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

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

July 15, 2015

Exemption No. 12046
Regulatory Docket No. FAA–2015–1534

Mr. Dennis Dickinson
COO & Chief Pilot
AerOptix, LLC
10971 Four Seasons Place, MB8
Crown Point, IN 46307

Dear Mr. Dickinson:

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 May 1, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of AerOptix, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial surveys, photography, videography, and inspections.

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 the DJI Phantom 2 Vision+, DJI Phantom 3, and DJI Inspire 1.

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

[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.

Conditions and Limitations

In this grant of exemption, AerOptix, LLC 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+, DJI Phantom 3, and DJI Inspire 1 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

10971 Four Seasons Place, MB8
Crown Point, IN 46307

May 1, 2015

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

RE: Exemption Request Under Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations

To Whom It May Concern:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 ("FAA Reform Act') and 14 C.F.R. Part 11, AerOptix, LLC hereby requests an exemption from Federal Aviation Regulations ("FARs") listed below to allow operation of our Small Unmanned Aircraft Systems (sUASs) 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.

This exemption is in accordance with protocols outlined in this petition for exemption, the enclosed AerOptix Operations Manual, AerOptix Flight Training Manual, and upon request the DJI UAS manufacturer's operations and/or instructions manual, DJI UAS User's Manuals, DJI UAS Quick Start Guides, DJI "Phantom Pilot Training Guide" and any other requirements established by the FAA pursuant to Section 333 of the Reform Act.

This exemption would permit commercial operation by AerOptix, which uses a DJI Phantom 2 Vision plus, DJI Phantom 3 (a new type but almost identical to the proven sUAS type already granted with Exemption 11300), and DJI Inspire 1, to conduct sUAS aerial data collection. AerOptix's operation under the exemption will be subject to strict operating requirements and conditions to ensure an equivalent level of safety to currently authorized operations using manned aircraft and under conditions as may be modified by the FAA as required by Section 333.

AerOptix wishes to pursue this request exemption so as to enable commercial interests within industries related to real estate, marketing, surveying, aerial photography/videography, construction sight monitoring, pipeline surveying and inspection, Law Enforcement investigations, emergency services site management in cases of natural and manmade disasters as well as search and rescue, environmental monitoring, power lines, communications towers, wind turbines, and surveying tasks such as precision agriculture, mining, transportation, and forestry.

The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in our petition. In Grants of Exemption Nos. 11300, 11330, 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.

Operations will be in compliance with AerOptix Operational Manual. AerOptix would like to specifically request exemptions from 14 CFR 21, 14 CFR 91.203, 14 CFR 45.23, 14 CFR 45.29, 14 CFR 91.9, 14 CFR 61.113, 14 CFR 91.109, 14 CFR 91.119, 14 CFR 91.121, 14 CFR 91.151, 14 CFR Subpart E (91.401-91.417). These regulations will be listed in an itemized form below.
14 CFR21
14 CFR 91.203
14 CFR45.23
14 CFR45.29
14 CFR 91.9
14 CFR 61.113
14 CFR 91.109
14 CFR 91.119
14 CFR 91.121
14 CFR 91.151
14 CFR 91.401-91.417

The primary PIC will be Chief-Operating-Officer (COO) and Chief Pilot Dennis Dickinson. Other PIC's may be considered if currently qualified as a FAA certified pilot (with a minimum of a Sport or Recreational Certified Pilot) that COO and Chief Pilot deems satisfactorily able to 1) strictly fly within AerOptix Operational Manual and 2) has passed "AerOptix PIC Qualification Standards" dictated within our Flight Training Manual. COO Dickinson is an ATP with over

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11,000hrs and is currently a major airline pilot with over 17 years of Part 121 experience within the National Airspace System (NAS), and 4 years of flight instruction. He has 9 years of RC model aircraft flying and more than 15hrs recently with a DJI Phantom II. He is very familiar with CRM, safety standards and the FARs. These experiences will be applied to AerOptix's flight operation and explained within AerOtix's Operations Manual and AerOptix's Flight Training Manual (labeled confidential below).

