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

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

July 13, 2015

Exemption No. 12018
Regulatory Docket No. FAA–2015-1358

Mr. Mark Burgess
Managing Member
AirSight Global LLC
1206 Laskin Road
Virginia Beach, VA 23451

Dear Mr. Burgess:

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 20, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of AirSight Global LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography, video, inspection, and data collection.

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 Phantom 2.

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, AirSight Global 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, AirSight Global 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 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

United States Department of Transportation
Docket Management System
1200 New Jersey Ave, SE
West Building Ground Floor Room W12-140
Washington, DC 20590

RE: Exemption Request Under Section 333 of the Federal Aviation Administration Modernization and Reform Act of 2012 and Part 11 of the Federal Aviation Regulations

Dear Sir or Madam:

AirSight Global LLC submits the enclosed request for exemption from multiple regulatory provisions of the Federal Aviation Administration (FAA) in order to allow the use of small unmanned aerial systems. Appendices B, C and D referenced in the request for exemption contain trade secret and commercial proprietary information that AirSight Global LLC has not and will not share with others except under appropriate confidentiality agreements. These appendices contain operating conditions and procedures that have been developed exclusively by AirSight Global, LLC, and that are not available to the public. AirSight Global LLC is requesting that these appendices be treated as proprietary information pursuant to 14 C.F.R. Section 11.35, and maintains that they are protected from release under the Freedom of Information Act. See 5 U.S.C. 552 *et seq*.

Sincerely,

Mark Burgess, Managing Member
AirSight Global LLC

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

Regulatory Docket No. _____

IN THE MATTER OF THE PETITION FOR EXEMPTION OF:
AIRSIGHT GLOBAL LLC
FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF TITLE 14 OF THE CODE OF FEDERAL REGULATIONS SECTIONS 21.185, 45.23(b), 61.113(a), 91.7(a), 91.9(b)(2)&(c), 91.103, 91.109(a), 91.119(c), 91.151(a), 91.203(a), 91.405(a), 91.407(a)(1), 91.409(a)(2), 91.417(a) CONCERNING OPERATION OF UNMANNED AIRCRAFT SYSTEMS OVER THE STATE OF VIRGINIA PURSUANT TO SECTION 333 OF THE FAA MODERNIZATION AND REFORM ACT OF 2012

Submitted on April 20, 2015

Mark Burgess, Managing Member
AirSight Global LLC

Contents

GLOSSARY OF ABBREVIATIONS

ASG	AirSight Global LLC
AGL	Above Ground Level
ATC	Air Traffic Control
COA	Certificate of Authorization
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
NAS	National Airspace System
Section 333	FAA Modernization and Reform Act of 2012, Section 333
SMS	Safety Management System
sUAS	Small Unmanned Aircraft Systems
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
PIC	Pilot in Command
SOP	Standard Operating Procedures
VT	Virginia Polytechnic Institute
FOM	Flight Operations Manual
PQS	Personnel Qualification System
VO	Visual Observer
VLOS	Visual Line of Sight

SUMMARY

AirSight Global LLC (ASG) seeks exemption from the requirements of 14 C.F.R. §§ 21.185, 45.23(b), 61.113(a), 91.7(a), 91.9(b)(2)&(c), 91.109(a), 91.119(c), 91.151(a), 91.203(a), 91.405(a), 91.407(a)(1), 91.409(a)(2), 91.417(a), as set forth in Appendix A. This exemption will permit ASG to use qualified personnel holding a current private pilot license and class II medical to operate Small Unmanned Aircraft Systems ("sUAS") in the performance of commercial applications, while keeping the documents required by the regulations at the ground control station and immediately accessible to the pilot in command (PIC).

Furthermore, the exemption will relieve ASG from the airworthiness certificate standards, inspection, and maintenance requirements, and the requirement to have a certificate of airworthiness issued for its sUAS. This exemption will also permit any required markings concerning the operational status of the UAS to be displayed on the fuselage of the unmanned aircraft.

INTRODUCTION AND INTERESTS OF THE PETITIONER

AirSight Global LLC, formed and operated by former US Naval and current FAA certified pilots, has created proprietary operating procedures, which consist of the following: Standard Operating Procedures (Appendix B), an Inspection and Maintenance Manual (Appendix C), and a DJI Phantom Operating Manual (Appendix D). ASG intends to use a DJI Phantom II sUAS and attached electro-optical sensor to conduct aerial photography in support of multiple industries including real estate, infrastructure inspection, precision agriculture, market research, testing, and surveying using still photographs, video and other supporting data so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.

