U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

July 21, 2015

Exemption No. 12101
Regulatory Docket No. FAA–2015–0988

Mr. Nate Steier
Flight Operations Manager
Top Intel Advanced Aerial Imaging, Inc
29675 Coldwater Avenue
Honey Creek, IA 51542

Dear Mr. Steier:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

By letter dated March 18, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Top Intel Advanced Aerial Imaging, Inc (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct data capture for agricultural surveying, sUAS operator training, real estate photography, product demonstrations, and research and development.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner.

Airworthiness Certification

The UAS proposed by the petitioner are a DJI Phantom 2 Vision Plus, DJI S-900, and a RoboFlight RF-70.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Top Intel Advanced Aerial Imaging, Inc. is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform

[1] Aerial data collection includes any remote sensing and measuring by an instrument(s) aboard the UA. Examples include imagery (photography, video, infrared, etc.), electronic measurement (precision surveying, RF analysis, etc.), chemical measurement (particulate measurement, etc.), or any other gathering of data by instruments aboard the UA.

aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Top Intel Advanced Aerial Imaging, Inc is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the DJI Phantom 2 Vision Plus, DJI S-900, and the RoboFlight RF-70 when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are not permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of

exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal

government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The

exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N−Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

25. The UAS may not be operated by the PIC from any moving device or vehicle.

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

    The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS−80) within 24 hours. Accidents must be

reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N−Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on July 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/
John S. Duncan
Director, Flight Standards Service

Enclosures

March 18, 2015

U.S. Department of Transportation
Docket Management System
1200 New Jersey Ave. SE
Washington, DC 20590

Re: **Exemption Request Section 333 of the FAA Reform Act**

Dear Sir/Madam,

This petition is being submitted on our own behalf without legal counsel or consulting services. Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the Reform Act), and 14 C.F.R. Part 11, Top Intel, Inc. (TII), an Iowa based company operating a Small Unmanned Aircraft System (sUAS) equipped to conduct aerial photography and survey for various industries, hereby applies for an exemption from the Federal Aviation Regulations (FARs) listed below to allow operation of our sUAS commercially in airspace regulated by the Federal Aviation Administration (FAA) so long as such operations are conducted with and under the conditions outlined herein or as may be established by the FAA as required by Section 333.

Top Intel Advanced Aerial Imaging is a partner of Roboflight and agrees with their proposed rules and safety equivalents of unmanned vehicles.

The requested exemption would permit Top Intel to pursue its commercial interests in providing services to consumers interested aerial data capture using a small advanced sUAS in the following areas:

- Agricultural Surveying
- sUAS Operator Training
- Real Estate Photography
- Product Demonstrations
- Research and Development

TII states that all sUAS flights that will occur over private or controlled access property will do so with the property owner's prior consent and knowledge and that only people who have consented or otherwise have agreed to be in the area where photography and videography will take place will be captured.

Additionally, TII pilots hold FAA Commercial Pilot Licenses with Class II Medical Certificates and if observers are not qualified pilots, they will be trained by TII pilots to understand the proper roles of an observer, communication procedures, proper visual scan techniques, operations at non-towered airports, and appropriate sections of the Aeronautical Information Manual.

Regulations from which the exemption is requested:

14 C.F.R. Part 21
14 C.F.R. 45. 23(b)
14 C.F.R. 61. 113(a) and (b)
14 C.F.R. 91. 7 (a)
14 C.F.R. 91. 9(b) (2)
14 C.F.R. 91. 109
14 C.F.R. 91. 119
14 C.F.R. 91. 121
14 C.F.R. 91. 151(a)
14 C.F.R. 91. 203 (a) & (b)
14 C.F.R. 91. 205 (b)
14 C.F.R. 91. 215
14 C.F.R. (91. 401 - 91. 417)

Unmanned Aircraft System

sUAS are a feasible method to obtain information of agricultural cropland to determine optimum inputs that result in cost savings to farmers, yield security, and reduce environmental impact of excess fertilizers and chemicals in soil.

We are petitioning for exemption to enable TII to operate a DJI Phantom 2 Vision Plus multi-rotor equipped with a three-axis gimbaled camera, a DJI S-900 multi-rotor equipped with a three-axis gimbaled camera, and an RF-70 fixed wing sUAS equipped with a fixed position multi-spectral camera. These sUAS all weigh less than 25 lbs, have a built-in capability to limit the height it flies above the ground, to limit the radius of the distance it flies from the operator and to exclude it from Class B, C and D airspace including a no fly zone feature. Each system also has the failsafe function of the autopilot system, which means when the communication between the Main Controller and the transmitter is lost, the system will automatically trigger Return to Home and will land safely.