PIC requirements will be:

1. A minimum of a Sport or Recreational FAA pilots certificate
2. FAA medical certificate or valid US driver's license and wear corrective lenses if needed.
3. Must meet flight review requirements specified in 61.56 for their rating.
4. Have at least 25hrs of multi-rotor sUAS experience, of which, a minimum of 5hrs must be in each sUAS type (ie DJI Phantom series or DJI Inspire 1). To maintain currency PIC must log 2hr and 3 take-offs and landings every 90 days.

The name and address of the applicant are:

	AerOptix, LLC
ATTN:	Dennis Dickinson (COO & Chief Pilot)
Business Phone:	(844) UAV PROS
email:	dennisdickinson@icloud.com
Business Address:	AerOptix, LLC
	10971 Four Seasons Pl, MB8
	Crown Point, IN 46307
Address:	8416 Doubletree Dr. N
	Crown Point, IN 46307
Phone:	219-381-4484

Radio transmission will be in compliance with all FCC regulations. They are 5.8 GHz Remote Controller Receiver, Flight Control System and 2.4 GHz Wi-Fi Module are inside the sUAS's.

Paperwork: The ground control station will always include a copy of the pilot's license, AerOptix Operations Manual, DJI User Manuals, AerOptix Flight Training Manual as amended with conditions or limitations scripted by the FAA, copy of the granted exemption, pursuant to the grant of this exemption by the FAA, copy of the insurance certificate, business cards and any other relevant paper work for the specific event.

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AerOptix Standard Operating Procedures will be as follows:

- All sUAS operated by AerOptix will weigh less than 55lbs, including payload.
- sUAS will not be operated at speeds exceeding 100mph (87kts) groundspeed. In no case will we operate above the maximum speeds recommended by the manufacture.
- sUAS will not be operated at an altitude greater than 400ft (AGL) above ground level.
- We will always operate the sUAS within visual line of sight (VLOS) of the PIC at all times. No human vision unaided devices will be used (other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or US driver's license.)
- All operations will be conducted with a visual observer (VO). The sUAS will remain within VLOS of both the PIC and VO. Communication will always remain within verbal means between PIC and VO without the aid of electronic devices. Transferring PIC during the duration of a flight will be prohibited.
- We will always abide by flying within the limits of our Operating Manual. However, the conditions and limitations stated in this exemption will always take precedence and must be followed should there be a discrepancy. AerOptix may revise and update the Operating Manual.
- Our Operating documents will always be available to the Administrator and law enforcement official upon request.
- Any sUAS under our control needing maintenance or alterations that effect its operation or flight characteristics will undergo a functional test flight (remaining 500ft from other people) prior to any commercialized use (in accordance to this exemption). A PIC and VO must conduct the test flight.
- AerOptix is responsible for maintaining and inspecting the sUASs to ensure they are in a condition for safe operation.
- The PIC will conduct a pre-flight inspection for each flight taking into account all potential discrepancies. If anything is found that could effect the safe operation the sUAS will be prohibited from flight.
- We will follow manufacture's User Manuals and any safety bulletins.
- All operations will be conducted during the day and under VFR (visual flight rules).
- We will not conduct any operations within 5 miles from any airport (ARP reference) unless a LOA (letter of agreement) with that airport's management is obtained (if permitted by a COA).
- We will always give way to manned aircraft.
- We will not operate less than 500ft below, 2000ft horizontally from any cloud. We will not operate when visibility is less than 3 miles.
- Batteries are a critical component of the all electric sUAV's. As such:

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        - If signal is lost or Low Battery Warning is issued, sUAS will return to "Home Position."
        - Our sUAS will operate allowing for enough battery power for the intended operation and then have enough "reserve power" to operate for a further 5min. PIC must account for forecasted weather and wind.
        - Any Flight Battery indicating 20-30% remaining battery life (one blinking LED1 light when checking battery life--per DJI User Manuals) will be retired from AerOptix flight operations.
    - We will not conduct operations from a moving vehicle or device.
    - We will always conduct operations 500ft from all nonparticipating persons, vessels, vehicles, and structures, unless, owner/controller of any vessels, vehicles, or structures has granted permission.
    - All operations over property will have permission.
    - Any incidents, accidents, or flight transgressions will be reported to the FAA's UAS Integration Office (AFS-80) within 24hrs. Any accidents will be reported to the NTSB.

