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

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

September 25, 2015

Exemption No. 12994
Regulatory Docket No. FAA−2015−2742

Mr. David E. Altobelli
Eagle Drone Imaging, LLC
11 Ascot Park
Nashua, NH 03063

Dear Mr. Altobelli:

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 June 25, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Eagle Drone Imaging, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct photography and videography of industrial structures, real estate, and nature/scenic settings.

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 Inspire 1, and a DJI Spreading Wings S1000+.

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, Eagle Drone Imaging, 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, Eagle Drone Imaging, 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 Inspire 1, and the DJI Spreading Wings S1000+ 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 5 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 enclosed 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 September 30, 2017, unless sooner superseded or rescinded.

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

Enclosures

Eagle Drone Imaging, LLC
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June 25, 2015

U.S. Department Of Transportation
Docket Operations
West Building Ground Floor, Room w12-140
1200 New Jersey Avenue, SE., Washington, DC 20590

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

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the reform act) and 14 CFR Part 11, *Eagle Drone Imaging, LLC*, a company that owns and operates Small Unmanned Aircraft Systems (UAS), requests to be exempted from the Federal Aviation Regulations (FAR) listed below so that *Eagle Drone Imaging, LLC* may operate UAS commercially in airspace regulated by the FAA, as long as such operations are conducted within and under the conditions outlined herein or as maybe established by the FAA as required by Section 333.

Company Background and Planned Operations
Eagle Drone Imaging, LLC is a New Hampshire company owned by David E. Altobelli. Mr. Altobelli is a commercially rated helicopter pilot, with a current medical certificate and flight review, and nearly 320 hours as PIC. He also has an estimated 25 hours of experience flying UAS and is familiar with the operations and the maintenance of the hardware and software updates for these systems.
Operations will involve collection of aerial imaging and sensor data to enable inspections and assessments of industrial structures, agricultural management and surveys, and photography and videography (e.g. land and water based venues for imaging real-estate, natural/scenic settings, outings, functions and events).

Equivalent Level of Safety
The requested exception would permit the operation of a lightweight (less than 55 lbs. total takeoff weight) UAS under controlled conditions for commercial use by a certified commercial helicopter pilot thereby enhancing safety and fulfilling the Secretary of Transportation's (the FAA Administrator's) responsibility to" establish requirements for safe operation of such aircraft systems in national airspace

systems", Section 333(c) of the Reform Act. The enhanced safety using a UAS in comparison to a manned aircraft, including helicopters of significantly greater proportion and carrying a crew with flammable fuel is self-evident and beneficial to the public's interest, while being able to provide commercially beneficial information and data more quickly, accurately, safely and economically with greatly reduced environmental impact. All operations will be conducted from safe and appropriate distances for the specific operation. All operations will be performed with the public's safety and right to privacy safeguarded at all times.

UAS Devices

Eagle Drone Imaging's UAS(s) are battery-powered, weighing well less than 55 pounds including payload. Our UAS fleet will include the DJI Phantom Series, the DJI Inspire Series, and the Spreading Wings Series of RC multi-prop helicopters. The specific UAS(s) to be initially included in our fleet:

Parameter	DJI Phantom 2 Vision Plus	DJI Inspire 1	Spreading Wings S1000+
Type	4 Prop RC helicopter	4 Prop RC helicopter	8 Prop RC helicopter
Weight	2.7 lbs.	6.47 lbs.	24.2 lbs. max
Flight Speed (max)	29 knots	42 knots	42 knots
Flight Time	20 min.	18 min.	15 min.
Camera	Integrated	Integrated	DSLR camera

They operate at speeds well less than 87 knots and have the capability to hover and move in the vertical and horizontal planes simultaneously in a precisely controlled manner. Our primary intent is to utilize them at much slower speeds for our imaging and data collection applications. As upgrades become available, we would like to be able to incorporate the more advanced systems in each series into our operations after we have thoroughly reviewed new documentation and have trained to be capable and comfortable with their flying characteristics.

Statutory Authority for Exemptions

Eagle Drone Imaging, LLC submits this application in accordance with the Reform Act , 112 P.L. 95 331-334, seeking relief from any currently applicable FAR'S operating to prevent *Eagle Drone Imaging, LLC* from future commercial use of small UAS to operate in the national airspace system as described below. The reform Act section 332 provides for such integration of civil unmanned aircraft into our national airspace system as it is in the public's interest to do so. *Eagle Drone Imaging, LLC*'s UAS(s) will meet the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of these UAS are expressly contemplated by the Reform Act. *Eagle Drone Imaging, LLC* would like to operate its' light weight UAS(s) prior to the time period by which the Reform Act requires the FAA to promulgate rules governing such aircraft.

