GROUND TEST

DATE:

OBJECTIVE
- Ensure safe operation of iron bird within UAS airframe
- Establish flight-ready UAS

SUCCESS CRITERIA
- Correct responses of all telemetry components
- Correct response of GPS through carbon fiber shell (else will need to mount GPS outside of fuselage)
- Correct response of all control surfaces (flaperons, elevator, and rudder)

LOCATION	TEST SYSTEM	TEST CONDITIONS
Lab and/or outside	Iron Bird and Airframe integrated	Standard

DEBRIEF

- Objectives met:
- Battery pre-test: —— | - Battery post-test: —— | - Power consumption:
□ Connection and calibration capable with QGroundcontrol
□ Correct response of ALL sensors/controls: airspeed sensor, motor, all 4 servos, and GPS

PROCEDURES

1. Ensure entire iron bird system is connected
2. Measure the voltage in the battery
3. Connect the battery
   - □ Verify Pixhawk lights turn on
4. Connect Taranis via Dragonlink
5. Connect QGroundControl to iron bird system
6. Calibrate iron bird with QGroundControl
   - □ Ensure in QGroundControl that the system is connected
7. Blow into pitot tube and monitor airspeed response
   - □ Ensure a response is measured through QGroundControl
8. Ensure motor is properly attached and area is clear
9. Power motor 1/4 full throttle using Taranis
   - □ Verify motor begins to turn
10. Power motor 1/2 throttle
    - □ Verify increase in motor speed
11. Power motor full throttle
    - □ Verify increase in motor speed
12. Power down motor completely so that the motor stops moving
13. Use Taranis to move each servo to ensure controls are free and correct
    - □ Verify aileron 1 responds
    - □ Verify aileron 2 responds
    - □ Verify both elevators respond
    - □ Verify rudder responds
14. Use Taranis to move test the flaperon switches
    - □ Verify Flaperons respond at position one (one notch down)
    - □ Verify Flaperons respond at position two (lowest notch down)
15. Walk around outside of any building to test GPS without the cover on the fuselage
    - □ Verify correct GPS display on QGroundControl location
16. Change the orientation of iron bird while standing still
    - □ Verify correct GPS response to change in orientation
17. Walk around outside of any building to test GPS with the carbon fiber cover on the fuselage
    - □ Verify correct GPS display on QGroundControl location
18. Change the orientation of iron bird while standing still
    - □ Verify correct GPS response to change in orientation
19. Ensure all components are idle
20. Disconnect battery from iron bird system
21. Power off Taranis
22. Disconnect from QGroundControl