# TIME ANALYZER IN TRACTORS

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**Abstract**

In agriculture sector, farmers require huge vehicles such as tractors etc which are used in agriculture. All these vehicles are very expensive and they use a lot of fuel. Whenever these vehicles are used, as they use a lot of fuel it obviously costs more. Not all the farmers can drive and work in the field thus they hire drivers for doing the work. Some of these drivers don't work in the field and they take out the fuel and use it for themselves or sell it for others. But they say that they did their part of work and get paid for it. Here the farmer is getting the loss in two ways. The first one is that the fuel is being stolen and considering the raising prices of the fuel and the quantity of the fuel needed to work in the field, it's the major loss for him. The second one is that the worker is getting paid even though he doesn't work.To avoid this, we want to create a time analyzer which analyzes the time for which the vehicle is used. This time analyzer is controlled by a microcontroller Arduino uno. When this is initialized for the vehicle, when the vehicle starts to move or when the gear is applied the timer starts and sends the message to the owner indicating the start of the vehicle. When the vehicle is stopped it again send message to the owner indicating the stop of the vehicle and displays the time used.

## 1. INTRODUCTION

In agriculture sector, farmers have a vehicles such as tractors etc.Not all the farmers can drive and work in the field thus they hire drivers for doing the work. Some of these drivers don't work in the field and they take out the fuel and use it for themselves or sell it for others. But they say that they did their part of work. To overcome these problems, we came up with a product called "Time Analyzer in tractors" Main aim of this project is to know the time duration of the vehicle used by that we can come to know the consumption of the fuel. So that we can overcome this problem and most of the farmers get benefit.

## 2. RELATED WORK

The literature studies the various technologies that are used worldwide in

the automatic time analyzer system. This system includes a GPS which retrieves the location of a vehicle, microcontroller which is interfaced with a GSM modern. Microcontroller retrieves the location details from the GPS and sends it to concerned authority in the form of an SMS over GSM modern. An LCD display is interfaced to the microcontroller for crossing the data received before being sent over GSM.The heavy vehicles used in agriculture driven by the drivers and the owners don't actually know the time till which the vehicle is used and the fuel consumed. So by knowing this we came with an idea but which don't give the exact location it will give the information about how much time the vehicle has been worked so that we can know the fuel consumption. So, our solution to prepare a time analyzer using Arduino to notify the usage of the vehicle.

### 3. IMPLEMENTATION

The time analyzer system comprises of a gsm module, Arduino microcontroller, LCD, switch , potentiometer and jumper wires. After the connections are given the vehicle owner needs to connect his mobile to the number of the sim to receive the messages. Then the setup starts to work. The switch of the system is placed at the gear such that when the gear is applied the switch automatically turns on. Previously

the owner connected the sim's number to his mobile as soon as the switch turns on the timer starts recording and sends a message to the owner indicating the start of the vehicle. The timer continues to record until the vehicle remains in that gear. When the gear is removed the switch turns off and the timer stops. As soon as the timer stops another message is sent to the owner indicating the stop of the vehicle. Second time the message sent sents the time for how much the vehicle was running. If the owner wants to change the number registered he needs to press the reset button and registered another number for which he wants to receive the messages.

➤ Time analyser using Arduino project is based on Arduino controller board which controls the various activities of the project.

➤ When this is initialized for a vehicle, when the vehicle starts to move or when the gear is applied, the timer starts and sends a message to the owner indicating the start of the vehicle.

➤ When the vehicle is stopped, the time analyzer sends message to the owner again indicating the stop of the vehicle and displays the time travelled by the vehicle.

➤ In this way, owner can calculate the maximum amount of fuel used by

the vehicle. Thereby, drivers cannot cheat their owners in the name of fuel.

➢ This saves money as there is no need to pay for the drivers who try to cheat.

➢ It doesn't require any great knowledge about the technology for the farmers to use it.

➢ Advancement in technology and reliability in electronics and mechanics have drastically reduced long term maintenance concerns for tracking systems.

