MQ-9A AIRCRAFT AUTOMATED TAXI / PARKING ENABLING TECHNOLOGY
TEAM MAVERICK
SPONSORED BY GENERAL ATOMICS AERONAUTICAL SYSTEMS

General Atomics · Maverick · San Diego State University · College of Engineering

PROJECT OVERVIEW

Team Maverick delivers an autonomous taxiing and parking system for a General Atomics MQ-9A drone. Team Maverick's system incorporates taxiway line tracking, object distance detection, and GPS mapping. This allows a 1/10th scale drone to go from the start position on a taxiway to the drone's parking destination without being driven by a human operator. A sensor suite of GPS, Depth Camera, and Servo Motor Driver will allow the system to navigate autonomously on a taxiway similarly to the way an MQ9-A drone taxis to its parking destination. The drone will rely on distance detection using the camera's depth functionality to track the proximity of any objects in its pathway. If an object is detected too close to the drone, the system will stop the drone and wait for any objects to be cleared from its path.
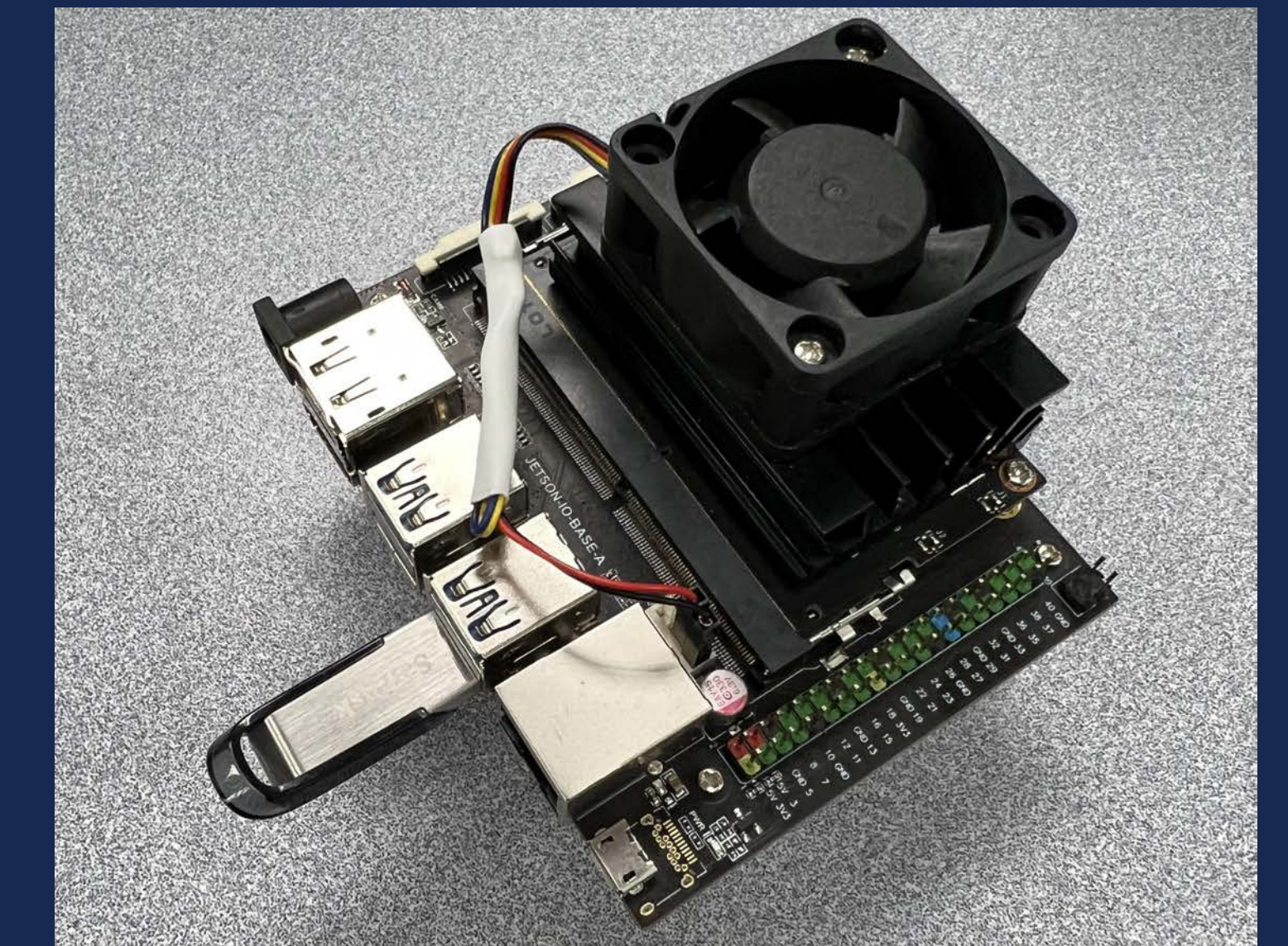
SYSTEM LEVEL DIAGRAM
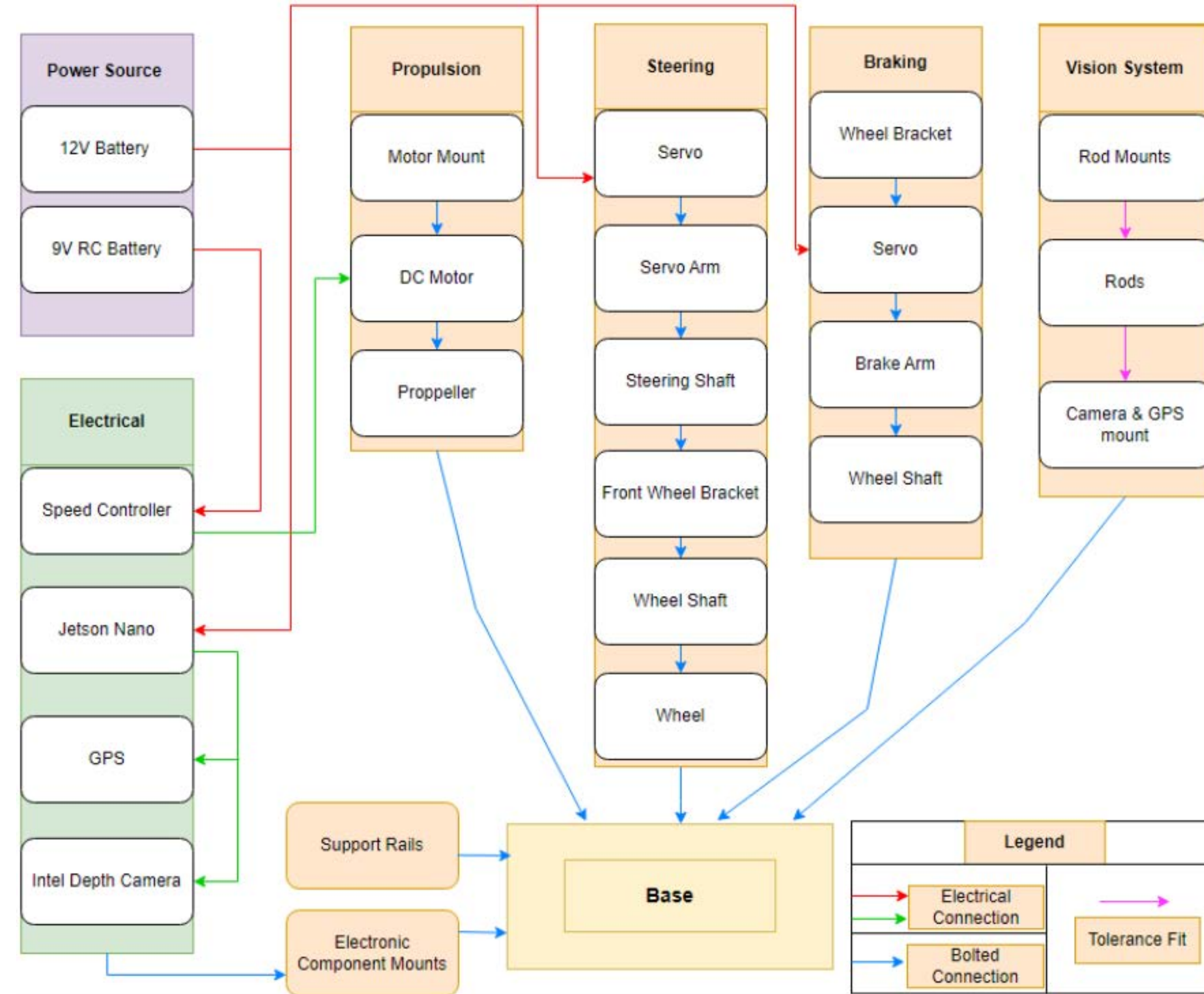
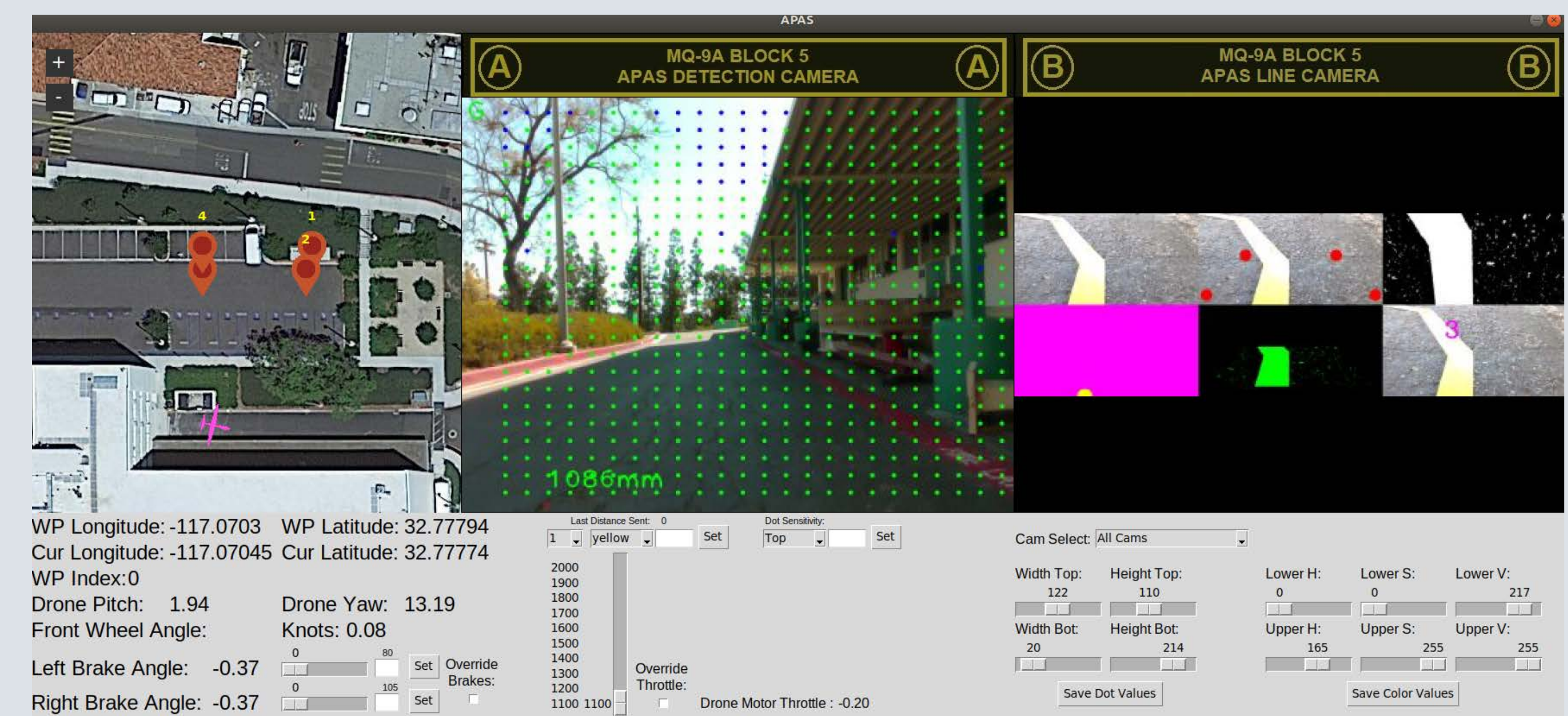## FINAL ASSEMBLY
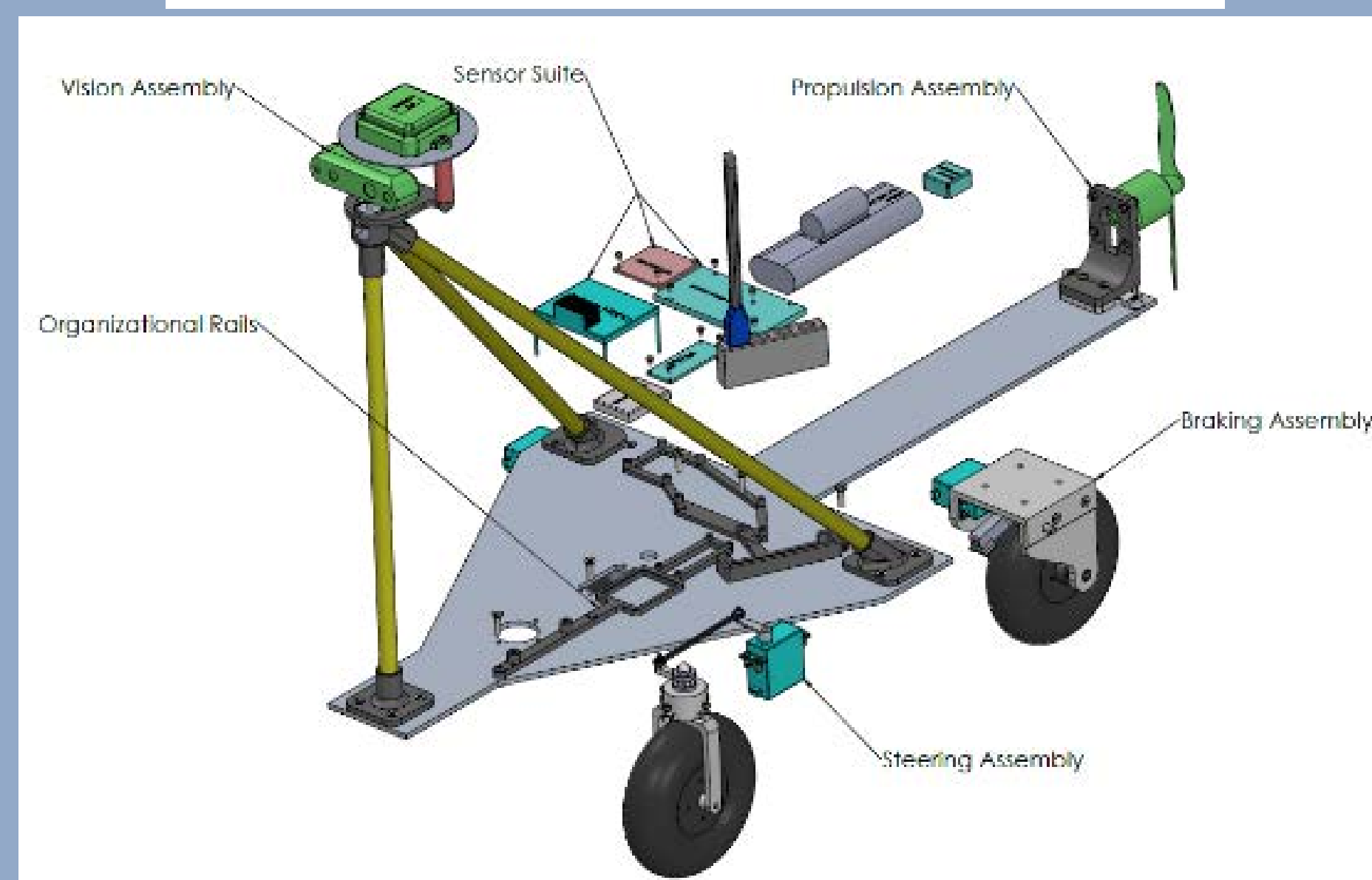
HARDWARE COMPONENTS

INTEL REALSENSE D435I

Jetson Nano Main CPU

FIRMWARE

GRAPHICAL USER INTERFERENCE
GPS WAYPOINT, DISTANCE DETECTION, LINE TRACKING

OUR TEAM

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Paul Baker   Ezra Garcia   Saja Alallao   Dj Younkin   Alex Johnson

FIRMWARE TESTING

Line Tracking

The drone will track the the yellow line which will control the steering

Object Distance Detection

The drone will stop if there is any object detected on its way

ACKNOWLEDGEMENT

SPRING 2023