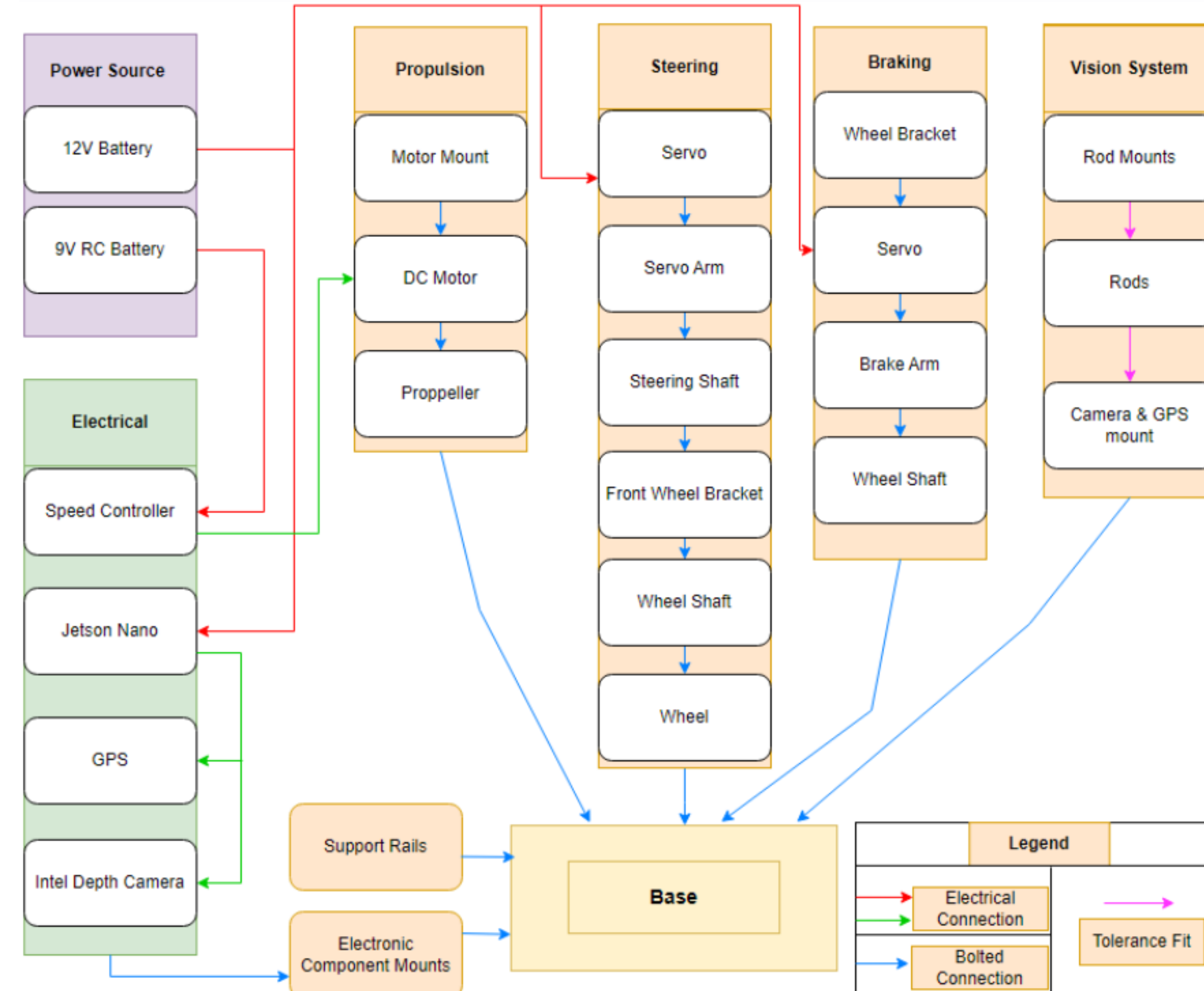


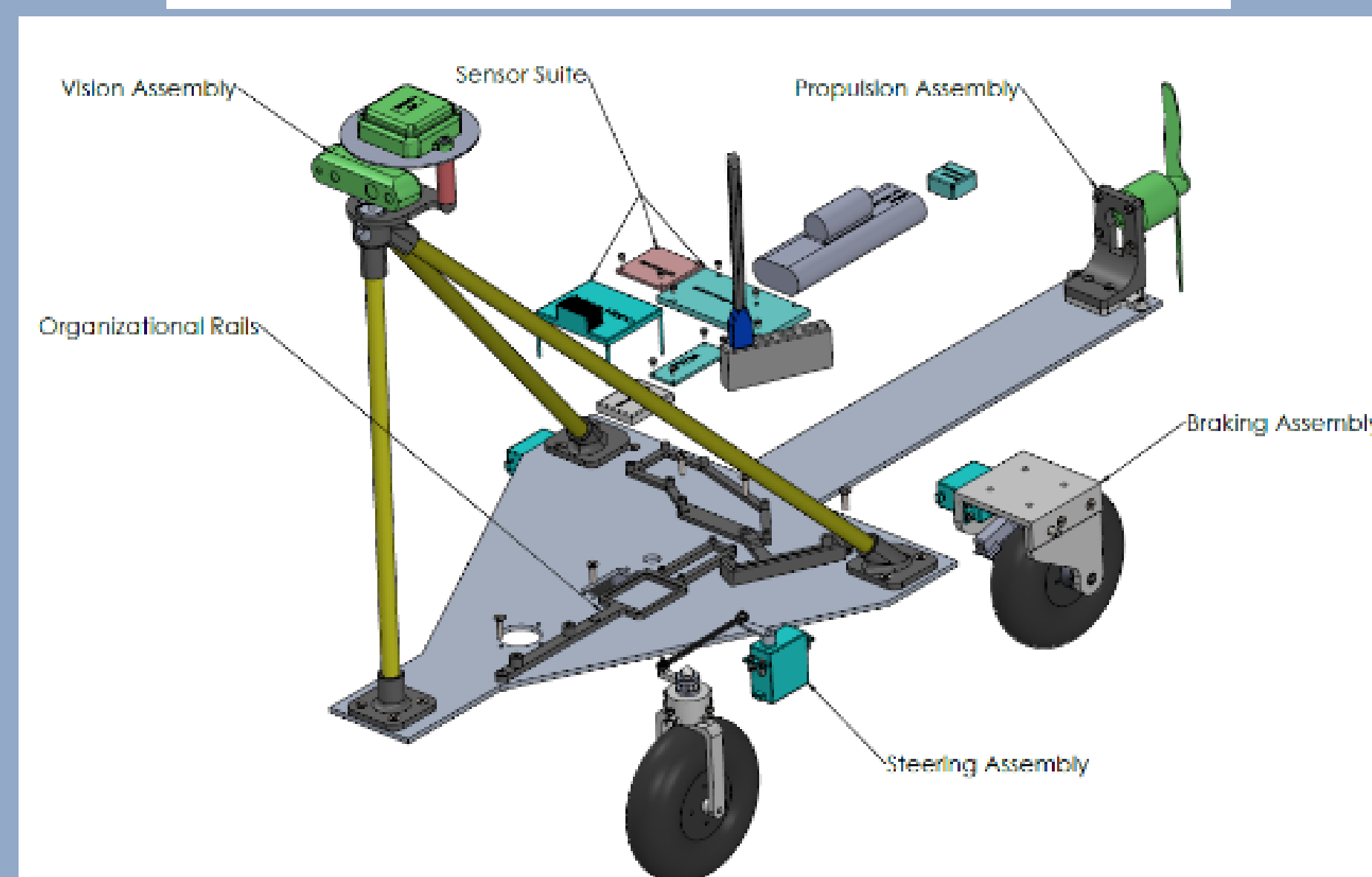
PROJECT OVERVIEW

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.

