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

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

June 16, 2015

Exemption No. 11810
Regulatory Docket No. FAA–2015−1082

Ryan P. Corey
Vertical Imagery LLC
P.O. Box 1345
2275 Dead Indian Memorial Road
Ashland, OR 97520

Dear Mr. Corey:

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 April 13, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Vertical Imagery LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial data collectionand research.

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 is a DJI T600.

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 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, Vertical Imagery 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.

Conditions and Limitations

In this grant of exemption, Vertical Imagery LLC is hereafter referred to as the operator.

[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.

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 T600 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 June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC

Regulatory Docket No. _____

IN THE MATTER OF THE PETITION FOR EXEMPTION OF: VERTICAL IMAGERY LLC FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF TITLE 14 OF THE CODE OF FEDERAL REGULATIONS (14 CFR) PART 21 SECTIONS; § 61.113(a) and (b), 91.7(a), 91.121, 91.151(b), 91.203(a) and (b), 91.405(a), 91.407(a)(1), 91.409(a)(2), and 91.417(a) and (b). CONCERNING OPERATION OF AN UNMANNED AIRCRAFT SYSTEM PURSUANT TO SECTION 333 OF THE FAA MODERNIZATION AND REFORM ACT OF 2012

Submitted on April 13, 2015

Vertical Imagery LLC
Ryan P. Corey
P.O. Box 1345
2275 Dead Indian Memorial Road
Ashland, OR 97520
(541) 488-2880
ryan@timberlandhelicopters.com

TABLE OF CONTENTS

GLOSSARY OF ABBREVIATIONS

AGL	Above Ground Level
ATC	Air Traffic Control
COA	Certificate of Authorization
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
NAS	National Airspace System
PIC	Pilot In Command
Section 333	FAA Modernization and Reform Act of 2012, Section 333
SOP	Standard Operating Procedures
UAS	Unmanned Aircraft System
UAV	Unmanned Aerial Vehicle
UH	Unmanned Helicopter
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
VO	Visual Observer
VTOL	Vertical Take Off and Landing

SUMMARY

Vertical Imagery LLC seeks exemption from the requirements of 14 C.F.R. §§ 61.113(a) & (b), 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (2), and 91.417(a) & (b), to operate an Unmanned Aircraft System pursuant to Section 333 of the FAA Modernization and Reform Act of 2012. In consideration of the speed, weight, size, and limited operating area associated with the unmanned aircraft and its operation, Vertical Imagery LLC's operation of the DJI T600 "Inspire 1" Unmanned Helicopter meets the conditions of FMRA Section 333 and therefore, will not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H. This exemption will permit Vertical Imagery LLC to operate an Unmanned Aircraft System for the commercial purpose of conducting aerial data collection and research within the National Airspace System.

INTRODUCTION AND INTERESTS OF THE PETITIONER

Vertical Imagery LLC (Hereinafter referred to as “Vertical Imagery”) is owned and managed by professional, highly experienced commercial helicopter pilots who are Part 133, 135, and 137 current. Vertical Imagery's pilots have an extensive history of power line and utility patrol, wildlife survey, electronic news gathering, search & rescue, and firefighting work across the Pacific Northwest. Vertical Imagery has recently acquired and been flight testing a DJI Inspire 1 Unmanned Helicopter which it plans to use for commercial operations including power line and public utility inspections, wildland fire patrols, aerial surveys, electronic news gathering, and aid in search & rescue operations. Vertical Imagery's lead pilot on the project has over 2000 hours helicopter flight time, as well as over 20 years experience and thousands of hours of UAV flight time. Vertical Imagery plans to work side by side with its sister company to diversify their fleet of aircraft with an unmanned helicopter in order to meet the needs of a continually evolving market while striving for an ever increasing level of safety to their employees and customers.

