



Surveillance and Security Management System Using Drone

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Abstract: Nowadays world facing many problem in surveillance and security management, for this we are going to introduced a new proposed system is unmanned aerial vehicle. This system is to increases the efficiency and also reduces the man power. Drone is used to cry the camera for surveillance, it can cover particular area or particular person and capture the videos. Capture video can send to raspberry pi processing and processed data can be transferred from drone to nearby station with help of RF single. Unmanned aerial vehicle (UAV), an chief way of aerial remote sensing, takes been broadly used in various fields with the unique technical advantages such as flexibility, suitability, low cost and high-resolution digital surface models.

Keywords: Automation, GPS, GSM, Accelerometer Sensor, Mobile Application, Microcontroller and sensor.

I. INTRODUCTION

Unmanned Aerial Vehicles (UAVs) are a developing technology that can be attached for military, public and civil applications. All the country are using drone or Unmanned Aerial Vehicles used for multipurpose usage. It can reduce the manpower and this can be used for finding the people in the reserved area. This technology is most developing in the current world. Drone are mainly used in marriage functions and international match like cricket, football and all other match, for taking video and send to nearby station for processing. In our we are introducing a image processing with help of raspberry pi. In India, Unmanned aerial vehicle (UAV) usage is less compared to all other developed country, but this paper is help full to increases the usage of Unmanned aerial vehicle (UAV). This Unmanned aerial vehicle (UAV) is multipurpose usage system and this can be used for military, find the people in high building, surveillance of coastal area with camera and also used for surveillance in crowed area.

This system is to reduce the manpower and finding the bomb in forest area by this system human death can be reduced, in drone have GPS and GSM it can send the latitude and longitude value to particular person.

II. PROPOSED SYSTEM

In this proposed system can used to tracking or surveillance of particular person or area. This can be done by this system. Surveillance of particular person can be done by

image processing. Person image is loaded to the processor and that processor is interface with Unmanned aerial vehicle (UAV), that person can be tracked by the government without any manpower and that person location can be find out with help of GPS and GSM. Camera is interface with processor for capture the image of that person and sends to higher official.

GPS is used to find out the location of particular area and also give the exact latitude and longitude of that place and GSM send the message of that location.

Using the same GPS location we also detect the location of vehicle and send to the cloud receive location with help of mobile application for theft detection method.

This can be implemented using the embedded system and it will overcome all other existing systems since it is the emerging technology all over the world. Due to this embedded technology, everything around us can be automated which in turn can reduce the intervention of human without the loss in quality.

III. SYSTEM OVERVIEW

The camera based automation system is developed a surveillance of particular person or area. Drone or Unmanned aerial vehicle (UAV) can be developed by following components

Propeller

Standard propeller is to take off the drone from ground surface to sky level and propeller speed can be controlled by human based on block present in the environment.



Fig 1.1

Motors

DC motors are used in drone for moving the drone forward, backward, up and down. RPM of DC motor is 25000 and voltage is 12volt. No load current is 1A and stall current is 10A.



Fig 1.2

Electronic Speed Controller

An electronic speed controller or ESC is an electronic circuit by the drive to vary an electric motor's speed, its direction and possibly also to act as a dynamic brake. It converts DC battery power into 3-phase AC aimed at driving brushless motors.

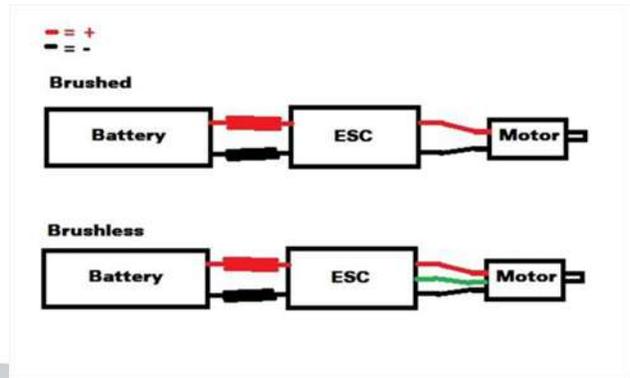


Fig 1.3

Flight controller

The flight controller input from receiver, GPS module, battery monitor, IMU and other sensors. It regulates motor speeds, via ESCs, to provide steering, as well as triggering cameras or other payloads. It controls autopilot, way points, follow me, failsafe and many other autonomous functions. The flight controller is central to the whole functioning of your UAV.