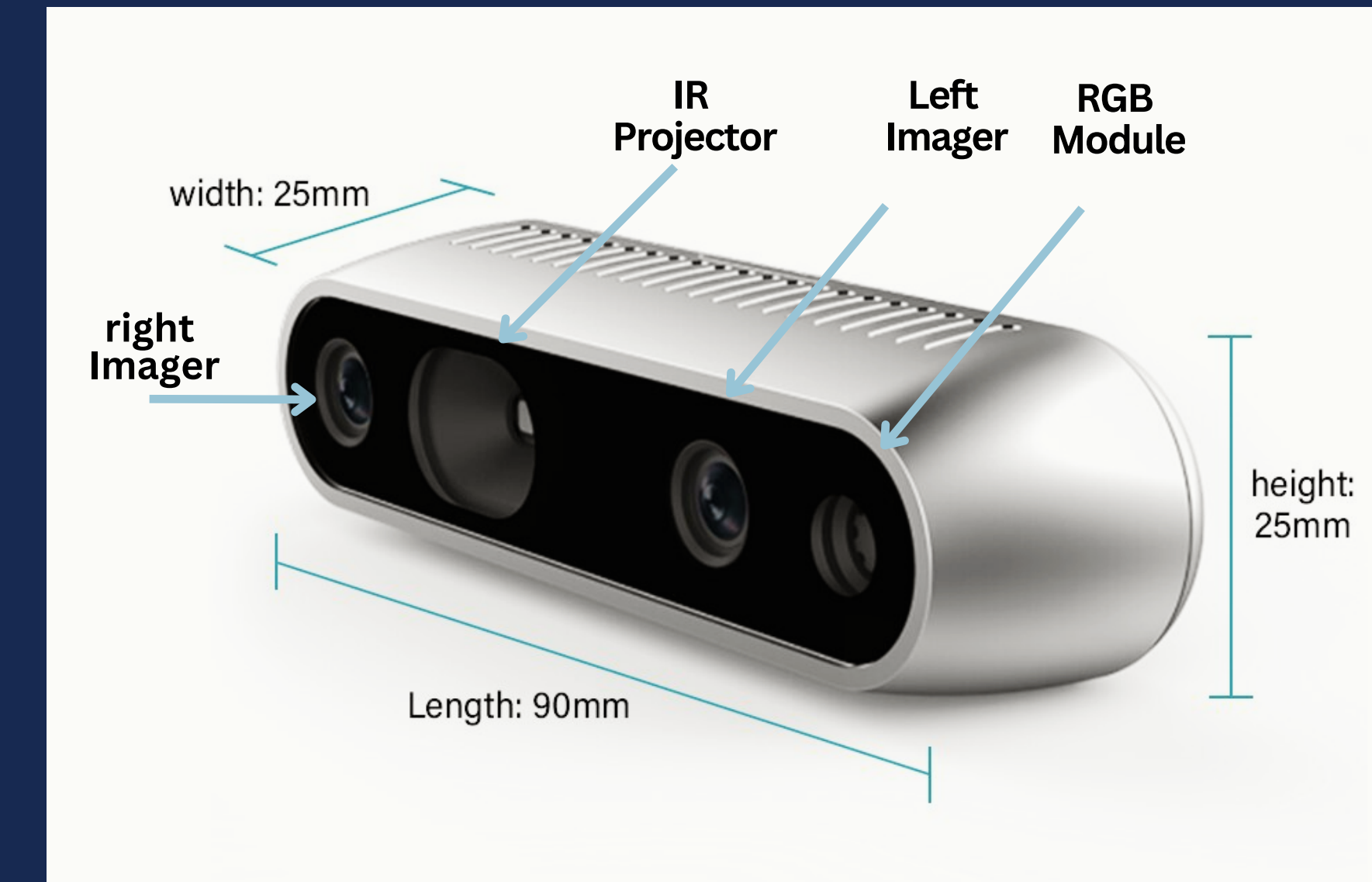
SYSTEM LEVEL DIAGRAM



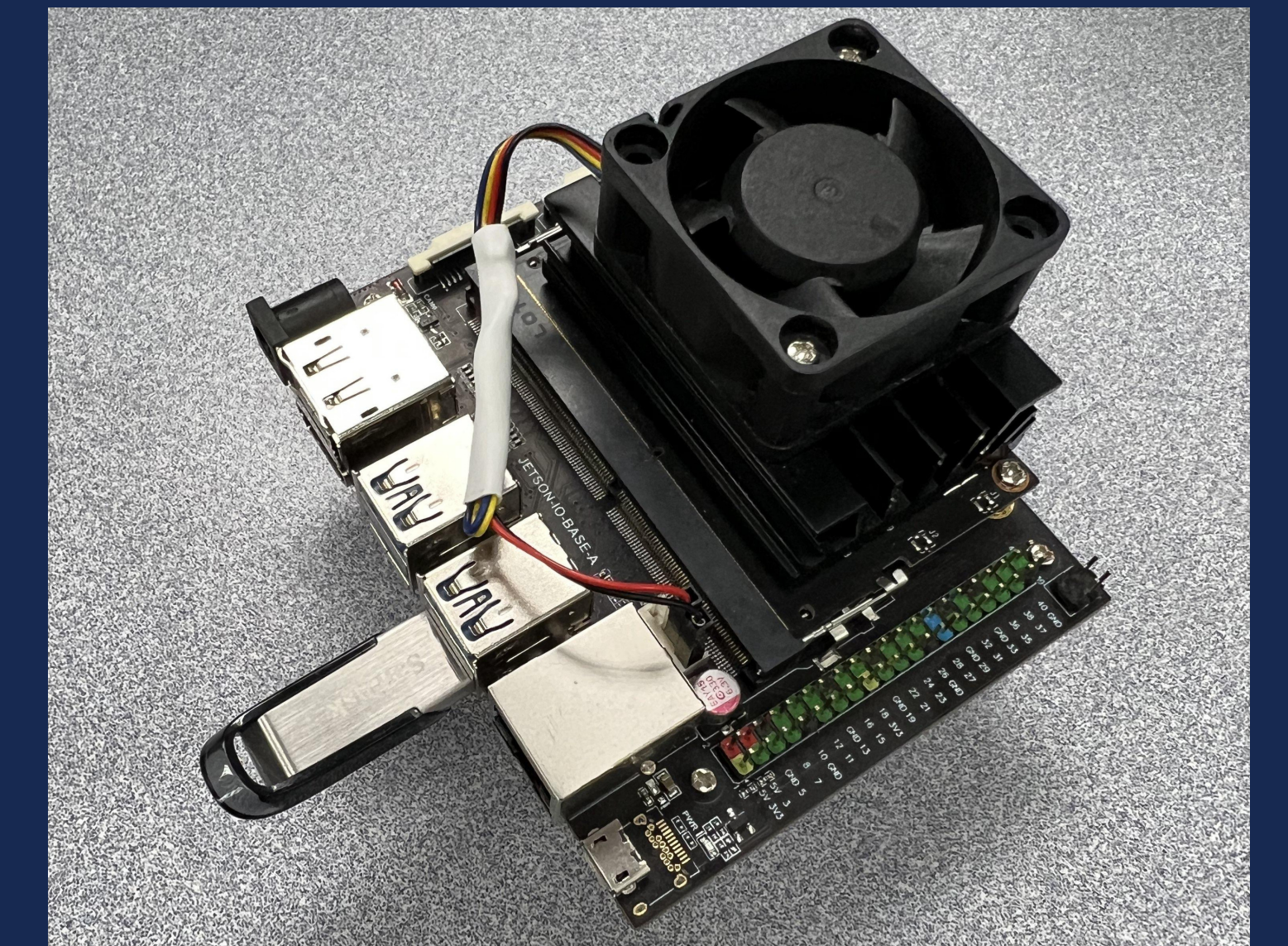
FINAL ASSEMBLY



HARDWARE COMPONENTS

