distances, there is an need for the owner of the vehicle to know the details about it. Normally the worker who controls the machine keeps updating the information to the owner about bore well operation. while the overall price of the bore well process depends upon the amount of rods drilled and compressor runtime, there is a requirement for the bore well owner to know regarding it.

But there is a difficulty in remembering the number of rods drilled because of increased number of rods, this in turn leads to recount the number of rods while receiving but the difficulty still exists this increases the occupation stress.

## II. EXISTING SYSTEM

Past days we don't know where borewells located or not, don't know about the status of borewell [1]. In this, they have used microcontroller instead of arduino UNO. Using crash sensor they detected that the mistake has occurred by detecting the atmosphere. Then with the help of GPS, GSM etc. it sent communication to server side and then to payment side. From payment side server gets communication of position of accident [2]. A system is

designed to note the location of the vehicle and to identify the theft by passing the information to the automobile owner. Such system includes GPS and GSM modules to determine the position of the vehicle and to deliver the information to the owner. This system is designed for continuous monitoring of the vehicle and to describe the status of the vehicle on request [3].

### III. PROPOSED SYSTEM

This system which is designed to trace the vehicle when it is lost using GPS and GSM technology. GPS receiver and GSM module uses Arduino UNO controller to forward the commands. This system is fixed inside a vehicle.[1] GPS module will transfer the location values to the controller. Controller will receive it and sends that information to the automobile user using GSM modem. Now the owner can take appropriate action using GSM. To provide security to the system which is placed inside car RFID technology is used[2].

### IV. WORKING PRINCIPLE

Proximity sensor is more helpful in detecting the presence of objects lacking any material contact with the object this does not cause damage to the target. The proximity sensors are connected with Arduino UNO Microcontroller and the inductive proximity sensors A and B are fixed at top and bottom of vertical positioned machine. When an borewell drilling rod is placed in the position the borewell rods are sensed by both inductive proximity sensors A and B. At time of drilling the rods on earth surface the switch is turn to down drill position this helps in incrementing the rod counts[1].

### V. COMPONENTS USED

#### A. Arduino Uno

Arduino UNO is an open-source microcontroller floorboard based on the microprocessor. ATmega328P microcontroller and developed by Arduino.cc. The board consists of sets of digital and

analog input/output (I/O) pins that can be interfaced to various expansion boards and other circuits. It has 14 Digital pins, 6 Analog pins, and programmable with the Arduino IDE via a category B USB rope. It can be motorized by a USB rope or by an outside 9 volt battery, though it accepts voltages connecting 7 and 20 volts. The ATmega328 on the Arduino Uno allows uploading new code to it lacking the use of any outside hardware programmer[4].



#### B. GSM module

GSM is old as a media which is used to manage and monitor the transformer load from somewhere by distribution a communication. It has its own deterministic character. GSM is used to monitor and control the DC motor, Stepper motor, Temperature sensor and Solid State Relay by sending a message through GSM modem[4]. Hence no need to waste time by manual operation and transportation. It is careful as extremely efficient message through the mobile which will be useful in manufacturing controls, automobiles, and appliances which would be forced from somewhere else. It is also highly economic and less expensive.



### C.GPS

GPS is map-reading structure which provides the position and timing forces. In the beginning these were used for argument conservatory and later on came into usage for everybody. Main benefit of gps is to track the position of everything which has these gps machine. It operates based on four or additional satellites to get the position. In the project these are used for tracking the location of the vehicle[1].



## VI. CONCLUSION

In this paper, an automated borewell status informer has been proposed to determine the borewell drilling rod counts along with total runtime of compressor. These can be useful in monitoring the location of vehicle. They do not need much space as they are compact in size. They are effective in cost, simpler and consume less power[1]. The important objective of this paper is to develop a simple and low cost automated borewell status informer that get

the drilling rod counts and compressor runtime details and process them.

## REFERENCES

- 1."Smart Vehicle Monitoring System",N.Upendra Yadav1, Prof Kamalakannan2 1VIT University, Vellore, India 2J Assistant Professor (Selection Grade, ME, CSE Department), VIT University, Vellor, India . IJDCST@March-April-2017,Issue-V-5,I-3,SW-31 ISSN-2320-7884 (Online) ISSN-2321-0257 (Print) 72 www.ijdcst.com.
2. "Vehicle Detection and Tracking System" A Review International Research Journal of Engineering and Technology (IRJET)e-ISSN: 2395-0056,Volume: 05 Issue: 08 Aug 2018 www.irjet.net,p-ISSN: 2395-0072, Mohammed F. Alrifai1,2, Norharyati Harum1, Mohd Fairuz Iskandar Othman1, Irda Roslan1, Methaq Abdullah Shyaa1.
- 3." Vehicle Tracking and Monitoring System Using GPS and GSM "A. Mounika, Anitha Chepuru, International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-8, Issue-2S11, September 2019.
- 4."Microcontroller Based Accident Detection System", Angel Joshna Jose1, Fitha A. M2, Hari Krishnan V. P3, Johns Davis4, Caren Babu5, International Journal for Research in Applied Science & Engineering Technology (IJRASET) ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.177 Volume 7 Issue V, May 2019- Available at [www.ijraset.com](http://www.ijraset.com).
- 5." Implementation of Vehicle Monitoring and Tracking system" using Node MCU Boddapati Venkata sai Padmaja, Venkata Ratnam Kolluru , Syam Sai Kota, International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-6, April 2019.