Angad singh - 102215345 Tanish bhatia - 102215058 Kartikry agnihotri -- 102203257

EXPERIENTIAL LEARNING CENTRE
TIET, PATIALA

SkyMinds
MULTI MOBILITY DRONE

Introduction

A multi-mobility drone is essential because traditional drones are limited to flight. In contrast, multi-mobility drones offer a significant advantage by transforming into a ground-based buggy. This capability is invaluable for search operations in hard-to-reach areas, military applications, and navigating challenging terrains where traditional drones cannot operate effectively.

Objective

- Versatile Hybrid Design: Seamlessly transitions between aerial and ground-based travel.
- Aerial Mobility: Capable of agile flight, navigating complex airspaces with ease.
- Ground Mobility: Functions as an off-road buggy, handling rough terrains effectively.
- Compact and Durable: Built to endure off-road conditions while maintaining a sleek, high-performance profile.
- Advanced Technology: Integrated with cutting-edge navigation, communication, and safety systems.

Stages

- Ideation
- Discussion With Mentors
- Circuit Designing

- Receiver Circuit
- Transmitter Circuit
- Testing of both Circuit

- GPS Connection
- Camera Setup
- App UI/UX
- Firebase Connection
- Turning Mechanism

- Testing
- Optimization
- Improvement

Our Drone Features

HEIGHT 600m

SPEED 30km/hrs

BATTERY 100%

Multi-Mobility

Navigation System

Live Recording

Our app features

Live Video Streaming

Flutter Development

Firebase Intergration

GOOGLE MAPS

Results/Findings

PROP TEST

S.no	Prop Size	Blade	Thrust
1	5149	Tri blade	609 g
2	5045	Two blade	607 g
3	6042	Tri blade	1019 g
4	6045	Two blade	916 g

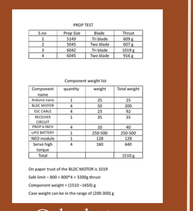
Component weight list

Component name	quantity	weight	Total weight
Arduino nano	1	25	25
BLDC MOTOR	4	50	200
ESC CABLE	4	23	92
RECEIVER CIRCUIT	1	35	35
PROP 6 INCH	4	10	40
LIPO BATTERY	1	250-500	250-500
NEO module	1	128	128
Servo high torque	4	160	640
Total			1510 g

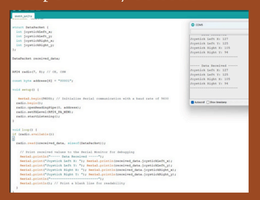
On paper trust of the BLDC MOTOR is 1019

Problems faced

Lipo Battery Selection



Calculations



Connection with NRF Module

Checking current rating

CAD Model