As detailed in this document and the attached proprietary appendixes, the requested exemptions would permit the operation of the sUAS under controlled conditions in airspace that is 1) limited 2) predetermined 3) controlled as to access and 4) would provide safety enhancements to the collection of aerial media.

Approval of this exemption would thereby enhance safety and fulfill the Secretary of Transportation's responsibilities to "Establish requirements for the safe operation of such aircraft systems in the national airspace system." Section 333(c) of the Reform Act.

All ASG operators will have a current FAA pilot license and a current Class II medical. All operators will follow the training procedures outlined in the ASG SOPs (Appendix B).

BACKGROUND

Unmanned Aircraft System: DJI Phantom II sUAS (Phantom II)

ASG seeks an exemption to operate DJI Phantom II sUAS for compensation or hire within the NAS. The Phantom II is comprised of a quad rotor unmanned aircraft and a handheld ground control station. The Phantom II has a maximum gross weight of approximately 2.8 pounds, diameter (rotor span) 17 inches, width of 12.5 inches, and height of 8.1 inches. The Phantom II is equipped with four rotors driven by a lithium polymer battery powered electric motor. DJI ensures the sUAS, ground station, and all included electronics comply with all FCC regulations.

BASIS FOR PETITION

Petitioner, ASG, 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. §§ 21.185, 45.23(b), 61.113(a), 61.133(a), 91.7(a), 91.9(b)(2)&(c), 91.109(a), 91.119(c), 91.151(a), 91.203(a), 91.405(a), 91.407(a)(1), 91.409(a)(2), 91.417(a). In the alternative, and in accordance with Federal Aviation Regulation ("FAR") Section 21.16, entitled *Special Conditions* (14 C.F.R. § 21.16), ASG respectfully requests that the Administrator prescribe special conditions for the intended operation of the sUAS named above, that contain such safety standards as the Administrator finds necessary to establish a level of safety equivalent to that established by the restricted category airworthiness certification standards specified in 14 C.F.R. § 21.185.
In accordance with 14 C.F.R. § 11.81, ASG provides the following information in support of its petition for exemption:

Name and Address of the Petitioner:
Mark Burgess, Managing Member
AirSight Global LLC
1206 Laskin Rd
Virginia Beach, VA 23451
anewview@airsightglobal.com
(757) 572-6988

The Specific Sections of 14 C.F.R. From Which ASG Seeks Exemption.

ASG Seeks Exemption From The Requirements of §21.185.

In accordance with the FAA Modernization and Reform Act of 2012, Section 333, and 14 C.F.R. § 21.16 entitled *Special Conditions*, ASG seeks to exempt the named sUAS above from the restricted category airworthiness certification specified in **14 C.F.R. § 21.185**, or the requirement to have a certificate of airworthiness issued, as contemplated by **14 C.F.R. Part 21.185**. Section 21.185 entitled *Issue of airworthiness certificates for restricted category aircraft*, states the following, in part:
(a) Aircraft manufactured under a production certificate or type certificate. An applicant for the original issue of a restricted category airworthiness certificate for an aircraft type certificated in the restricted category, that was not previously type certificated in any other category, must comply with the appropriate provisions of § 21.183.

ASG seeks relief from the airworthiness certificate requirements of the Federal Aviation Regulations and proposes to commercially operate the sUAS, without an airworthiness certificate, for the special purpose of conducting aerial photography over rural areas, pursuant to specific operating limitations and SOPs because operation of the sUAS will not create a hazard to users of the NAS, or the public, or otherwise pose a threat to national security.

Section 333 sets forth the requirements for considering whether a sUAS will create a hazard to users of the NAS or the public or pose a threat to national security. Further, Section 333 provides the authority for such sUAS to operate without airworthiness certification. Specifically, Section 333 states the following, in part:
(b) Assessment of Unmanned Aircraft Systems.--In making the determination under subsection (a), the Secretary shall determine, at a minimum--

1. Which types of unmanned aircraft systems, if any, as a result of their size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight do not create a hazard to users of the national airspace system or the public or pose a threat to national security; and
2. Whether a certificate of waiver, certificate of authorization, or airworthiness certification under section 44704 of title 49, United States Code, is required for the operation of unmanned aircraft systems identified under paragraph (1).