➢ The aim of this project is to ensure that the farmers facing this problem should benefit from this time analyzer system. When this is initialized for a vehicle, when the vehicle starts to move or when the gear is applied, the timer starts and sends a message to the owner indicating the start of the vehicle. When the vehicle is stopped, the time analyzer sends message to the owner again indicating the stop of the vehicle and displays the time travelled by the vehicle.
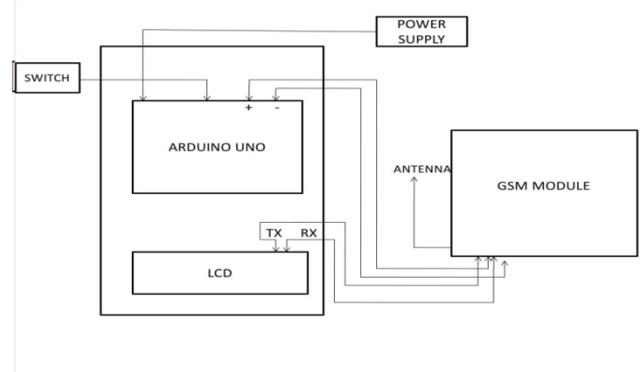


## 4. EXPERIMENTAL RESULTS

• The time analyzer is set in tractor near gear. The switch is placed adjacent to the gear, so that when the tractor moves or the gear is applied, the switch sends a message to the Arduino and other micro controllers.

• It detects the movement of the vehicle and sends a message to the owner; it also sends the message when the vehicle is stopped.

• Every day, the owners have to press the reset button so that the calculation will be easier.
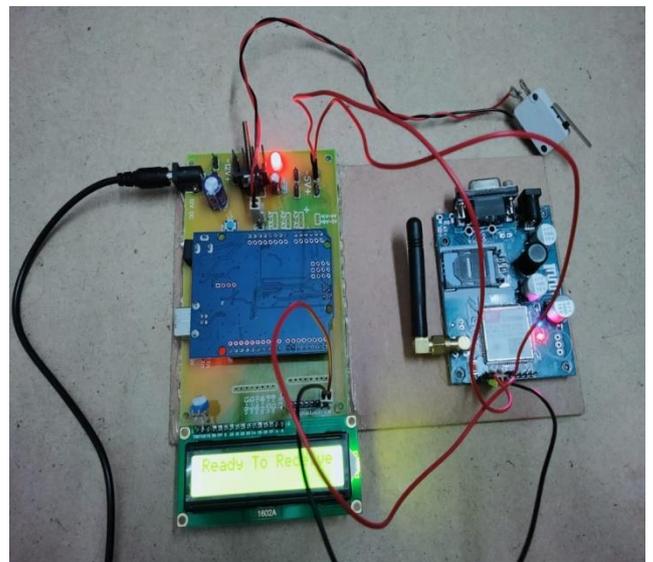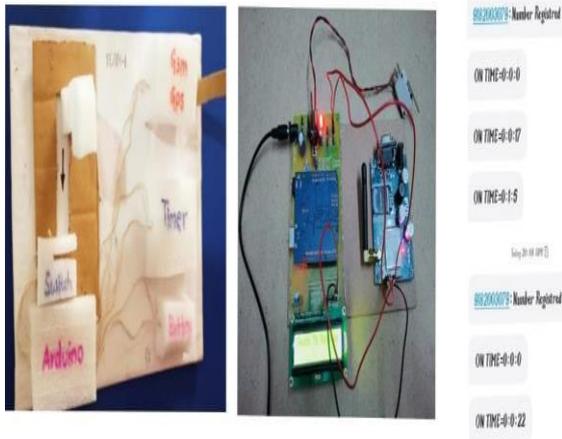
## 5. CONCLUSION

The main aim of the project is to design a model which is more useful for the farmers, which will save their money. In our model we can know how much time the vehicle is used for and from that we can calculate the appropriate fuel used, so that owners can save their money. Therefore, farmers will be benefited, so that they cannot be cheated by the drivers, The cost and reliability of this time analyser is suitable for the rural usage.

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