CSE2040 – Drone Applications, Components and Assembly

Lab 2 - Drone Assembly

Meher Shrishti Nigam - 20BRS1193 – E1

AIM: To list the steps of assembly of the S500 Drone.

PROCEDURE:

The following is the procedure to assemble the S500 Drone body.

Carrier (Battery Mount):
1. Slide the rod inward while inserting the rubber loops into the little rings.
2. The bottom plate is fastened to the rods using M2.5X6 and M3X4 bolts.
3. Attach the plate with M2.5-P0.45X5 bolts to the battery mount brace.
4. Apply enough force to the two rods to fit the battery mount on them.

Arms:
1. Use M2.5X8 bolts to bolt the four arms the bottom plate.

Landing gear:
1. The four legs are attached to the bottom plate with M2.5X8 bolts.

Upper Plate:
1. Use M2.5X6 bolts to bolt the upper plate onto wedges made in the arms for it to fit.

The following is the procedure to assemble the S500 circuitry.

Motors:
1. Attach the motor mount to the device.
2. Attach the motor's mount to the frame arm using M3X7 bolts.

Electronic Speed Controller:
1. Solder the four ESC's to the appropriate markings on the bottom plate of the drone, according to positive and negative.
2. Attach the three ends of the ESC to the motors. Adjust as necessary.

Power Management Board:
1. Solder the Power Management Board to the bottom plate of the drone.

GPS:
1. Assemble the GPS mount.
2. Affix the GPS module on top of the GPS mount.

PixHawk:
1. Assemble the plastic flexible case of PixHawk and attach it to the upper plate with double sided tape.
2. Attach the PixHawk on top of it
3. Attach the GPS's cable to the GPS port.
4. Attach PWM pins to the appropriate PixHawk ports
5. Connect the buzzer to the appropriate port.
6. Connect the radio receiver to the appropriate port using provided cable.

Lastly, we can attach the propellors (according to clockwise and anti-clockwise) and the battery, which is kept in the carrier. Next, we can calibrate out drone.

CONCLUSION:

Thus, we have listed all the steps required to assemble the S500 Drone.