The above specifications meet standards listed below, some derived in accordance with the Model Aircraft Operating Standards:

- The petitioner will only operate its sUAS in line of sight of a pilot and/or observer and will operate at sites that are a 'sufficient distance' from populated areas within the sterile area described in the operators manual. Such operations will insure that the sUAS will "not create a hazard to users of the national airspace system or the public."
- When flying an sUAV within 3 miles of an airport, airport operators will be notified and the operator will give the right of way to avoid flying in the proximity of full-scale aircraft.
- Maximum flight time for each operational flight will be 60 minutes.
- Flights will be terminated at 25% battery power reserve should that occur prior to the 60 minute limit.

- The sUAV will be programmed so that it will not be operated at an altitude of no more than 600 feet AGL, and not more then 200 feet above an elevated platform from which filing is planned
- Minimum crew for each operation will consist of the sUAS Pilot and the Visual Observer.
- The sUAS PIC's (Pilot in Command) will be an FAA licensed airman holding an FAA Commercial License with a current Class II Medical.
- The sUAS operated by the petitioner weighs less than 55 pounds, including the payload (i.e. camera, lens, and gimbal).
- The sUAS will operate at speeds of no more than 55 knots.
- Given the small size of the sUAS and the restricted sterile environment within which they will operate, our sUAS operations adhere to the Reform Act's safety requirements.

Additionally, the fact that the TII pilots hold FAA Pilot certificates demonstrates that they have a high regard to safe operations with an understanding of FAR's, pre-flight inspections, maintenance and repair, operations within airspace, as well as being trained to high safety standards.

Under the requested exemption TII ensures that all operators have completed a small unmanned aircraft systems (UAS) education and training program including all applicable regulations and guidance documents; including aeronautical background information such as charts, NOTAMS and Aircraft Circulars; Radio Communications Procedures; Human Factors and Crew Resource Management; Basic Small UAS Aerodynamics; Weather factors; Airmanship and Decision-making and Safe Operating Procedures.

We Respectfully request exemption under Section 333 to enable TII to operate safe, low-risk commercial sUAV operations for the activities stated. TII at all times will respect the space and privacy of citizens and property whilst keeping our skies safe.

Sincerely

Nate Steier

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Honey Creek, IA 51542
402-214-9185
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EXEMPTION REQUESTS AND EQUIVALENT LEVEL OF SAFETY

Top Intel Advanced Aerial Imaging requests an exemption from the following regulations as well as any additional regulations that may technically apply to the operation of the sUAV System:

14 CFR Part 21, Airworthiness Certificates.

Experimental certificates are issued for the following purposes:

(a) Research and development. Testing new aircraft design concepts, new aircraft equipment, new aircraft installations, new aircraft operating techniques, or new uses for aircraft.

(b) Showing compliance with regulations. Conducting flight tests and other operations to show compliance with the airworthiness regulations including flights to show compliance for issuance of type and supplemental type certificates flights to substantiate major design changes, and flights to show compliance with the function and reliability requirements of the regulations Since the experimental certificate can be used for commercial purposes such as market surveys, sales demonstrations, and customer crew training, we would expect that an experimental certificate would permit our commercial purpose as well. The aircraft will not carry persons or property, will not carry fuel, and will only fly under strict operational requirements. Combined with the UA's light weight, being constructed primarily of foam, carbon fiber, and/or plastic, we propose that the UA will be at least as safe, if not safer, than a conventionally certificated aircraft performing the same mission. If an experimental airworthiness certificate is not appropriate for this application, then we request an exemption of 14 CFR Part 21, Subpart H, and the requirement for an airworthiness certificate in general, citing the equivalent level of safety outlined in the previous paragraphed.

14 CFR 45.23 Display of marks; general and 45. 29 Size of marks.

These regulations provide that each aircraft must display "N" and the aircraft's registration number in letters at least 3 inches high. Additionally, the aircraft must display the word "EXPERIMENTAL" in letters at least 2 inches high near the entrance to the cabin, cockpit, or pilot station. The sUAV does not have an entrance in which the word "EXPERIMENTAL" can be placed, and may not have a registration number assigned to it by the FAA. We propose to achieve an equivalent level of safety by including the "EXPERIMENTAL" in the placard on the top of the aircraft, as shown above, where the PIC, VO and other in the vicinity of the aircraft while it is preparing for launch will be able to see the designation. Additionally, we feel that the permanent placard discussed in the previous paragraph will provide the aircraft's registration information a the ground station. Finally, we will display at the ground station a high contrast flag or banner that contains the words "Unmanned Aircraft Ground Station" in letters 3 inches high or greater. Since the aircraft will operate within .5 miles of the ground station, the banner should be visible to anyone that observes the aircraft and chooses to investigate its point of origin.

14 CFR 91. 7 Prohibits the Operation of an aircraft without an airworthiness certificate.

As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable.