BACKGROUND

Vertical Imagery seeks an exemption to operate a DJI model T600 unmanned helicopter known as the "Inspire 1" for compensation or hire within the national airspace system. The Inspire 1 is comprised of a 4 rotor helicopter with attached HD camera system and a transportable ground station. The Inspire 1 UH has a maximum gross weight of approximately six and a half pounds (6.5 lbs.) and the following technical and operational specifications:

Weight (Battery and Camera included)	6.5 lbs.
Dimensions	17.3" x 17.8" x 11.9"
Hover Accuracy (GPS Mode)	
Vertical	1.6 ft.
Horizontal	8.2 ft.
Max Angular Velocity	
Pitch	300°/sec.
Yaw	150°/sec.
Max Tilt Angle	35°
Max Ascent Speed	16 ft./sec.
Max Descent Speed	13 ft./sec.
Max Air Speed	49 mph
Service Ceiling	14,500 ft.
Max Flight Time	18 min. approx.
Motor Model	DJI 3510
Rotor Blade Model	DJI 1345
Operating Temperature Range	-10° to 40° C
Supported Battery	DJI Intelligent Battery
Type	6S Lithium Polymer
Capacity	
Standard Battery	4700 mAh, 22.2 V
Optional Battery	5700 mAh, 22.8 V

Operating Frequency	2.4~2.483 GHz
	5.725~5.825 GHz
EIRP	20 dBm @ 2.4G
	13 dBm @ 5.8G

The Inspire 1 UH that will be operated by Vertical Imagery will be registered in accordance with 49 U.S.C. 44103, *Registration of Aircraft*, as well as 14 C.F.R. Part 47, *Aircraft Registration*, and marked in accordance with 14 C.F.R. Part 45, *Identification and Registration Marking*.

Figure 1: DJI T600 "Inspire 1"

PROVEN OPERATIONAL HISTORY OF DJI T600 IN THE NAS

Many DJI T600's are currently operating safely within the NAS both as hobby and commercial UAV's. The UH has onboard stability systems, compass, ground sensing sonic altimeters, and GPS. All of these allow the UH to hover with pinpoint precision and also take off and land autonomously. There is a failsafe built into the system allowing the UH to return to a predetermined point (known as "home") at a predetermined altitude in the event of a control link failure between the aircraft and PIC. It will also automatically return home when the battery has reached a predetermined level, which ensures the aircraft will land before the battery level becomes critical. DJI is the world leader in UAS technology and also makes several other models which have logged

countless hours across the world with great success, giving DJI a reputation for some of the best technology, popularity, and reliability in the industry.

BASIS FOR PETITION

Petitioner, Vertical Imagery, pursuant to the provisions of the Federal Aviation Regulations (14 C.F.R. § 11.61) and the FAA Modernization and Reform Act of 2012, Section 333, Special Rules for Certain Unmanned Aircraft Systems, hereby petitions the Administrator for an exemption from the requirements of 14 C.F.R. §§ 61.113(a) & (b), 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (2), and 91.417(a) & (b), to operate an Unmanned Aircraft System pursuant to Section 333 of the FAA Modernization and Reform Act of 2012. In consideration of the speed, weight, size, and limited operating area associated with the unmanned aircraft and its operation, Vertical Imagery's operation of the DJI Inspire 1 UAS meets the conditions of FMRA Section 333 and therefore, will not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H. In accordance with 14 C.F.R. § 11.81, Vertical Imagery provides the following information in support of its petition for exemption:

NAME AND ADDRESS OF THE PETITIONER

Vertical Imagery LLC
P.O. Box 1345
Ashland, OR 97520

The point of contact for Vertical Imagery's petition and specific contact information is as follows:

Ryan P. Corey
Vertical Imagery LLC
P.O. Box 1345
Ashland, OR 97520
(541) 488-2880
ryan@timberlandhelicopters.com

THE SPECIFIC SECTIONS OF 14 C.F.R. FROM WHICH VERTICAL IMAGERY SEEKS EXEMPTION

14 C.F.R. § 61.113(a) & (b): Private pilot privileges and limitations: Pilot in command.

Sections 61.113(a) & (b) limit private pilots to non-commercial operations. Because the UAV will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the PIC operating the aircraft to have a private pilot's license rather than a commercial pilot's license to operate the small UAV. Unlike a conventional aircraft that carries the pilot and passengers, Vertical Imagery's UAV is remotely controlled with no living thing on board. The area of operation shall be controlled and restricted, and all flights are planned and coordinated in advance as set forth in the Vertical Imagery SOP. The level of safety provided by the requirements included in the SOP exceeds that provided by a single individual holding a commercial pilot's certificate operating a conventional aircraft. The risks associated with the operation of the UAV is so diminished from the level of risk associated with commercial operations contemplated by Part 61 when drafted, that allowing operations of this UAV as requested with a private pilot as the PIC exceeds the present level of safety achieved by 14 C.F.R. §61.113(a) & (b).