The Reform Act directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in national airspace before completion of the rule making required under Section 332 of the reform Act. In

making this determination, the Secretary of Transportation is required to determine which UAS do create a hazard to users of the national airspace system or the public or pose a threat to national security in light of the following:

-The UAS size, speed, weight and operational capability

- Operation of the UAS in close proximity to airports and populated areas

-Operation of the UAS within visual line of sight of the operator

Reform Act 333(a). If the secretary determines that such vehicles "may operate safely in National Airspace System, the secretary shall establish requirements for the safe operation in national airspace.

Eagle Drone Imaging, LLC utilizes multi-prop RC helicopters weighing less than 55 lbs. that operate at speeds less than 50 knots and have the capability to hover and operate in the vertical and horizontal plane simultaneously in a precisely controlled manner. The UAS will operate only within the visual line-of-sight of the operator within a controlled flight area and at 400 feet above ground level (AGL) or less. Most operations are envisioned at less than 100 feet AGL. These will not present a hazard to the national airspace nor the public.

The very small nature of these UAS combined with the risk management presented below, will allow for the safe operation greater than that envisioned by Congress for the FAA to establish and by exemption allowing commercial operations of UAS to commence immediately. Also due to the size of UAS and the controlled areas and the low altitudes in which they will operate, approval of this exemption presents no national security issues and absolutely minimal safety concerns which have been mitigated through our risk management process. Given the clear direction given in Section 333 of the Reform Act, the authority contained in the Federal Aviation Act, as amended, the strong equivalent level of enhanced safety, reduced emissions utilizing UAS verses traditional aircraft as well as the economic impact of greatly reducing the cost of aerial data and imaging acquisition thereby benefits the greater public's interest. Accordingly, the applicant requests that the FAA grant the requested exemption without delay.

Regulations For Exemption Request

Eagle Drone Imaging, LLC respectfully requests the grant of an exemption to the following specific sections of the Title 14 Code of Federal regulations allowing it to operate lightweight UASs for commercial use:

Regulation	Brief Description
14 CFR 21, subpart H	Air Worthiness Certificates
14 CFR 45.23 (b)	Identification and Registration Marking
14 CFR 91.7 (a)	Civil Aircraft Worthiness
14 CFR 91.9 (b) (2)	Civil aircraft flight manual, marking, and placard requirements
14 CFR 91.103 (b)	Preflight action
14 CFR 91.109	Flight instruction; Simulated instrument flight and certain flight tests
14 CFR 91.119	Minimum safe altitudes
14 CFR 91.121	Altimeter settings
14 CFR 91.151(a)	Fuel requirements for flight in VFR conditions
14 CFR 91.203(a) &(b)	Civil Aircraft: Certifications required
14 CFR 91.405(a)	Maintenance required
14 CFR 91.407(a)(1)	Operation after maintenance, preventive maintenance, rebuilding, or alteration.
14 CFR 91.409(a)&(b)	Inspections

A more detailed request for regulation exemptions is provided in Appendix A below.

Operational Risk Management: Conditions and Limitations

The following are our proposed procedures and limitations for the flight operations of *Eagle Drone Imaging, LLC.* These proposed guidelines will be modified as such from recommendations provided by the FAA in conjunction with the submission of this request:

1. Flights will only occur during the daytime hours.
2. Flights will be operated in the visual line-of-sight (VLOS) of the operator (PIC) and the visual observer (VO) using human vision with no supplemental devices other than corrective lenses.
3. Flights will be terminated at any time the weather and wind deteriorate to being "unsafe for flight" based on manufacturers recommendations and the PIC's experience. Operations will follow the anticipated guidelines of this

exemption (operations under visual meteorological conditions-VMC, and standard visual flight rules-VFR)

4. All documents, manuals and maintenance logs associated with the UAS will be present on the site of operations. In addition, the credentials of the PIC (pilot certificate, pilot logbook with current flight review, current medical, and proper identification) will be available onsite.
5. The UAS will be assessed for airworthiness by the PIC prior to each flight session using a checklist derived from the manufacturers manual. All necessary calibrations and testing prior to the flight session will be performed.
6. The UAS will weigh less than 55 lbs. with speeds well less than 87 knots.
7. Flights will be operated at 400 feet AGL or less, or as defined from the outcome of this request for exemption.
8. Crew will be at a minimum of the operator (PIC) and an observer and/or camera operator (VO). The PIC will be responsible for flying the UAS and monitoring its status and flight dynamics, while maintaining line of sight visualization and keeping the system operations within the specified factory limits (e.g. flight range, battery power, etc.). The VO will be involved in monitoring the airspace for other aircraft, the ground for unintended vehicles and bystanders, and will also look for additional hazards that could compromise safe operations.
9. Operator (PIC) and crew, including the VO will remain in voice contact during the entire flight operation
10. Prior to operations, weather forecasts, weather radar, and air traffic patterns for the area will be reviewed. The proximity of the intended location with respect to airports and TFRs will be determined using Foreflight software on our iPad or mobile phones. If operations are anticipated within 5 nautical miles of airport reference points, the airport management or Air Traffic Control (ATC) tower will be notified prior to the operation, identifying the location, anticipated time, and the intent of flight operations. We will also have available a hand-held portable radio to enable monitoring of local air traffic and to establish, if necessary, communication with the local tower. When in the vicinity of non-towered airports, we will monitor air traffic in the area and be able to inform them of our operations as needed.
11. The UAS PIC will perform a final check of the flight area and make certain of the safety of all persons present and property in the controlled area prior to initiating flight operations.
12. All UAS will have the capability to return automatically to the operator in a safe manner in the event of lost RC communication or a system problem. The auto-return function will be checked and verified for proper operation on a regular basis. A starting GPS home-position will be established prior to continuing each new flight.
13. The UAS will have indicators on the control and/or displays to inform the operator of the UAV's distance away from the operator, its altitude and velocity, and its remaining battery power.