As set forth below, the specific parameters of ASG's intended operations pursuant to this exemption, demonstrate that the named sUAS will operate safely in the NAS without creating a hazard to other aircraft or people on the ground. Accordingly, the FAA may approve operation of these sUAS, without an airworthiness certificate, by setting forth specific operating limitations to ensure a level of safety equivalent to what would be provided by airworthiness certification.

ASG Seeks Exemption From The Requirements Of 61.113(a)

ASG seeks an exemption from **14 C.F.R. § 61.113(a).** Section 61.113(a) entitled *Private pilot privileges and limitations: Pilot in command* states the following:
(a) Except as provided in paragraphs (b) through (h) of this section, no person who holds a private pilot certificate may act as a pilot in command of an aircraft that is carrying passengers or property for compensation or hire; nor may that person, for compensation or hire, act as pilot in command of an aircraft.

As the sUAS 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 current private pilots license, a current class 2 medical.

ASG Seeks Exemption From The Requirements Of 91.7(a)

ASG seeks an exemption from **14 C.F.R. § 91.7(a).** Section 91.7(a) entitled *Civil aircraft airworthiness* states the following:
(a) No person may operate a civil aircraft unless it is in an airworthy condition.

As there will be no airworthiness certificate issued for the sUAS should this exemption be granted, no FAA regulatory standard will exist for determining airworthiness. Given the size of the sUAS and the requirements outlined in the Inspection and Maintenance Manual contained in the SOP (Appendix B), an equivalent level of safety will be provided.

ASG Seeks Exemption From The Requirements Of 91.103

ASG seeks an exemption from **14 C.F.R. § 91.103.** Section 91.103 entitled *Preflight action* states the following:

Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include-

(a) For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC;
(b) For any flight, runway lengths at airports of intended use, and the following takeoff and landing distance information:

1. For civil aircraft for which an approved Airplane or Rotorcraft Flight Manual containing takeoff and landing distance data is required, the takeoff and landing distance data contained therein; and
2. For civil aircraft other than those specified in paragraph (b)(1) of this section, other reliable information appropriate to the aircraft, relating to the aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature.

As FAA approved rotorcraft flight manuals will not be provided with the aircraft an exemption will be required. The PIC will follow the preflight checklist included in the Flight Operations Manual (Appendix B), which meets or exceeds vendor recommendations. The preflight checklist ensures that the PIC checks weather, battery requirements, takeoff and landing location, wind, temperature and sUAS weight in order to provide an equivalent level of safety.

ASG Seeks Exemption From The Requirements Of 91.109(a)

ASG seeks an exemption from **14 C.F.R. § 91.109(a).** Section 91.109(a) entitled *Flight instruction; Simulated instrument flight and certain flight tests* states the following:
(a) No person may operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has a fully function dual controls. However, instrument flight instruction may be given in an airplane that is equipped with a single, functioning throwover control wheel that controls the elevator and ailerons, in place of fixed, duel controls, when-
(1) the instructor has determined that the flight can be conducted safely; and
(2) the person manipulating the controls has at least a private pilot certificate with appropriate category and class ratings.

ASG sUAS is a remotely piloted aircraft and by design, does not have fully function dual controls. Flight control is accomplished through the use of a control box that communicates with the aircraft via radio communications. The equivalent level of safety is provided by the fact that neither a pilot nor passengers will be carried in the sUAS and by the size and speed of the sUAS.

ASG Seeks Exemption From The Requirements Of 91.119(c)

ASG seeks an exemption from **14 C.F.R. § 91.119(c).** Section 91.119(c) entitled *Minimum safe altitudes: General.* State the following:
(c) **Over other than congested areas.** An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

As specified in the SOP (Appendix B), ASG sUAS will never operate higher than 400 feet AGL, will operate outside of congested areas, and will ensure to keep a distance of 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 sUAS and/or debris in the event of an accident. The PIC will ensure that nonparticipating persons remain under such protection, and
b) The aircraft is operated near vessels, vehicles, or structures where the owner/controller of such vessels, vehicles, or structures has granted permission 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, and
c) The operations within 500 feet of the PIC, VO, or essential persons do not present an undue hazard to those persons per § 91.119(a)

In accordance with SOP (Attachment B) all operations will avoid congested or populated areas. The SOP (Attachment B) defines congested areas as those appearing yellow on current FAA approved VFR charts, areas NOTAMs define as congested, or areas the PIC determine are congested or populated.