AerOptix is submitting this petition on its own behalf. If the FAA requires any modifications to our AerOptix exemption request, we request the opportunity to amend this petition to include any modifications the FAA may require before granting or rejecting the petition for exemption. AerOptix will amend its petition to meet any additional standards for the integration of small UAS operation into the NAS.

AerOptix also requests that the FAA keep materials labeled "Confidential" from the public record for the purpose of maintaining our intellectual property.

Public Interest

Granting the requested exemption will benefit the public interest as a whole in many ways, including (1) significantly improving safety and reducing risk by alleviating human exposure to danger like from a helicopter or low flying aircraft, (2) improving the quality of services and decreasing clients' costs compared with conventional flight operations, (3) helping to create jobs within the local industry.

Aerial videography for geographical awareness, real estate marketing, construction sights, pipeline surveying, surveying tasks such as precision agriculture, mining, transportation, and forestry have been around for a long time through manned fixed wing aircraft and helicopters, but for small business owners, its expense has been cost-prohibitive. By granting this exemption we would be able to provide this service at a much lower cost. Further, our small

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UAS will pose no threat to the public given its small size and lack of combustible fuel when compared to larger manned aircraft.

We will have a positive impact on the public interest by providing services that are not available to the general public but are in high demand by both private and municipal parties.

AerOptix's respectfully request that the FAA grants this exemption request. Satisfaction of the criteria provided in Section 333 of the Reform Act of 2012--size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight with a highly experienced PIC – provide more than adequate justification for the grant of the requested exemptions allowing commercial operation of applicant's UAS.

ATTACHED:
Exemption Request And Equivalent Level of Safety
AerOptix Operational Manual (confidential)
AerOptix Flight Training Manual (confidential)

The above are submitted as Confidential Documents under 14 C.F.R. § 11.35(b) and exempt from disclosure under the Freedom of Information Act, 5 U.S.C. § 552 et seq., and any other requirements established by the FAA pursuant to Section 333 of the Reform Act

Available On Request: DJI User Manuals for Phantom II Vision +, DJI Phantom 3, and DJI Inspire 1 and also the DJI Phantom Pilot Training Guide.

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Exemption Request and Equivalent Level of Safety

AerOptix 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
This part establishes the procedures for the issuance of an airworthiness certificate. While the FAA continues to work to develop airworthiness standards for Unmanned Aerial Systems, we request an exemption be issued for the DJI Phantom 2 Vision Plus, DJI Phantom 3, and DJI Inspire 1 under either, or both, of the following provisions:

Given the size, weight, speed, and limited operating area associated with the sUAS, we feel an exemption from 14 CFR part 21, Subpart H (Airworthiness Certificates) and § 91.203(a) and (b) (Certifications required), subject to certain conditions and limitations, is warranted and meets the requirements for an equivalent level of safety under 14 CFR part 11 and Section 333 of P.L. 112-95 (Section 333).

14 CFR 45.23 Display of marks; general and 45.29 Size of marks
We request an exemption from § 45.23 Marking of the aircraft because the UAS will not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, the two-inch lettering is difficult to place on such a small aircraft with dimensions smaller than the minimal lettering requirement. Regardless of this, we can mark the UAS in the largest possible lettering by placing the word “Experimental” on its fuselage as required by § 45.29(f) so that anyone will see the markings.

