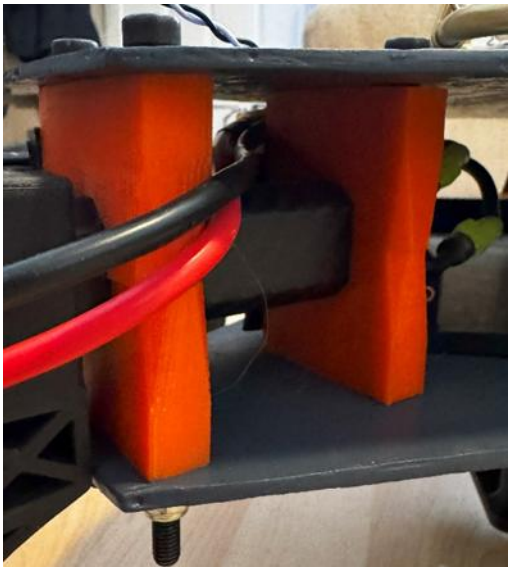
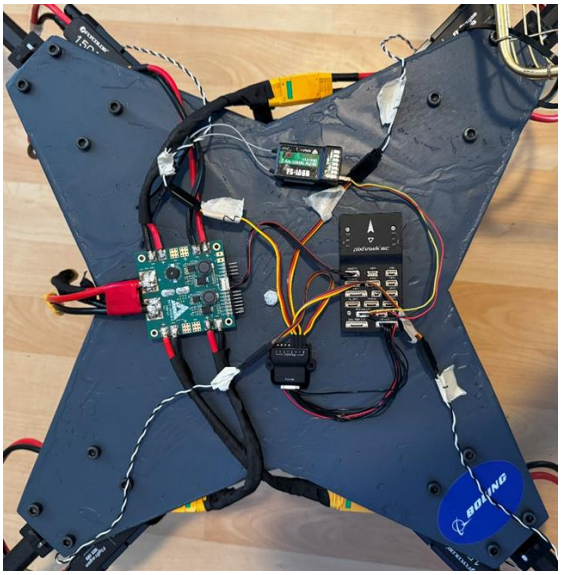
Final Product Photos with Descriptions:

Description: This image showcases the top level, full assembly of the DORIS Drone, in this image the drone is fully assembled, and painted, with all systems fully operational, and electronic system protection (metal basket)



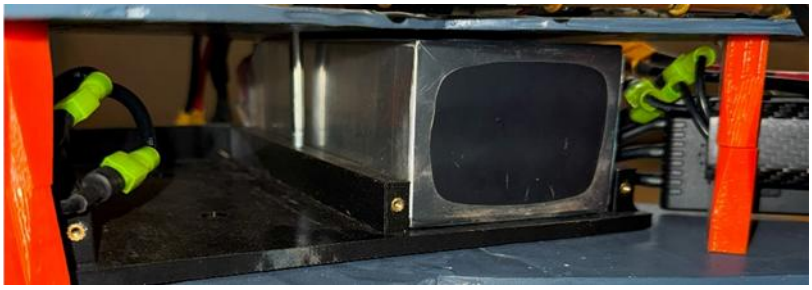
Description: This image showcases how the carbon fiber arms mount to the frame, the orange mounts go around the arm, then bolts are routed through those mounts and are sandwiched in-between the two frame plates, this image also shows how the esc wires are routed in-between the arm and the frame plate in the space between the mounts, and the motor wires are routed through the center of the arms

Description: This image showcases how the motors are mounted to the drone’s arm(s), the motors are mounted to a mount plate, then connected to the orange arm mounts which clamp around the arm), then a secondary plate is mounted to the bottom, and bolts are routed though the plates and orange the mounts to properly secure the assembly to the carbon fiber arms



Description: This image showcases how the electronics system was mounted to the top frame plate of the drone, esc power wires and batteries were connected to the power distribution board (PD board), then the esc signal wires, the PD board signal wire, and RC transmitter were connected to the Pixhawk flight controller