14 C.F.R. §91.7(a): Civil aircraft airworthiness.

The regulation requires that no person may operate a civil aircraft unless it is in airworthy condition. As there will be no airworthiness certificate issued for the aircraft, should Vertical Imagery's exemption be granted, no FAA regulatory standard will exist for determining airworthiness. Given the small size and simplicity of the aircraft and the requirements contained in the SOP and Maintenance Manual for maintenance and use of preflight check lists prior to each flight, an equivalent level of safety will be provided.

14 C.F.R. §91.121 Altimeter settings.

The regulation requires each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set "…to the elevation of the departure

airport or an appropriate altimeter setting available before departure." As the UAS does not have a barometric altimeter, but instead a GPS height AGL read out and a sonic ground proximity sensor, an exemption may be needed. An equivalent level of safety will be achieved by way of the UAS recording its position as zero feet AGL upon powering on, and during flight the height AGL is displayed in real time to the PIC's display. The UH is also equipped with a sonic ground proximity sensor which detects height AGL and automatically corrects the flight altitude to help prevent inadvertent flight into terrain.

14 C.F.R. § 91.151(b): Fuel requirements for flight in VFR conditions.

Section 91.151(b) prohibits an individual from beginning "a flight in a rotorcraft under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 20 minutes." The batteries powering the Inspire 1 provide approximately 18 minutes of powered flight, therefore meeting the 20 minute reserve requirement is not possible. Vertical Imagery believes that an equivalent level of safety can be achieved by limiting flights to 25% of remaining battery power. The UAS is also equipped with an audio warning which is set to notify the pilot at a predetermined battery level remaining. If the battery drops below this level, the UH will automatically return home and land, preventing the UH from being in the air when the battery reaches critically low levels. Vertical Imagery's 25% restriction and the UAS's automated systems would be more than adequate to return the UH to its planned landing zone from anywhere in their limited operating area.

14 C.F.R. §91.405(a); 407(a)(1); 409(a)(2); 417(a) & (b): Maintenance inspections.

Given that these sections and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to Vertical Imagery. Maintenance will be accomplished by Vertical Imagery pursuant to the SOP, User Manual, and Maintenance Manual. An equivalent level of safety will be achieved because the UAS will still receive both scheduled and preventative maintenance. As provided in the SOP, Vertical Imagery will ensure that the Inspire 1 is in working order prior to initiating flight, perform

required maintenance, and keep a log of any maintenance performed. Moreover, the operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety.

REASONS WHY GRANTING VERTICAL IMAGERY'S REQUEST WOULD BE IN THE PUBLIC INTEREST

Granting the present petition will further the public interest by allowing Vertical Imagery to safely, efficiently, and economically assist its sister company in performing aerial inspection services of power transmission towers, lines and other public utilities, along with conducting aerial surveys, electronic news gathering, wildland fire perimeter patrols, and aiding is search & rescue operations.

Use of the Vertical Imagery UH for public utilities will increase worker safety by reducing human exposure to climbing towers and reduce the need to fly manned helicopters close to transmission towers for inspection purposes. This will also reduce the amount of time required to perform both routine and emergency inspections of the utilities.

Conducting aerial surveys with the UH will reduce the need to fly biologists low and slow over sometimes heavily forested areas in order to take accurate counts. This will also greatly reduce harassment to wildlife due to the UH having a much smaller, almost imperceptible, noise signature.

Smaller news stations often don't have the budget to pay full sized helicopters to perform aerial work. Utilizing Vertical Imagery's UAS will allow local stations to better gather information and provide the public with more timely and accurate news.

Vertical Imagery works in conjunction with many fire agencies including local, state, and federal who are very interested in the benefits of a UAS to provide better understandings of wildland fire perimeter conditions. This can greatly benefit fire agencies by allowing them to quickly get aerial views of the fire, allowing them to make faster, more informed decisions.

