



SAE Aero West® Heavy Lift Competition Team – Eaglenautics

Anthony Pirone, Evan Stuart, Jessica Millard, Nathaniel Scott
Department of Aerospace Engineering, Department of Applied Aviation Science,
Embry-Riddle Aeronautical University, Prescott, AZ,



Objectives

Design, build and fly an RC aircraft with maximum number of passengers and luggage. Eaglenautics focuses on computer-based simulations such as Computational Fluid Dynamics (CFD) and Aircraft Optimization tools to validate the design.

Current Direction

- Aero team- Constraint Analysis
- Propulsion team – Building test rig to choose optimal power system
- Structures team – fuselage + payload compartment design

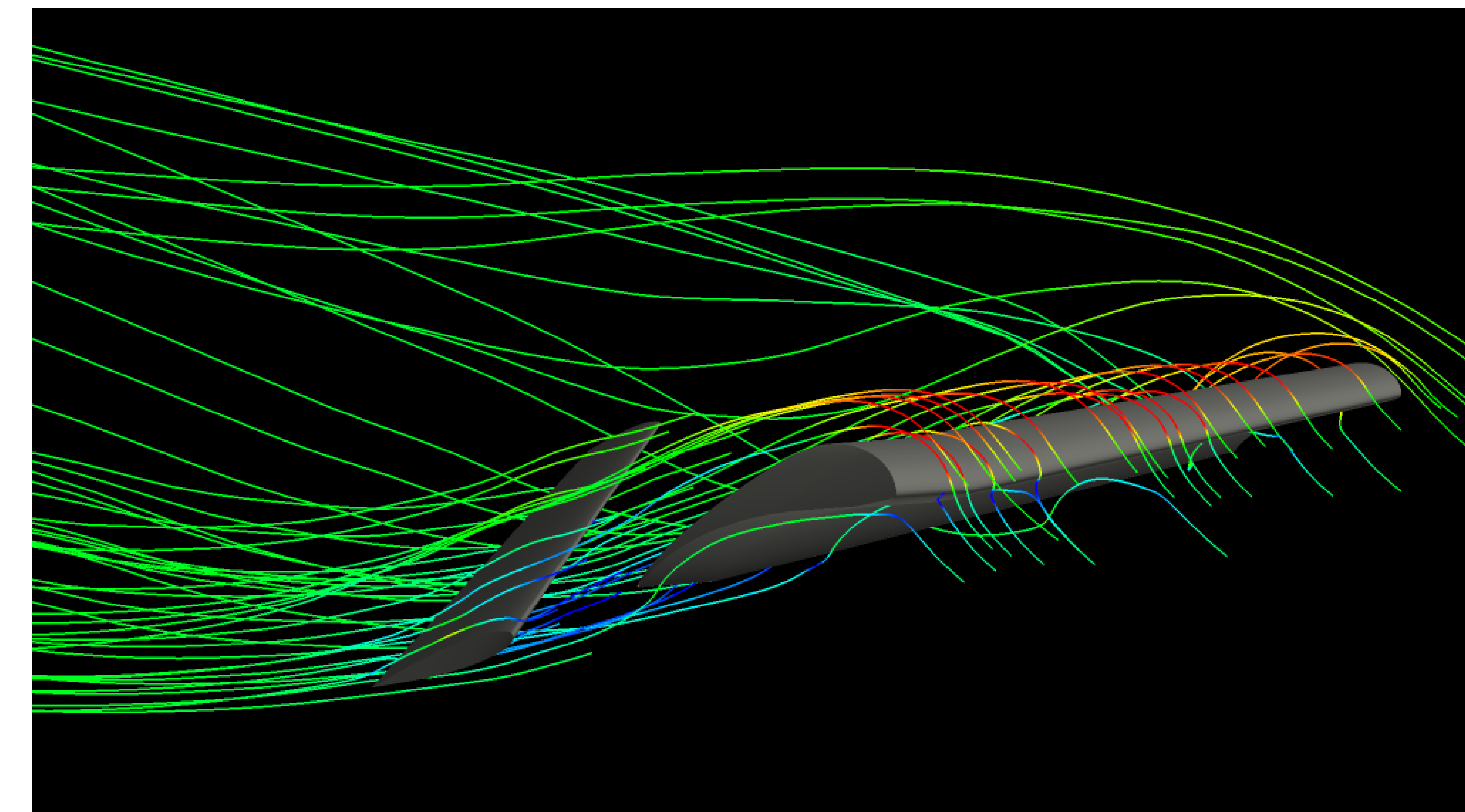


Figure 3: V-Tail CFD Analysis

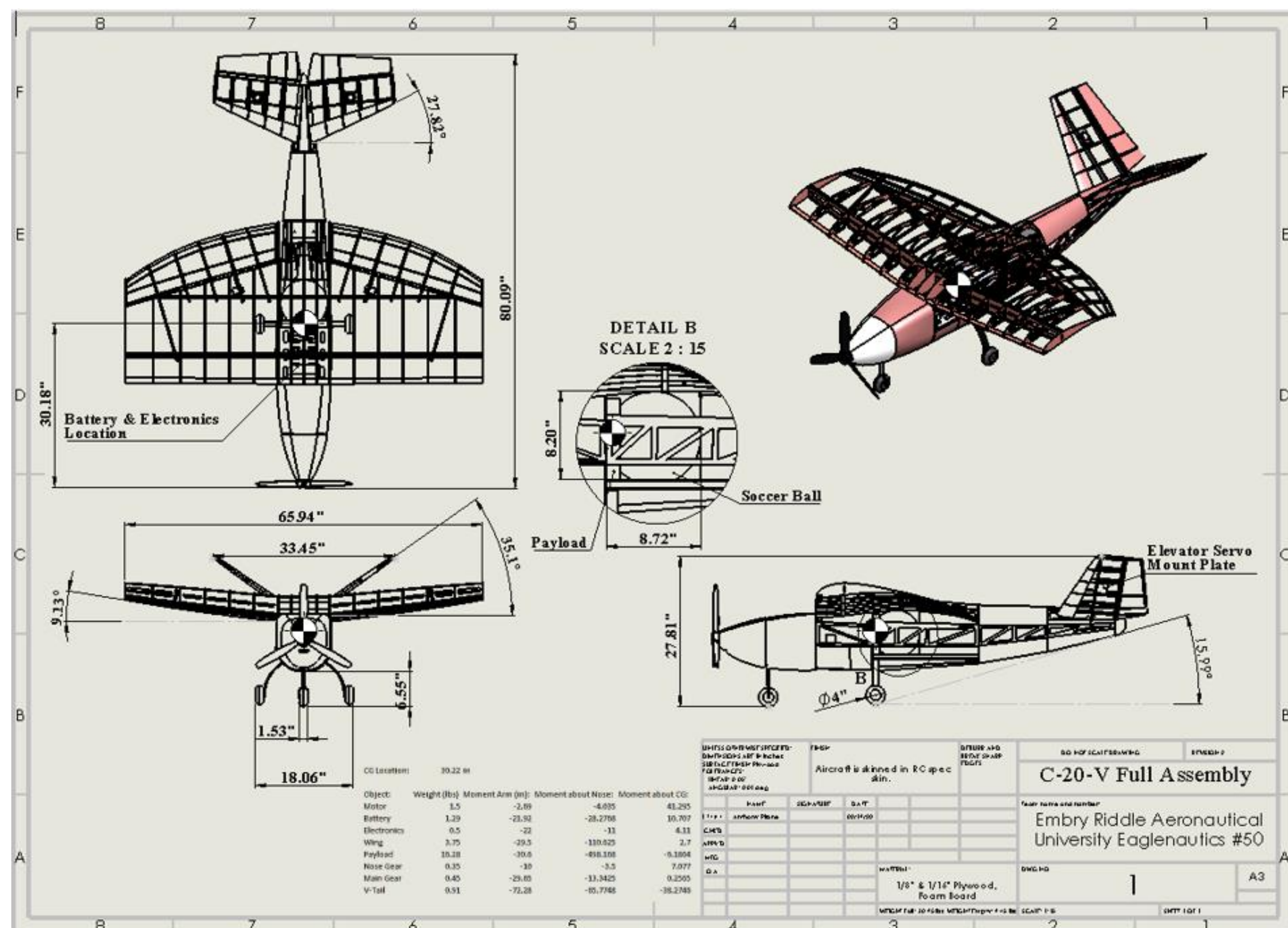


Figure 1: 2020 Competition Plane 3-View

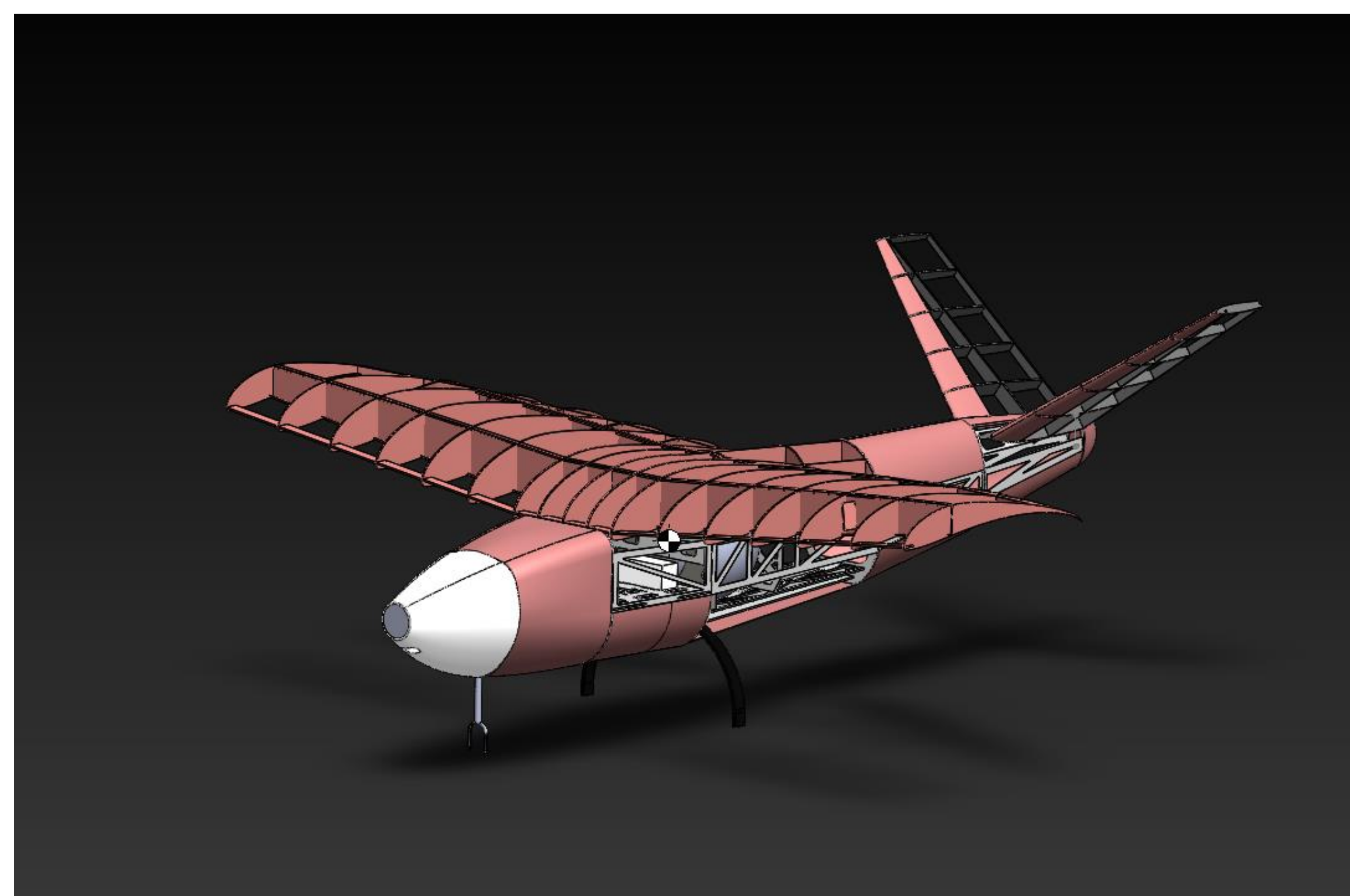


Figure 2: 2020 Competition Plane Design

General Requirements

- Maximum total gross takeoff weight – 55lbs
- Maximum wing span – 6 ft
- Power limit – 1000W
- Power Source - One electric motor and 6 cell Lithium Polymer battery
- Carbon Fiber Propeller
- One electric motor and a 6 cell LiPo battery

Expected Outcomes

The primary goal for ERAU SAE Aero West® team is gain real-life experience in overcoming current aviation industries' challenges and understand engineering process while working as a group.

Payload Requirements

Dedicated Passenger
-Soccer Ball



28" Diameter

Average Luggage Weight per passenger: 8 oz. (1/2lb)

- Luggage and Luggage Plates are secured for flight

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