Due to the size and weight of the sUAS to be used, an equivalent level of safety will be maintained by following these safety procedures.

ASG Seeks Exemption From The Requirements Of 91.151(a)

ASG seeks an exemption from **14 C.F.R. § 91.151(a).** Section 91.151(a) entitled *Fuel requirements for flight in VFR conditions.* State the following:
(a) No person may begin 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 SOP (Appendix B) ensures all flight operations will end while the sUAS has at least 25% reserve battery power. No flight will be outside of the visual line of sight of the PIC and VO, and no flight will exceed 400 ft. AGL. This meets the equivalent level of safety by ensuring the sUAS will always have fuel (battery power) to reach the planned or alternate landing zone from anywhere in its operating area.

ASG Seeks Exemption From The Requirements Of 91.405(a)

ASG seeks an exemption from **14 C.F.R. § 91.405(a).** Section 91.405(a) entitled *Maintenance required* state the following:
Each owner or operator of an aircraft –
(a) 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 part 43 of this chapter.

Maintenance will be accomplished in accordance with the Inspection and Maintenance Plan (Appendix C) and manufacturer recommendations. The PIC will also inspect the sUAS to ensure it is in a condition for safe flight prior to each flight operation in accordance with the preflight procedure outlined in the Inspection and Maintenance Plan (Appendix C).

ASG Seeks Exemption From The Requirements Of 91.407(a)(1)

ASG seeks an exemption from **14 C.F.R. §91.407(a)(1).** Section 91.407(a)(1) entitled *Operation after maintenance, preventive maintenance, rebuilding, or alteration* state the following:
(a) No person may operate any aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless -

1. It has been approved for return to service by a person authorized under §43.7 of this chapter

Maintenance will be performed in accordance with the Inspection and Maintenance Manual (Appendix C). This ensures that an operator, trained in the maintenance procedures in accordance with manufacturer recommendations, performs user level maintenance.

In addition to user level maintenance, ASG will follow the manufacturer recommended maintenance in accordance with the sUAS manuals (Appendix D).

ASG Seeks Exemption From The Requirements Of 91.409(a)(2)

ASG seeks an exemption from **14 C.F.R. § 91.409(a)(2).** Section 91.409 entitled *Inspections* state the following:
(a) Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had-

1. An annual inspection in accordance with part 43 of this chapter and has been approved for return to service by a person authorized by § 43.7 of this chapter; or
2. An inspection for the issuance of an airworthiness certificate in accordance with the part 21 of this chapter.

No inspection performed under paragraph (b) of this section may be substituted for any inspection required by this paragraph unless it is performed by a person authorized to perform annual inspections and is entered as an "annual" inspection in the required maintenance records.

The Inspection and Maintenance Manual (Appendix C) will ensure that the sUAS is inspected in accordance with both ASG standards and manufacturer recommendations. This will ensure an equivalent level of safety is met.

ASG Seeks Exemption From The Requirements Of 91.417(a)

ASG seeks an exemption from **14 C.F.R. § 91.417(a).** Section 91.417 entitled *Maintenance records* state the following:
(a) Except for work performed in accordance with §§ 91.411 and 91.413, each registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:

1. Records of the maintenance, preventive maintenance, and alteration of records of the 100-hour, annual, progressive, and other required or approved inspections, as

appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft. The records must include-

i. A description (or reference to data acceptable to the Administrator) of the work performed; and
ii. The date of completion of the work performed; and
iii. The signature, and certificate number fo the person approving the aircraft for return to service

2. Records containing the following information:
   i. The total time in service of the airframe, each engine, each propeller, and each rotor.
   ii. The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.
   iii. The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.
   iv. The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.
   v. The current status of applicable airworthiness directives (AD) and safety directives including, for each, the method of compliance, the AD or safety directive number and revision date. If the AD or safety directive involves recurring action, the time and date when the next action is required.
   vi. Copies of the forms prescribed by § 43.9(d) of this chapter for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.

The following items will be recorded in a maintenance log for each sUAS pursuant to the Inspection and Maintenance Manual (Appendix C):

- Any unsafe conditions found during preflight inspection.
- All maintenance or alterations that affect the sUAS operation or flight characteristic.
- All functional test flight results.