Vertical Imagery also works with several public agencies conducting search and rescue operations. These operations can be enhanced with a UAS by allowing an "eye in the sky" to quickly and efficiently aid in searches.

FLIGHT OPERATIONS

Operations will only be conducted in the continental United States. As stated in Vertical Imagery's SOP, proposed areas of aerial operations include areas that are:

1. Not over congested areas or near large gatherings of people.
2. Not within 5 miles of any airport without airport manager's permission.
3. Not within 100 yards of persons or property non-essential to the mission.
5. UH will remain within visual line of sight of the PIC and VO.
6. No flight above 400 feet AGL.

14 C.F.R. §1.1 defines *rotorcraft* as "a heavier-than-air aircraft that depends principally on its support in flight on the lift generated by one or more rotors." It also defines *helicopter* as "a rotorcraft that, for its horizontal motion, depends principally on its engine driven rotors." The Inspire 1 meets these criteria and therefore should not require a waiver to operate under §91.119 since it can fulfill the requirements of §91.119(d). However, Vertical Imagery will take an added level of safety and not operate over any congested area in addition to operating with extra requirements as per its SOP.

Vertical Imagery will operate its UAV by regulations such as the ICAO (International Civil Aviation Organization) and the FAA’s own national airspace regulations. In order to increase flight safety and prevent accidental flights in restricted areas, thorough preflight action will be taken to ensure no airspace violations will occur. As stated in the SOP, extra measures will also be taken to ensure operations are always conducted in class G airspace in day VMC with 3 miles visibility. Vertical Imagery's customers often require flights to occur with as little as 2-3 hours notice, therefore a requirement to obtain a NOTAM prior to each flight will greatly hinder the ability of Vertical Imagery to fulfill its customers' needs. These are jobs which are normally performed by Vertical Imagery's sister company with a manned helicopter, and being able to do these missions with an unmanned helicopter will not only provide an equivalent level of safety, but introduce an added level of safety and service to Vertical Imagery's customers.

FLIGHT OPERATIONS OF VERTICAL IMAGERY'S UAV IS LIMITED TO LINE OF SIGHT OF THE PIC WITH A VISUAL OBSERVER

Vertical Imagery will only utilize PIC's with a valid Private Pilot rating certificate issued by the FAA for operation of the UAS and a valid Class II Medical Certificate along with extensive company training as listed in the SOP. Additionally, all pilots will be assisted by a Visual Observer. The PIC and VO must meet the requirements as set forth by the SOP which include training, briefings, and remaining within voice communication range throughout the flight. Both the VO and PIC will remain within line of sight of the UH during the operation.

OPERATION OF VERTICAL IMAGERY'S UAV WILL BE CONDUCTED PURSUANT TO THE STANDARD OPERATING PROCEDURES MANUAL

Vertical Imagery's SOP will control operation of the UAS and will significantly contribute to maintaining the level of safety contemplated by the airworthiness certificate requirements from which Vertical Imagery now seeks relief. Pursuant to the Maintenance Manual, User Manual, SOP, and 14 C.F.R. § 43.13, entitled Performance Rules (general), each person performing maintenance, alteration, or preventive maintenance on Vertical Imagery's UH, motors, rotors, hardware, guidance systems or appliances shall use the methods, techniques, and practices prescribed in the current manufacturer's Maintenance Manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods, techniques, and practices acceptable to the Administrator. Each person shall use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accmkojnnk;epted industry practices. A copy of the SOP, Maintenance Manual, and Flight Record & Maintenance Log which is proprietary information to Vertical Imagery, is attached hereto as Exhibit B, and is to be held in a separate file pursuant to 14 C.F.R. § 11.35(b)

CONCLUSION

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 and national security – provide more than adequate justification for the grant of the requested exemptions allowing commercial operation of applicant's UAS pursuant to the manual's appended hereto.

_____

Submitted on April 13, 2015

Ryan P. Corey
Vertical Imagery LLC
P.O. Box 1345
2275 Dead Indian Memorial Road
Ashland, OR 97520
(541) 488-2880
ryan@timberlandhelicopters.com