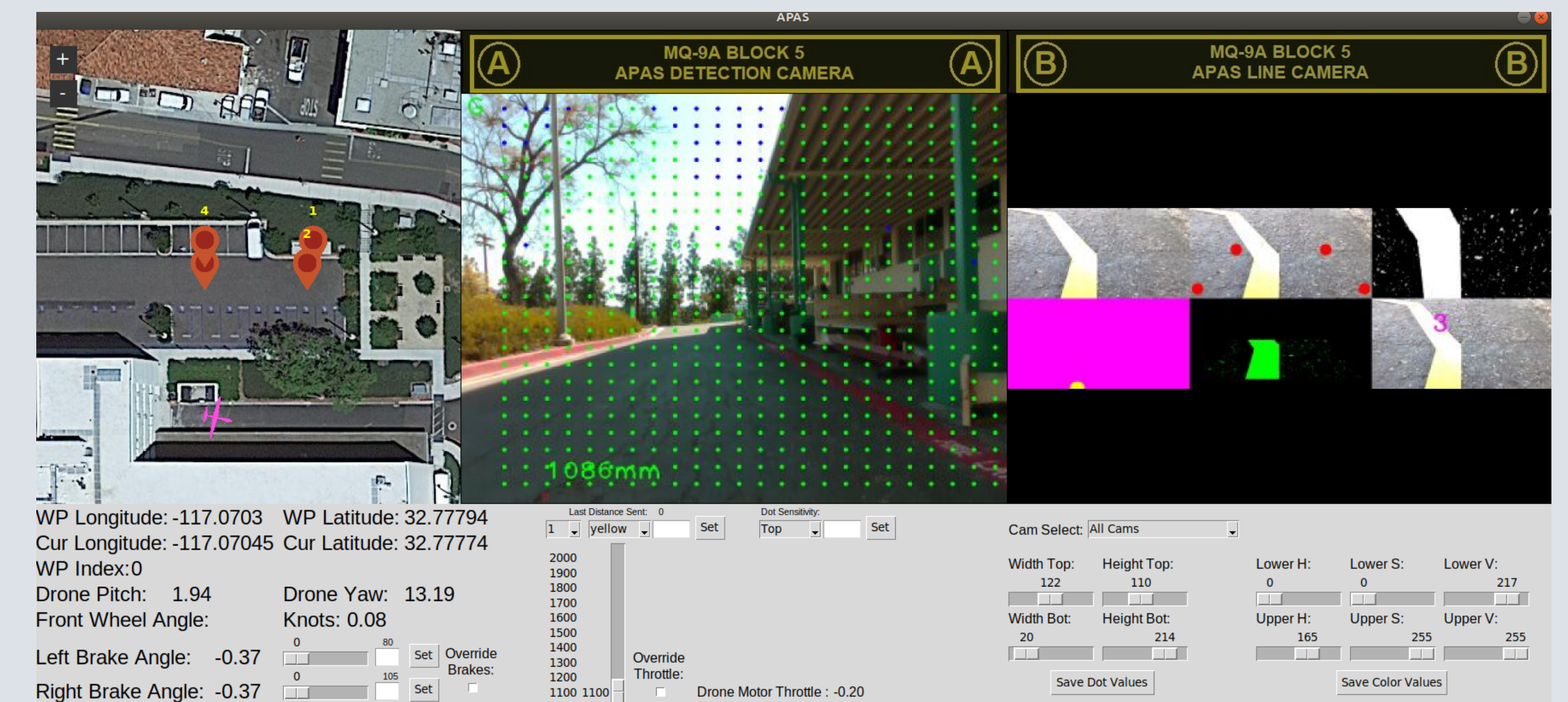


INTEL REALSENSE D435I



Jetson Nano Main CPU

FIRMWARE



GRAPHICAL USER INTERFERENCE
GPS WAYPOINT, DISTANCE DETECTION, LINE TRACKING

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

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