

Team Albatross

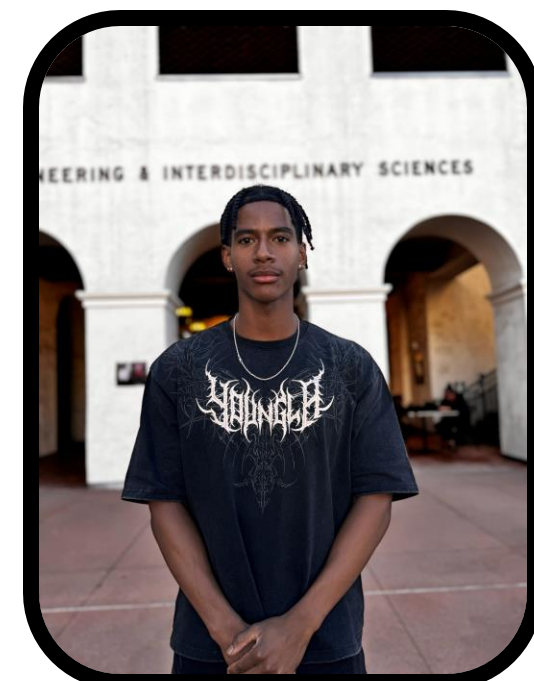
Mechanical Engineers



Paul Kauvaka
Materials



Ameko Birdsall
Controls



James Cook
Systems



Mitchell Prokey
Structures

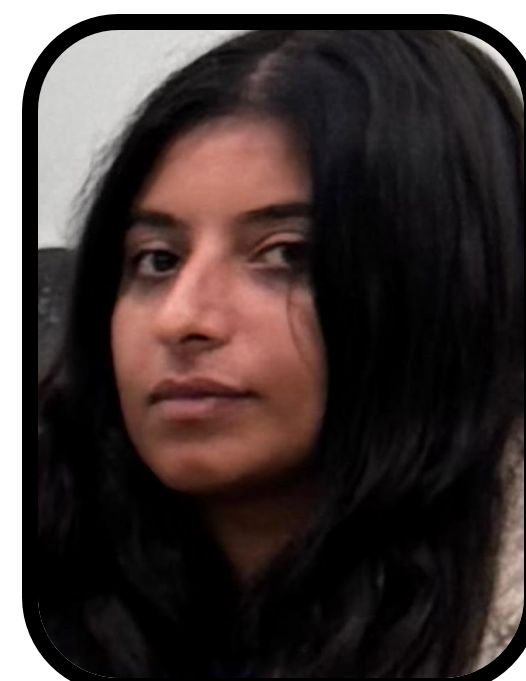


Gilbert Trinh
Team Lead

Aerospace Engineers



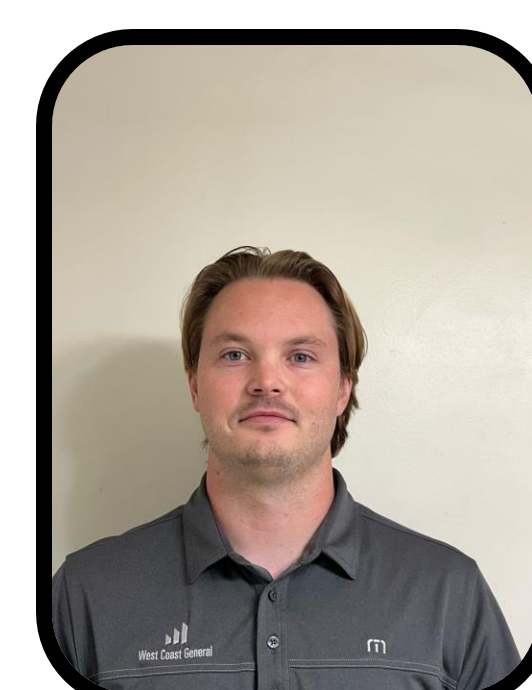
Natalie



Rina



Anthony



Wyatt



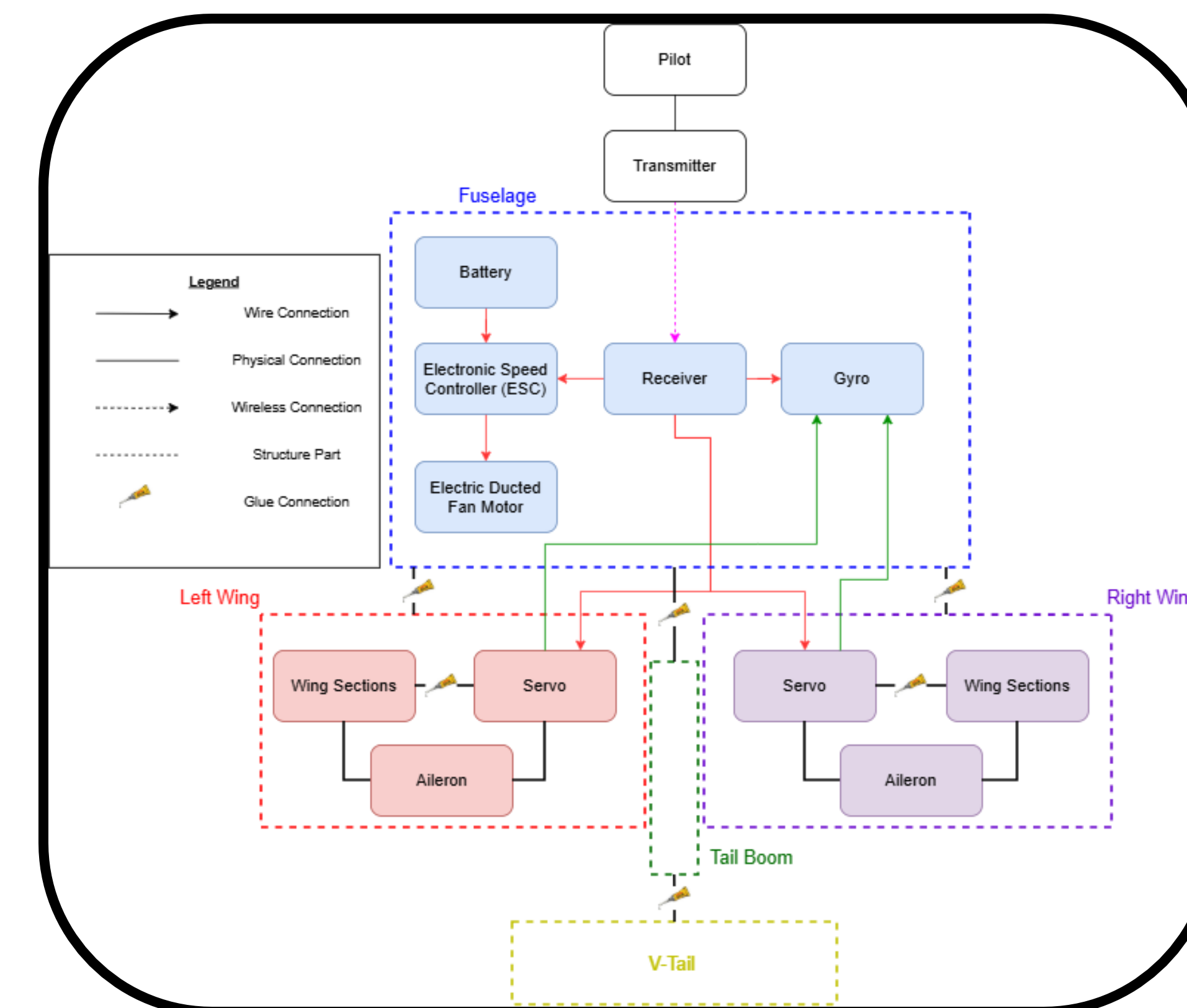
Dario

Project Overview

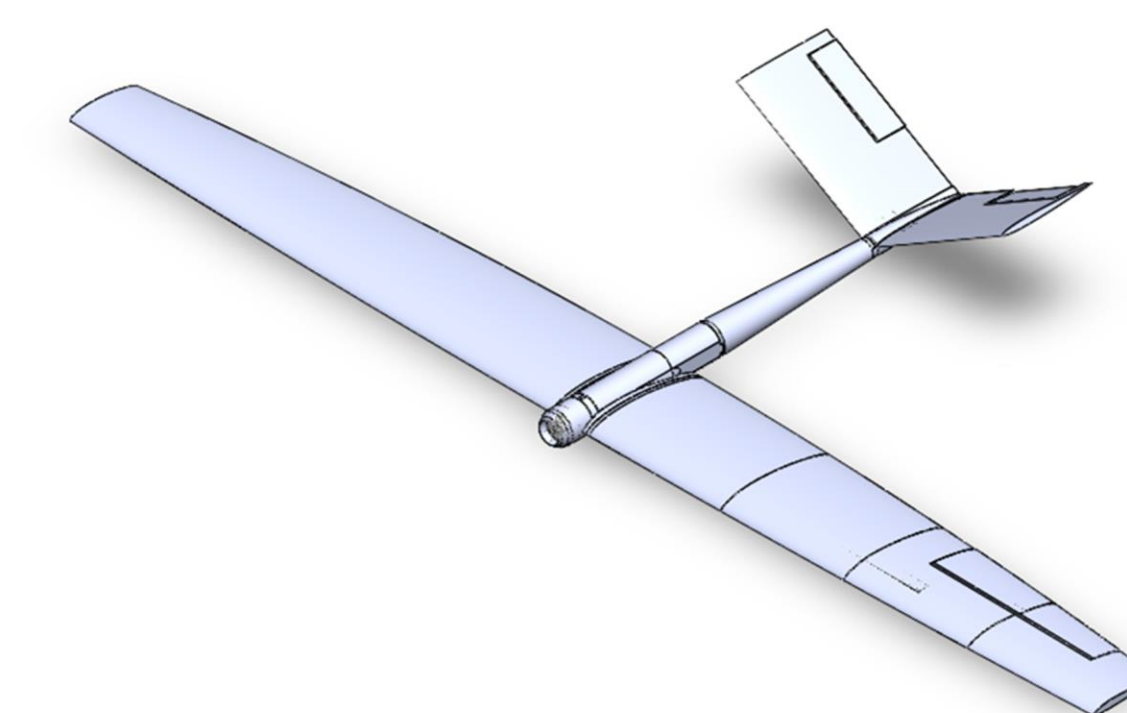
