AUTONOMOUS DRONE

MOTIVATION :

Normally Drones are Remote Controlled. But when it comes to scan/analyse very large area, using Remote Controlled Drone is cumbersome. So why not make it AUTONOMOUS!!

VISION :

Autonomous Drone once given a task ex. To shoot (Video record) the specified area and comeback to initial position, should be able to do such tasks successfully. Such Drones are very useful in scanning and analysing very large area such as large farms, deserts, oceans, etc. where Remote controlled Drones are useless because of Range factor and/or due to Real time controlling of Drone manually when it's not needed.

OBJECTIVE :

To design and make an AUTNOMOUS DRONE which is able to stabilize itself in the air and is able to Record the specified area with attached camera and to come back to its initial position when the job the done.

BREIF IMPLEMENTATION STEPS:

1st step is to build a Quad-Copter. With our XLR8 experience, lots of web tutorials we will make the the Quadcopter which will be able to take load of battery, Arduino board and lots of other sensors.

2nd step is to make it self balancing. Which includes a functional quadcopter which is able to balance itself. This can be achieved with the running time data from IMU, the ESC will control the Propellers' speeds and hence gives stabilization to quadcopter. This step is highly challenging and we'll require Mentor's guidance.

3rd step is mainly coding step, which includes collecting data from attached sensors, and to determine the current position, thereafter according to the preloaded program it should be able to fly over the specified area and then it should come back to initial position.

At last it just remains to attach a camera and a storage device.

WHAT WE EXPECT TO LEARN :

Working with microcontrollers and using different sensors.

Extensive Coding.

APPROX COST : (in Rs)

Arduino Board	-	1500
IMU	-	5000
ESC	-	2700
PID	-	<Price Unknown>
Chassis, Brushless Motors, Pusher Puller Propellers, Battery,etc.	-	Around 8000

Including lots of other things which we still don't know the Approx. price may go higher than Rs. 20000.

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