14 CFR 61.113 Private pilot privileges and limitations: Pilot in Command and 61.133 Commercial pilot privileges and limitations.
The regulation provides that no person who holds a Private Pilot certificate may act as pilot in Command of an aircraft for compensation or hire. Subparagraph (b) allows a private pilot to act as pilot in command of an aircraft in connection with any business or employment if: (1) The flight is only incidental to that business or employment; and (2) The aircraft does not carry passengers or property for compensation or hire. Our proposed operations require that the PIC must hold at least a Sport or Recreational Pilot Certificate issued by the FAA and since the aircraft cannot carry passengers or property, we feel we meet the intent of 61.113 Subparagraph (b) even though the intent of this application is to conduct a business.

14 CFR 91.7 Prohibits the Operation of an aircraft without an airworthiness certificate.
Prohibits the operation of an aircraft without an airworthiness certificate. Petitioner requests exemption based on previous Exemption No. 11138. The FAA has ruled that this make and model of aircraft (UAS) does not require an airworthiness certificate.

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14 CFR 91.9 Civil aircraft flight manual, marking, and placard requirements.

We request an exemption from § 91.9(b)(2) which requires an aircraft flight manual in the aircraft, however since there are no pilots or passengers on board the aircraft and given its size, this regulation is inapplicable. We believe an equivalent level of safety will be achieved by maintaining a operations manual and flight training manual with the UAS ground station.

14 CFR 91.109 Flight Instruction; Simulated instrument flight and certain flight tests.

The regulation states "No person may operate a civil aircraft that is being used for flight instruction unless that aircraft has fully functioning dual controls." The sUAS System ground-based control station consists of a 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, this technique meets the intent 91.109 and provides an equivalent level of safety.

91.119 Minimum safe altitudes: General.

We request an exemption from § 91.119 which prescribes safe altitudes for the operation of civil aircraft, but it allows helicopters to be operated at lower altitudes in certain conditions. We will not operate our UAS above the altitude of 400 feet above ground level (AGL) and will also only operate in safe areas away from the (500ft away from any non-participating) people or property public and traffic, thus “providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes.” Given the size, weight, maneuverability, and speed of the UAS, an equivalent or higher level of safety will be achieved.

The majority of the operations proposed will operate around 100 to 150 feet AGL as this usually provides the best angle of capture for the type of photography and videography operations proposed.

The UAS utilized for this exemption is of exceptionally light weight and is not capable of speeds over 100mph. The UAS is equipped with GPS guided auto pilot with a return home function in case loss of control by the PIC and is powered by sealed batteries thereby reducing the chance of post impact fire to nearly zero.

There will be cases when the 500 foot to property will need to be exempted. (Example: Aerial Video of a 2 story home roof to determine and/or document extent of storm damage.) In this type of operation every assurance will be made to keep persons outside of a reasonable, safe, clear area of operations and will only be conducted with the express permission of the property owner.

We will implement procedures and policies to ensure that any person in the general vicinity of operations will be aware of such operations and ensure that all non-essential personnel are cleared of the area of operations

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CFR 91.121 Altimeter settings.
The sUAS will always fly below 400 feet AGL and will not need to maintain cruising altitudes in order to prevent conflict with other aircraft.

We request relief from 91.121 for the following reason. The UAS is equipped with GPS derived altitude capability, however due to the limited altitude requested in this exemption, the FAA has previously granted Exemption for these types of operations. Reference Exemption No. 11138.

14 CFR 91.151 Fuel requirements for flight in VFR conditions.

We request an exemption from 91.151(a) Fuel requirements for flight in VFR conditions. The UAV is 100% electric and two low battery alerts are issued -per the operating documents, the UAV will be landed at the first alert. Also, our flights will last only around 20 minutes each, and the UAS has an automated function which results in immediate landing when a low battery is detected. The PIC will not begin a flight unless (considering wind and forecast weather conditions) there is enough power to fly to the first point of intended landing and, assuming normal cruising speed, land the sUAS with 5min reserve battery power remaining.

14 CFR 91.203(a) & (b) Civil aircraft: Certifications required.
To obtain an equivalent level of safety and meet the intent of 91.203, we propose that documents deemed appropriate for this aircraft by 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 registration certificates be 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 once a month. Maintenance performed by the PIC is limited to repairing small cracks, replacing a propeller, 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.

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