FACTORS AFFECTING THE DRONE

1. **FLY TIME**

DRONES ARE USALLY LIMITED IN FLY TIME AS THEY ARE POWERED BY BATTERIES. DRONE FLYTIMES ARE USUALLY LIMITED. FOR INCREASING THE FLY TIME, WE MAY THINK TO INCREASE THE CAPACITY BY INCREASING THE BATTERY CAPACITY BY INCREASING THE NUMBER OF BATTERIES. BUT THAT HAS AN IMPACT TOO, INCREASING THE BATTERY CAPACITY INCREASES THE WEIGHT OF THE DRONE REDUCING THE PAYLOAD OF THE DRONE.

**SOLUTIONS:**

1.AN OPTIMAL SOLUTION FOR INCREASING FLY TIME IS TO INCREASE THE CAPACITY WITHOUT INCREASING THE WEIGHT OF THE BATTERY. RESEARCHS ARE BEING CONDUCTED IN THE METALLURGY TO INVENT A NEW COMBINATION OF BATTERY COMPOUNDS. THE INCREASED USAGE OF LI-ION BATTERIES ARE SEEING INCREASE IN THE FLYTIME OF THE DRONES.

2**. BATTERY SAFETY AND BATTERY LIFE TIME**

BATTERIES ARE PRONE TO HEAT. IN RECENT TIMES, THERE HAVE BEEN REPORTS OF BATTERY EXPLOSIONS IN THE ELECTRONIC VEHICLES DUE TO OVER HEAT. THESE WERE REPORTED DUE TO USAGE OF LI-ION BATTERY.

**SOLUTION**

THE USAGE OF SOLID STATE BATTERIES, THE LIQUID ELECTROLYTES ARE REPLACED BY A SOLID COMPOUND. SOLID STATE BATTERIES ARE MADE TO BE NON-FLAMMABLE EVENTHOUGH WHEN THEY TEND TO HEAT WHILE PROLONGED USAGE. ALSO IT PERMITS DENSER AND LIGHTER BATTERIES WITH BETTER SHELF-LIFE DUE TO INCREASED SELF-DISCHARGE.

DUAL CARBON BATTERIES WITH THE ELECTRODES CONSISTING OF CARBON MATERIALS. THEY ARE SEEN AS AN UPCOMING REPLACEMENT TO EXISTING BATTERIES AS THEY ARE CONSIDERED TO BE LOW COST, SAFE TO USE, SUSTAINABLE, ENABLE FAST CHARGING.

**3.STABILITY**:

ANOTHER MAJOR CONCERN IN DRONE SYSTEMS ARE THEY ARE TEND TO BE UNSTABLE WHILE FLYING DUE TO THE WEATHER AND THE ATMOSPHERIC AIR, WHICH COULD RESULT IN DRONE BEING CRASHED INTO NEAR BY OBJECTS AND SURVILLENCE DRONE COULD POTENTIALLY BE UNABLE TO CAPTURE THE REGION CLEARLY.

DRONES MIGHT ALSO EXPERIENCE INSTABILITY DUE TO WEIGHT DISTRIBUTION IN THE DRONE

ANOTHER FACTOR THAT AFFECT DRONES ARE THE DIFFERNCE IN THE RPM OF EACH ROTORS OF THE DRONE INCASE OF MULTIPLE ROTOR DRONES

**SOLUTION**

1. STABILITY OF DRONE CAN BE ACHIEVED BY EQUALLY DISTRIBUTING THE WEIGHT AND PAY LOAD IN THE DRONE.
2. STABILTIY CAN ALSO BE ACHIEVED BY REDUCING THE RPM DIFFERENCE IN THE ROTORS
3. ADDITIONALLY, DRONE SYSTEMS CAN BE FITTED WITH LIQUID WEIGHT STABILIZER THAT CAN BE USED TO STABILIZE THE DRONE