



Drone long distance remote control based on internet connection and embedded microcomputer

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Base station

The base station is responsible of controlling the drone motion based on python GUI which will give the drone the ability of take any action based on (Raspberry pi 3) , the procedure consist of applying PWM signals from the Raspberry pi3 IO to the flight controller to simulate the signals coming from the normal remote control and because of the ability of raspberry pi3 to connect from any place in the world using third party application this will give the system the ability to connect the drone threwh internet

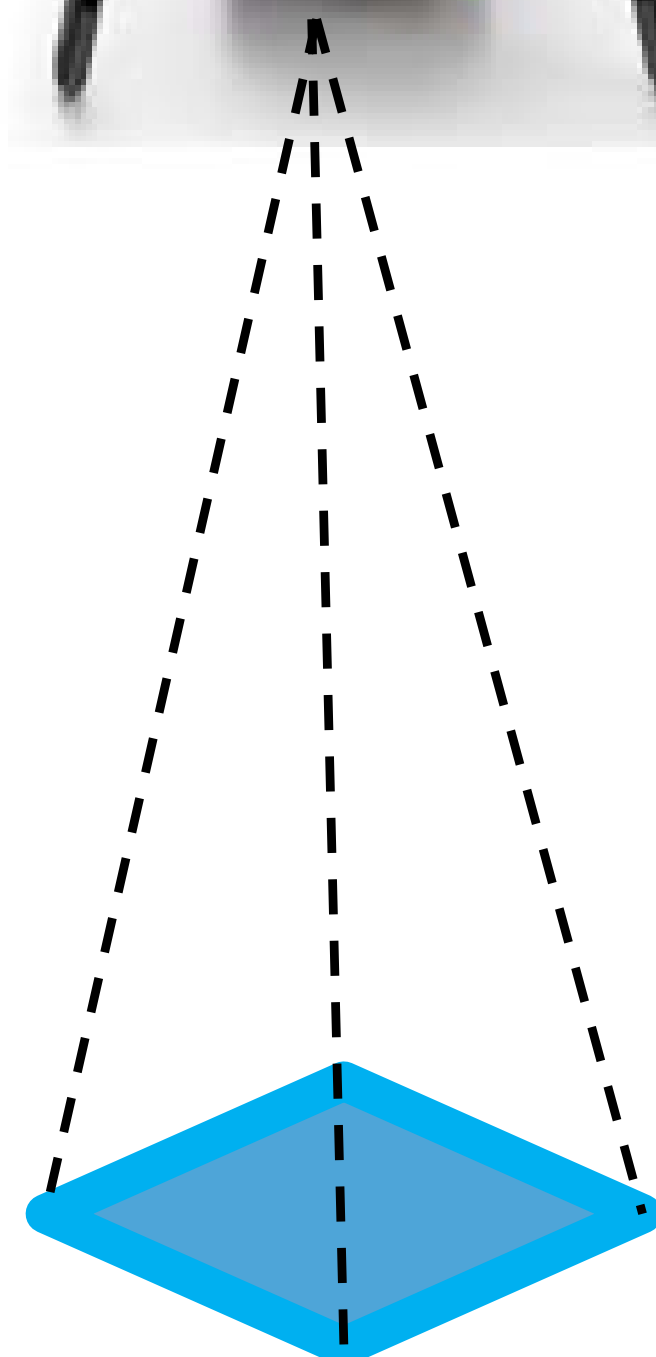
Drone structure consist of

Motors: to fly the drone
ESC: to supply the motors with the right current according to the control signal
Battery : as supply for the system
Flight controller : we used KK2 type to take signals from raspberry pi3 and apply PID control to the system
Raspberry pi3 : it is used as the main unit for communication and control signal.
Arduino : it is used for applying 5 volt signals because raspberry pi3 uses 3.3 volt and it is more suitable for control applications.

Internet connection



Detected object



Target detection

In our system we used target detection algorithm based on color detection and this is made using the moment of color calculations which takes the area of the color and calculate the center of color territory then it will track this point in any where in the scene, this procedure adds another contribution to our system , the **OPENCV** with **python** is used in the system