14. Written and/or oral permission from the relevant property holders will be obtained when flights are conducted over private or controlled access property.

Benefits to the Public as a Whole

Approval of these 333 exemptions in general would allow commercial operations of small UAS to provide numerous services that would benefit from aerial imaging and data collection while greatly enhancing safety by reducing the overall risk associated with traditional aircraft. Traditional aerial imaging requires large aircraft, such as helicopters, with flammable fuel to fly in close proximity of populated areas and people and often in sub-optimal states of their height-velocity curves. With the use of small UAS of 55 lbs. or less that are battery operated and flying below 400 feet AGL, the risk of injury of people on the ground or the crew is greatly minimized in comparison. The granting of the use of these small UAS by *Eagle Drone Imaging, LLC* will allow companies like ours to grow and provide career opportunities while also enabling safe and beneficial free enterprise services that would assist other companies in their business and also provide enjoyment and information to the general public.

Eagle Drone Imaging, LLC respectfully requests the FAA grant its exemption without delay. The FAA has the authority to issue the exemption sought by *Eagle Drone Imaging, LLC* pursuant to the Federal Aviation Act, 85 P.L. 726 (1958) as amended (the ACT).

Please contact me if I can provide additional information and clarity to help expedite the process.

Sincerely

David E. Altobelli
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Commercial Pilot Rotorcraft-Helicopter
Certificate Number: 3358875 (20 Nov 2010)

Appendix A: Regulations for Requested Exemption

Regulation Code	Brief Description	Regulation Description	Justification for Regulation Exemption
14 CFR 21, subpart H, 14 CFR §91.203 (a) (1)	Air Worthiness Certificates	Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR §91.203(a)(1).	Given the size, weight and defined area of operations for *Eagle Drone Imaging, LLC* UAS flights permits exception from Part 21 because they meet an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 USC 4470(f) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UASs from airworthiness certificates in consideration of weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. The UAS to be operated are less than 55 lbs. fully loaded, carry neither pilot nor passenger, carry no explosive materials or flammable fuels, and operates within a secured controlled area. Operations under this exemption will be tightly controlled and monitored to ensure safe operations.
14 CFR §45.23 (b)	Marking of Aircraft	The regulation requires: When marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable.	Even though the UAS will have no airworthiness certificate, an exemption may be needed as the UAS will have no entrance to the cabin, cockpit or pilot station on which the word Experimental" can be placed. Given the size of the UAS, two-inch lettering will not be possible. The word "Experimental" will be placed on the fuselage in compliance with §45.29 (f). The equivalent level of safety will be provided by having the UAS marked on its fuselage as required by §45.29 (f) where the pilot, observer and others working with the UAS will see the identification of the UAS as "Experimental." The FAA has issued the following exemptions to this regulation to Exemptions Nos. 10700, 8738, 10167 and 10167A. If required, the N registration number will also be displayed on the fuselage in a font size appropriate for the dimension of the device for identification purposes.
14 CFR §91.7 (a)	Civil Aircraft	The regulation requires that no	Given the size of the aircraft and the