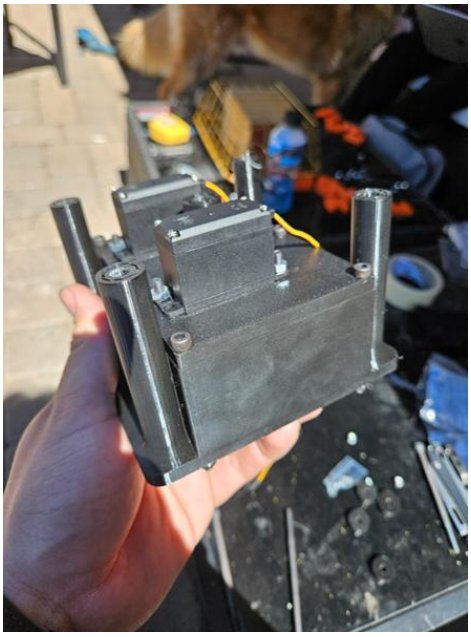
Description: this image showcases how the esc's were mounted in the middle section of the drone body, mounted to the sides of the orange arm mounts (using adhesive Velcro strips); it also shows how the esc's were cross-mounted, each esc for each motor was mounted to the opposite arm, and the wiring is also shown crossed in this image, to be more specific, the esc on the left connects to the motor that is mounted to the arm on the right



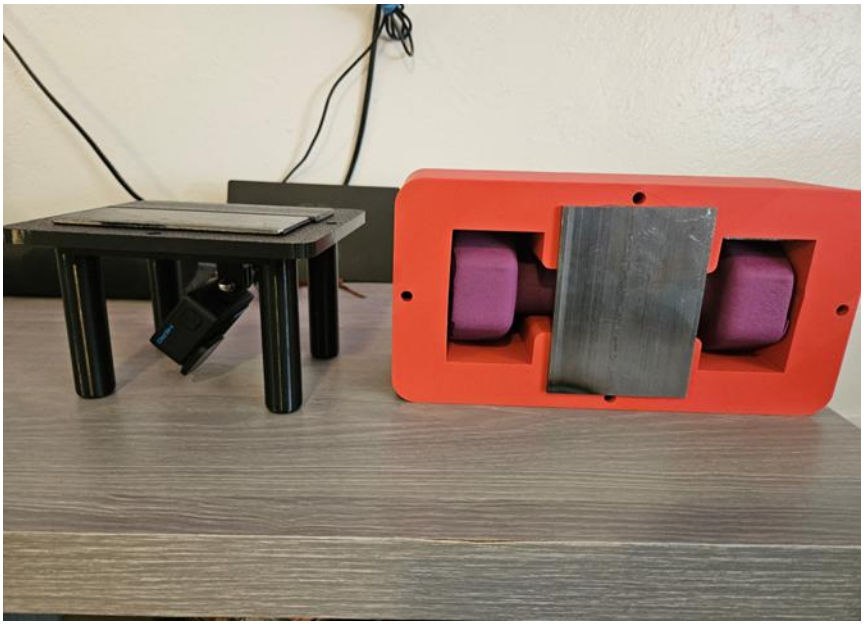
Description: this image showcases how the batteries were mounted to a bracket in the middle section and centered in the body of the drone

Description: this image showcases how the batteries are secured to their respective bracket using a hold tab that is bolted down in 3 separate mounting locations

Description: this image showcases how the mechanical magnets (magswitches) are mounted into the payload subsystem bracket, and they are shown protruding from the bottom of the bracket



Description: this image showcases how the servos are mounted on top of the magswitches, using a secondary bracket that mounts the servos on top of the magnets



Description: this image showcases the 2 separate payload brackets, the one on the left allows a GoPro camera to be mounted to it in-between its legs, and the bracket on the right allows a dumbbell weight to be mounted inside the bracket, both brackets have metal plates (mild steel) mounted on top of them in order to interface with the magnets from the payload subsystem that is mounted to the drone