14 CFR 91. 9 Civil aircraft flight manual, marking, and placard requirements.

This regulation provides that no person may operate an aircraft unless a current, approved flight manual is in the aircraft. We assume that the intent of this requirement is to ensure that flight manual information is available to the aircrew while operating the aircraft. We request an exemption to this requirement since the aircraft is not only too small to carry documentation, the documentation would not be available to the crew during flight operations. To obtain an equivalent level of safety and meet the intent of 91. 9, we propose that a current, approved sUAS Flight Manual must be available to the crew at the ground station anytime the aircraft is in, or preparing for, flight.

14 CFR 91. 109 Flight Instruction; Simulated instrument flight and certain flight tests.

The regulation states that "No person may operate a civil aircraft that is being used for flight instruction unless that aircraft has fully functioning dual controls." The sUAS ground-based control station consists of a small hand-held radio transmitter and while it does not offer a second set of "controls", both the student and instructor can, and will, operate the single set of controls simultaneously. With both student and instructor having "hands-on" the controls during flight, we feel that this technique meets the intent of 91. 109 and provides an equivalent level of safety.

14 CFR 91. 119 Minimum safe altitudes: General.

The regulation states that over sparsely populated areas the aircraft cannot be operated closer than 500 feet to any person, vessel, vehicle, or structure. Since the typical mission of the sUAS would be photography or survey of persons, vessels, vehicles or structures it would be necessary to operate closer than 500 feet to the items listed. Operations will only be flown over property or persons where permission has been obtained and careful pre-flight planning has taken place. The aircraft will be operated at a low altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface. Therefore we maintain that due to the small size of the UAS, the hazard to persons, vehicles and structures is minimal compared to manned aircraft, which should be considered in granting the exemption.

14 CFR 91. 121 Altimeter Settings.

The regulations requires that aircraft shall maintain cruising altitudes by refere3nce to an altimeter setting available within 100 NM of the aircraft. The sUAS will always fly below 600 feet AGL and will not need to maintain cruising altitudes in order to prevent conflict with other aircraft. An Above Ground Level altimeter measurement above the takeoff point is transmitted via radio from the sUAS on-board computer to the display screen held by the PIC, providing a constant updated AGL readout.

14 CFR 91. 151 Fuel requirements for flight in VFR conditions.

The regulation provides that no person may begin a flight in an airplane under day-VFR conditions unless there is enough fuel to fly to the first point of intended landing and to fly after that for at least 30 minutes. We feel the intention of this paragraph is to provide an energy reserve as a safety buffer for delays to landing. The sUAS are battery operated and the maximum duration of flight form a single battery charge is 12-45 (depending on which sUAS) minutes with a 20% reserve. Since the aircraft will never fly more then .5 NM from the point of intended landing, a full battery charge at launch will ensure that we meet the reserve energy requirement of this paragraph. We request an exemption to the word "fuel" and ask for an equivalent interpretation with the word "energy". We also request an exemption from the 30 minute reserve and ask that our reserve will be to fly the mission to the point of intended landing and have at least a 20% battery reserve after that.

14 CFR 91. 203 (a) & (b) Civil aircraft: Certifications required.

The regulation provides that an airworthiness certificate, with the registration number assigned to the aircraft and a registration certificate must be aboard the aircraft. Additionally, subparagraph (b) provides that the airworthiness certificate be "displayed at the cabin or cockpit entrance so that it is legible to passengers or crew." With our largest vehicle, the RF-70, at a maximum gross weight of 13 pounds, the sUAS is too small to carry documentation, does not have an entrance, and is not capable of carrying passengers or crew. To obtain an equivalent level of safety and meet the intent of 91. 203, we propose that documents deemed appropriate for this aircraft bye the FAA will be co-located with the crew at the ground control station and available for inspection upon request. In order to identify the aircraft, we propose that the information found on airworthiness and registrations certificates permanently affixed to the aircraft via placard containing the following information plus the word "EXPERIMENTAL" to satisfy the requirement of 14 CFR 45. 23.

14 CFR Subpart E (91. 401-91. 417) - Maintenance, Preventive Maintenance, Alterations.

The regulation provides that the operator is primarily responsible for maintaining the aircraft in an airworthy condition, including compliance with part 39 and 43. Paragraphs 91. 407 and 91. 409 require that the aircraft be "approved for return to service by a person authorized under 43. 7" after maintenance and inspection. It is our intention that the PIC perform maintenance and inspection of the aircraft and "be authorized to approve the aircraft for return to service." The PIC will ensure that the aircraft is in an airworthy condition prior to every flight and in addition, conduct detailed inspections after every two hours of flight. Maintenance performed by the PIC is limited to repairing small cracks, replacing propellers, checking electrical connections and updating software and firmware for the on-board computer. All other maintenance will be performed by the manufacturer or their designated repair facility. The PIC will document work performed in accordance with 91. 417. We feel that due to the size, construction, and simplicity of the aircraft, the PIC can ensure an equivalent level of safety.