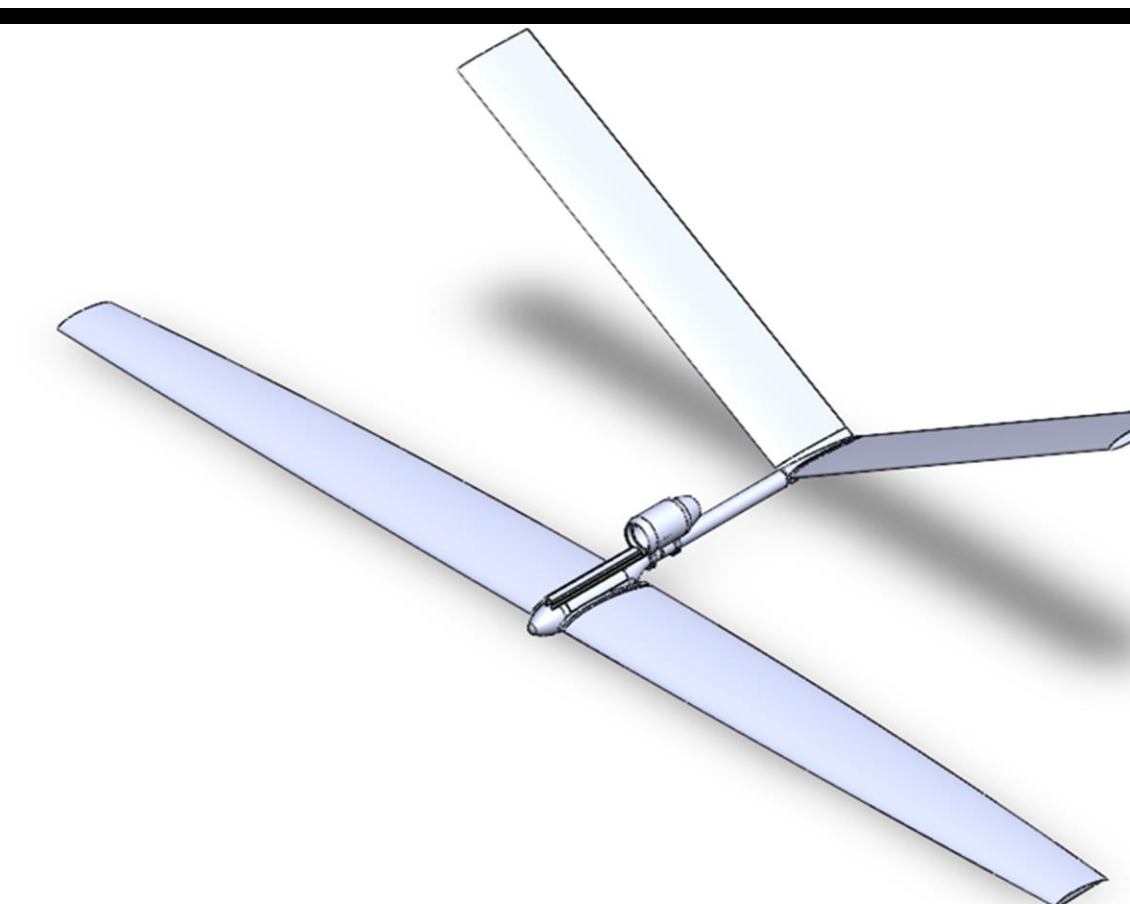
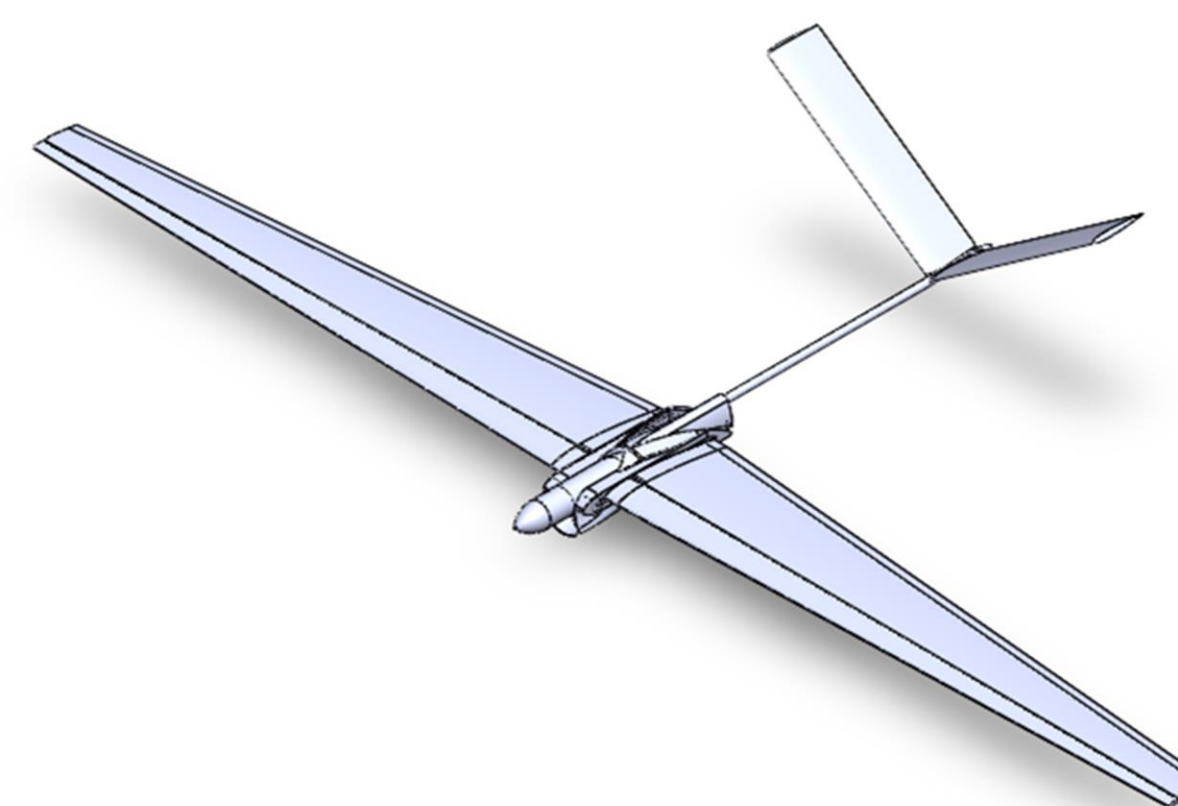
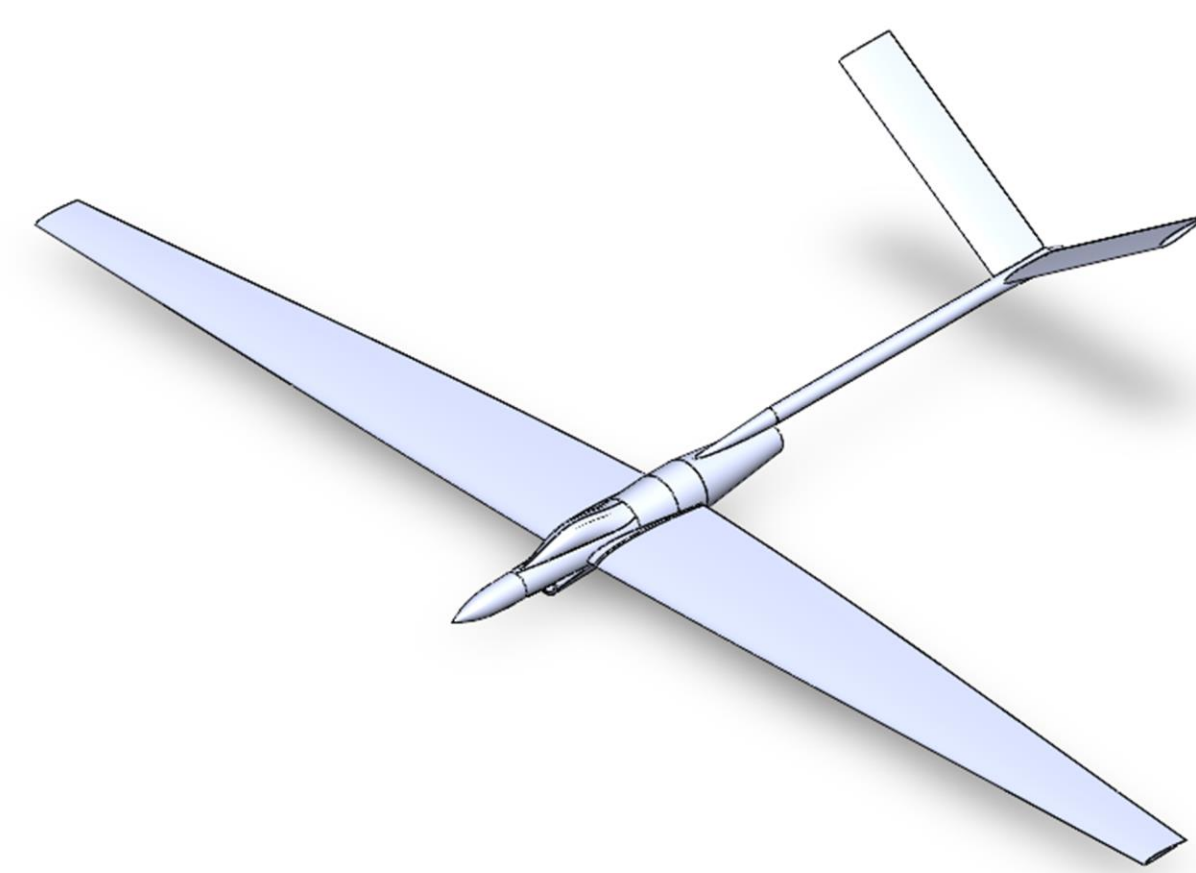
The problem addressed in this project is designing a **fully functional 3D-printed fixed-wing aircraft** that meets strict competition constraints while maintaining reliable flight performance. The aircraft must remain under 55 pounds, sustain powered flight for at least eight seconds, operate within a limited flight area, and maintain stability and structural integrity throughout operation. These requirements create a complex engineering tradeoff between minimizing weight and ensuring sufficient strength and control.

The goal of this project is to develop a competition-ready aircraft that effectively balances these constraints through an optimized design. This includes creating a lightweight yet durable structure using primarily additive manufacturing, incorporating a stable and controllable flight configuration, and ensuring manufacturability and assembly feasibility. The project follows a full engineering lifecycle design, analysis, fabrication, and testing to deliver a reliable aircraft capable of consistent performance during competition flight trials.

System Design



Prototypes



V1: Concept Design

Design Features:

- Electric 70mm Ducted Fan
- V-Tail Design
- AG24 Airfoil
- ASA Filament

V2: Condor Model

Design Changes:

- Decreased Wingspan
- Decrease in weight
- Added Wing Flaps
- Better CG Stabilization

V3: Dart Model

Design Changes:

- New E216 Airfoil
- New 40mm Electric Ducted Fan
- Decreased Aircraft Size/ Total PLA Aero Filament

V4: Dart 2.0 Model

- #### Design Changes:
- Switched to Propeller Design
 - Added Tail Stabilizers
 - Added Spar Material
 - Decrease in Aircraft Change

