

# DRONE TECHNOLOGY AND SYSTEMS

Internship



**Jet Aerospace**  
Aviation Research Center  
Palakkad | Kochi | Coimbatore | Dindigul

# TEAM MEMBERS

SURAJ V.

AKSHAY

FEBIN C. SUNIL

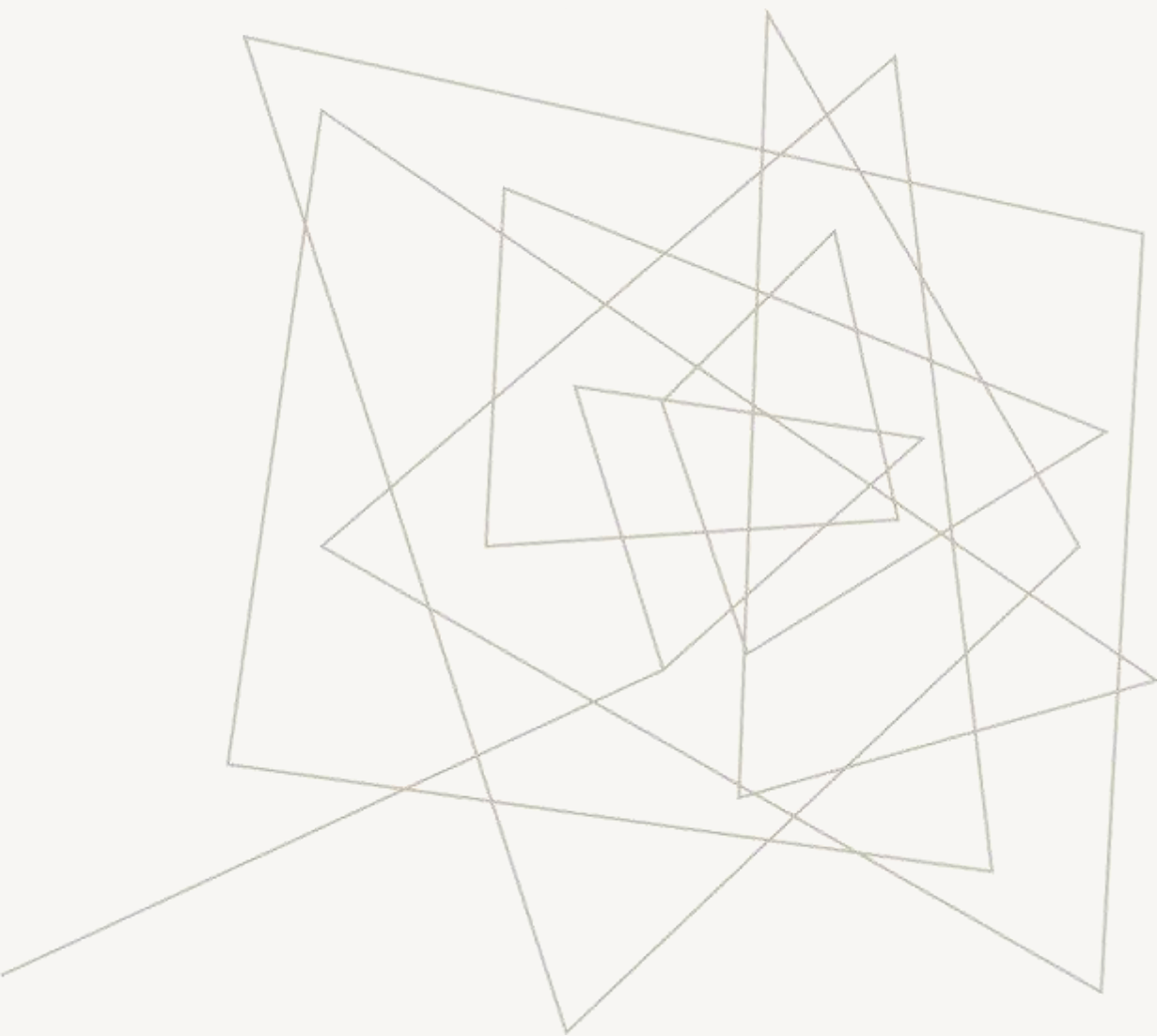
NITHIN THOMAS

BASIL THOMAS

SWAROOP SENADHIPAN B

AJIN ANTONY

HARIKRISHNAN P.M



# CONTENTS

1. Introductions
2. Glider
3. Fuselage
4. Tail
5. Wings
6. UAV
7. Drone
8. Drone & fixed wing UAV parts
9. Sensors
10. Conclusion

# INTRODUCTION



# GLIDER

Glider can be divided into 3 main parts:

- Fuselage
- Wing
- Tail

# FUSELAGE

- main body of the glider
- 2d frame
- cambered and in the middle portion,
- wing is attached around the position where the camber is maximum

# TAIL

- attached at the rear end of the glider
- composed of 2 parts : horizontal & vertical stabilizer
- provides stability and control to vertical movement of nose



# WING

- Most essential part of a plane
- Lift is generated by difference in curvature of upper & lower parts
- Weight of the plane is balanced by coinciding CG with centre of pressure
- Center of gravity of model is balanced by adding clay at the tip of the nose



# UAV

- Unmanned Aerial Vehicle
  - Main parts : Datalink, Avionics, Radar, Flight Control Systems, Gimball camera
  - Applications : Target & Decoy, Recon, Combat, Research & Development, Logistics
  - Functions : Remote sensing, transport, scientific research, armed attack, search & rescue
- Global Hawk UAVs:
  - Vehicle test controller
  - Mission Control Element
  - Launch & Recovery Element
  - Launch Systems : Pnuematic catapult, Air launch, JATO/RATO launch, Runway launch



# DRONES

- DYNAMIC REMOTELY OPERATED NAVIGATION EQUIPMENT
- USES: AGRICULTURE, MILITARY, DOMESTIC, PHOTOGRAPHY, DELIVERY ETC.
- DISADVANTAGES: COSTLIER THAN MANNED VEHICLES, LIMITED ABILITIES, MORE HARDWARE COMPLEXITY

# DRONE & FIXED WING UAV PARTS

## TRANSMITTER USED:

- FS-i4x 6 channel 2.4 GHz
- FS-i6s 10 channel 2.4 GHz

## RECEIVERS USED:

- FS-iA6 receiver
- FS-iA10B 10 channel receiver

## MOTORS USED:

- Brushless DC motor
- TowerPro SG90 servo-motor

## BATTERIES USED:

- LiPo 3 cell battery (11.1 V)

## CONTROLLER USED:

- LiPo 3 cell battery (11.1 V)



# SENSORS

## SENSORS USED:

- DHT SENSOR : USED TO MEASURE HUMIDITY LEVEL AND TEMPERATURE
- ULTRASONIC SENSOR: USED TO FIND THE DISTANCE OF AN OBJECT/OBSTACLE BY USING ULTRASONIC WAVES
- ACCELEROMETER: USED TO DETECT THE ACCELERATION OF AN OBJECT
- GPS: USED TO LOCATE THE COORDINATES OF A DEVICE
- ESP32 MODULE: LOW POWER SYSTEM ON CHIP MICROCONTROLLER WITH INTEGRATED WI-FI









# CONCLUSION

Abstract geometric lines in a light gray color, forming various polygons and overlapping shapes on the left side of the slide.

# THANK YOU