A

PROPOSAL

ON

AGRO DRONE

SUBMITTED TO :

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# Abstract

This proposal is about the project which consists of an energy efficient drone running on solar power for the purpose to monitor/surveillance the agro plants with auto pilot feature, monitoring the agriculture area automatically with the potentiality to reach any area of the country whenever assigned to monitor specific area. It automatically provides information about the crops growth rate, condition of the crops, germs/ disease attack, and harvesting time along with temperature and humidity of that area. Thus analyzing the crops from cultivation to harvesting period with real time video streaming for the purpose of analyzing and viewing the agriculture area. The farmers can also view their field at any time through attractive web responsive interface.

# Statement of problem

Our country is an agricultural country with around 60% population involved in agriculture sector. Despite being large population involved in agriculture, the net agricultural product that should be produced is below the quantity that produced actually efficient way. The manpower required to observe and monitor is high and the task is tedious.

The agrodoctors in the country , to diagnose crops condition and control epidemics is extremely low and those who are available makes its tedious to observe the entire field and provide results instantly. It’s not possible to observe acres of agricultural area. Thus increasing the chances of epidemics. The farmers also have to walk several kilometers to analyze their agriculture whether they are healthy, need water, ripped or not, harvesting period, etc. which ultimately consumes lot of time and manpower resulting in fewer crop producing and increasing expenses.

# Objectives

* To make a drone which runs on solar power
* To reduce the work load of the farmers
* To diagnose the germs and diseases
* To monitor the crop conditions
* To alert at adequate harvesting period
* One click live streaming the agricultural area

# Methodology / procedure

In this project first we will make a drone with runs on solar power and is capable of reaching any area of the country wherever the mobile network is available. it consists of a GSM module connected with the pi to give the pi internet access. The data of speed , height , temperature, humidity ,location coordinates are collected and send to pi which sends it to the amazon cloud and from the cloud the data can be accessed via web responsive app. The web app is designed in such a way that the drone can be controlled from the ground manually as well as set in auto pilot mode where it can be assigned to reach any particular location. The web app displays the live videos taken via drone camera. The images captured via cameras whose

# Time management

The entire project is divided phases among all the four members of the team which will be synchronized parallel

1. Making drone

In this phase, the drone is made and tested. It would a month to make and drone.

1. Running drone on solar power

The drone power consumption will be calculated and on the basis of that, the required power to drive the drone efficiently using solar is found . the desired power is to be obtained using solar .

1. Making the drone interface and connecting it to cloud
2. Detecting the crops condition along with the spread of epidemic diseases

The captured videos from the drone is processed via different AI algorithms to findout the crop growth rate , health, maturity and harvesting period. AI is used to analyze the health of the crop and detect various crop diseases.

# Cost estimate

The cost of the project is estimated as:

|  |  |  |  |
| --- | --- | --- | --- |
| S.N | Device | Quantity | Cost |
| 1. | Raspberry pi | 1 |  |
| 2. | Gsm module | 1 |  |
| 3. | Logitech camera | 1 |  |
| 4. | Solar cell |  |  |
| 5. | Lipo battery | 2 |  |
| 6. | ESC | 4 |  |
| 7. | Brushless motor |  |  |
| 8. | Frame |  |  |
| 9. | MPU6050 |  |  |
| 10. | BEC |  |  |
| 11. | Humidity sensor |  |  |
| 12. | AWS |  |  |
| 13. |  |  |  |
| 14. |  |  |  |
| 15. |  |  |  |
| 16. |  |  |  |
| 17. |  |  |  |
| 19. |  |  |  |
| Grand total | |
|  |  |  |  |
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|  |  |  |  |

# Conclusion

# workscited