	Worthiness	person may operate a civil aircraft unless it is in airworthy condition. As there will be no airworthiness certificate issued for the aircraft, should this exemption be granted, no FAA regulatory standard will exist for determining airworthiness.	requirements contained in the Manufacturers Operating Manual for maintenance and use of safety checklists prior to each flight, an equivalent level of safety will be provided.
14 CFR §91.9 (b) (2)	Civil aircraft flight manual	No person may operate a U.S.-registered civil aircraft ... (2) For which an Airplane or Rotorcraft Flight Manual is not required by §21.5 of this chapter, unless there is available in the aircraft a current approved airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof.	The UAS, given its size and configuration has no ability or place to carry such a flight manual on the aircraft, not only because there is no pilot on board, but because there is no room or capacity to carry such an item on the aircraft. The equivalent level of safety will be maintained by keeping the flight manual at the ground control point where the pilot flying the UAS with immediate access to it. The FAA has issued the following exemptions to this regulation: Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 32827, and 10700.
14 CFR §91.103 (b)	Preflight action	This regulation requires each pilot in command become familiar with all information concerning that flight including runway distances and takeoff and landing distances, with this data provide in FAA approved rotorcraft flight manuals will not be provided for the aircraft an exemption will be needed.	Flight information such as runway distances and flight performance are not relevant to the operation of UAS. The equivalent action is that the PIC will review airspace considerations, weather, flight battery requirements, land and property boundaries with respect to takeoff and landing locations. Manuals for the UAS will present on site of all operations.
14 CFR §91.109	Flight instruction; Simulated instrument flight and certain flight tests	This section provides that no person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls.	UAS are remotely piloted aircraft, by their design do not have fully functional dual controls. Flight control is accomplished through the use of a control box that communicates with the aircraft via radio communications. The FAA has approved exemptions for flight training without fully functional dual controls for a number of aircraft and for flight instruction in experimental aircraft. See Exemption Nos.5778K & 9862A. The equivalent level of safety can be achieved as neither a pilot nor passengers will be carried in the aircraft in addition to the small size and low speed of the aircraft.
14 CFR §91.119	Minimum safe altitudes	Section §91.119 establishes safe altitudes for operation of civil aircraft. Section §91.119 (d) allows helicopters to be operated at less than the minimums prescribed, provided the person operating the	This exemption is for a UAS that is a RC multi-prop helicopter with the exemption requesting authority to operate at altitudes up to 400 AGL. The equivalent level of safety will be achieved given the size, weight, and

		helicopter complies with any route or altitudes prescribed for helicopters by the FAA.	speed of the UAS as well as the location where it is operated. No flight will be taken without the permission of the property owner or local officials.
14 CFR §91.121	Altimeter settings	This 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."	The UAS typically may not have a barometric altimeter, but instead a GPS altitude read out, an exemption may be needed. An equivalent level of safety will be achieved by the operator, pursuant to the Manual and Safety Check list, by receiving altitude information via a digitally encoded telemetric data feed, which downlinks from the aircraft to a ground-based on-screen display. This altitude information will be generated by equipment installed on board the aircraft, using GPS triangulation, or digitally encoded barometric altimeter, or radio altimeter, or any combination thereof. Prior to each flight, a zero altitude initiation point will be established, recorded and confirmed for accuracy by the pilot.
14 CFR §91.151(a)	Fuel requirements for flight in VFR conditions	Section §91.151 (a) prohibits an individual from beginning "a flight in an airplane 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 – (1) During the day, to fly after that for at least 30 minutes; or (2) At night, to fly after that for at least 45 minutes."	The battery powering the UAS provides approximately 20 minutes of powered flight. To meet the 30 minute reserve requirement in 14 CFR §91.151, UAS flights would not be practical. Given the limitations on the UAS's proposed operations are within the "line-of –sight" distances, flight durations will instead be determined by remaining battery life. Telemetry indicators provide indication of remaining battery life. At 25 percent remaining battery life, the sequence to bring operations to completion will be initiated. Similar exemptions have been granted to other operations, including Exemptions 2689F, 5745, 10673, and 10808.
14 CFR §91.203(a) &(b)	Civil Aircraft: Certifications required	The regulation provides in pertinent part: (a) Except as provided in § 91.715, no person may operate a civil aircraft unless it has within it the following: (1) An appropriate and current airworthiness certificate . . (b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight	The UAS fully loaded weighs no more than 55 lbs. and is operated without an onboard pilot. As such, there is no ability or place to carry certification and registration documents or to display them on the UAS. An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the UAS will have immediate access to them, to the extent they are applicable to

		authorization issued under §91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.	the UAS. The FAA has issued numerous exemptions to this regulation. A representative sample of other exceptions includes Exemption Nos. 9565, 9665, 9789, 9789A, 9797, 9797A, 9816A, and 10700.
14 CFR §91.405(a) §91.407(a)(1) §91.409(a)&(b)	Operation after maintenance, preventive maintenance, rebuilding, or alteration.	These regulations require that an aircraft operator or owner "shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part43 of this chapter...," and others shall inspect or maintain the aircraft in compliance with Part 43.	Given that these sections and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the applicant. The operator pursuant to the flight manual and operating handbook will accomplish maintenance. Software and firmware will be maintained with current versions. As the manufacturer does not provide specific maintenance instructions, maintenance will be "on condition" for all aircraft and each aircraft will have a maintenance log.
References	Part 91 General Operating and Flight Rules	weblink	
	Part 45 Identification and Registration Marking	weblink	
	Petitioning for Exemption Under Section 333	weblink	