Fig 1.4

Battery

Lithium polymer (LiPo) batteries offer the best combination of energy density, power density, and lifetime on the market



Fig 1.5

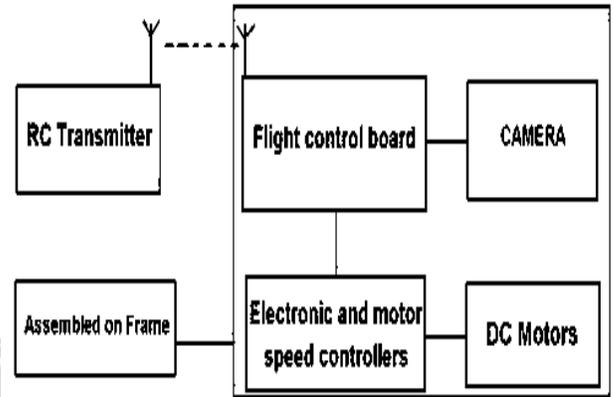
RF transmitter and receiver

RF is a radio frequency signal used to control the speed of drone and direction. An RF transmitter is used to send a radio frequency signal with the help of an oscillator, and an RF receiver receives the signal and decodes it to control the direction of drones.

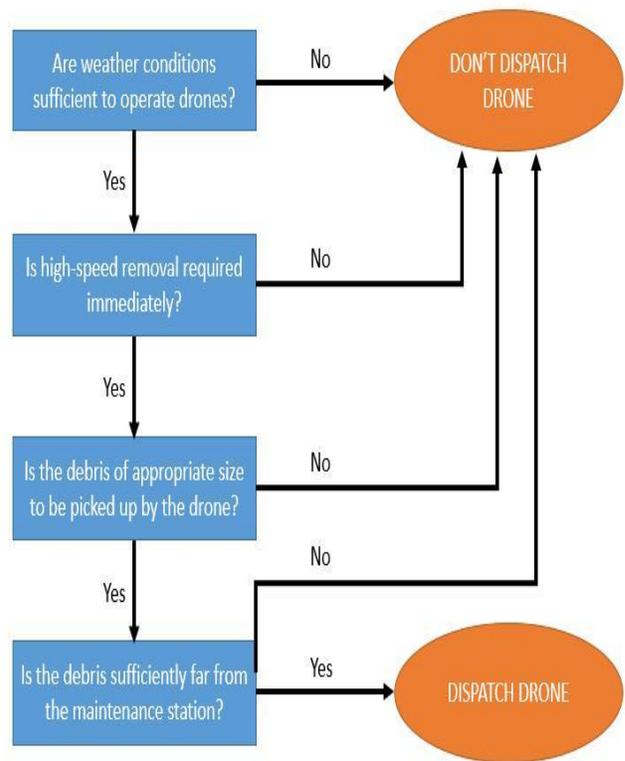


Fig 1.6

IV. BLOCK Diagram



FLOW CHART



V. EXPERIMENTAL RESULTS

The proposed system is practically experimented as a working model.



Fig. 5: Circuit diagram of the system

Fig. 6: Hardware implementation

Fig. 7: Output of the System

VI. CONCLUSION

This paper is helpful to Indian government and military for surveillance of any area without any human power. It also reduces the human death for finding the bomb in forest area with the help of metal detector. It is more efficient than previous method for surveillance.

ADVANTAGES

- ✓ Cost effective
- ✓ Assured safety
- ✓ Low Power consumption
- ✓ Better accuracy
- ✓ Efficient time consumption
- ✓ Reduce the chance of human error
- ✓ Sophisticated security

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