ASG Seeks Exemption From The Requirements Of 91.203(a)(b)

ASG seeks an exemption from **14 C.F.R. § 91.203(a) and (b).** Section 91.203 entitled *Civil aircraft: Certifications required*, subsections (a) and (b) state the following:
(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. Each U.S. airworthiness certificate used to comply with this subparagraph (except a special flight permit, a copy of the applicable operations specifications issued under § 21.197(c) of this chapter, appropriate sections of the air carrier manual required by parts 121 and 135 of this chapter containing that portion of the operations specifications issued under § 21.197(c), or an authorization under § 91.611) must have on it the registration number assigned to the aircraft under part 47 of this chapter. However, the airworthiness certificate need not have on it an assigned special identification number before 10 days after that number is first affixed to the aircraft. A revised airworthiness certificate having on it an assigned special identification number, that has been affixed to an aircraft, may only be obtained upon application to an FAA Flight Standards district office.

(2) An effective U.S. registration certificate issued to its owner or, for operation within the United States, the second copy of the Aircraft registration Application as provided for in § 47.31(c), or a registration certification issued under the laws of a foreign country.
(b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under § 91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

ASG requests relief from the requirement of Section 91.203(a) (*i.e.,* that an appropriate and current airworthiness certificate and an effective U.S. registration certificate be carried within the aircraft), and further, requests relief from the requirement of Section 91.203(b) (*i.e.,* that the airworthiness certificate be displayed at the cabin or cockpit entrance so that it is legible to passengers or crew) due to the fact that the sUAS are unmanned, have no cabin, cockpit, pilot station, or entrances thereto. Therefore, the aircrew member is located at a ground control station and no passengers are carried at any time. As such, ASG proposes the following conditions and limitations to its request for exemption from Sections 91.203(a) and (b):

- The documents required by Sections 91.203(a) and (b) must be kept at the ground control station, where it is immediately available to the PIC of the sUAS any time the unmanned aircraft is operating.
- The documents required by 91.203(a) and (b) must be made available within 10 days to any FAA, U.S. Department of Defense, or law enforcement official upon request.

ASG Seeks Exemption From The Requirements Of Section 45.23(b)

ASG seeks an exemption from **14 C.F.R. § 45.23(b)**. Section 45.23 entitled *Display of marks; general*, subsection (b), states the following:

(b) 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.

ASG requests relief from the requirement of Section 45.23(b), as the sUAS is unmanned, has no cabin, cockpit, pilot station, or entrances thereto, the is no way to comply with this requirement. Therefore, ASG proposes that, if required, the word "Restricted" be displayed in letters horizontally on the fuselage of the sUAS.

ASG Seeks Exemption From The Requirement Of Section 91.9(b)

ASG seeks an exemption from **14 C.F.R. § 91.9(b).** Section 91.9 entitled *Civil aircraft flight manual, marking, and placard requirements*, subsection (b) states the following:
(b) No person may operate a U.S.-registered civil aircraft-- (1) For which an Airplane or Rotorcraft Flight Manual is required by § 21.5 of this chapter unless there is available in the

aircraft a current, approved Airplane or Rotorcraft Flight Manual or the manual provided for in § 121.141(b); and (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.

ASG requests relief because there is no cockpit. Furthermore, since the sUAS is unmanned, the aircrew member is located at a ground control station. As such, ASG proposes the following conditions and limitations to its request for exemption from Section 91.9(b):

- The approved Airplane Flight Manual must be kept at the ground control station, where it is immediately available for reference by the aircrew member (PIC) of the respective sUAS any time the unmanned aircraft is operating.
- The approved Airplane Flight Manual must be made available within 10 days to any FAA, U.S. Department of Defense, or law enforcement official upon request.

Reasons Why Granting ASG's Request Would Be In The Public Interest

Granting the present petition will further the public interest by allowing ASG to safely, efficiently, and economically perform commercial operations over rural areas. The use of sUAS will decrease congestion of the NAS, reduce pollution, and provide significant benefits to the economy. Notably, the benefits of the proposed operation of the sUAS will be realized without implicating any privacy issues.

ASG submits this Petition to perform aerial photography in rural areas. The sUAS will provide safe, efficient, and economical aerial inspections, which will supplement the effectiveness and efficiency of current ground and aerial inspections systems.

The Public Will Benefit From Decreased Congestion Of The NAS

ASG will use battery powered sUAS that serve as safe, efficient, and economical alternatives to the manned aircraft commonly utilized to perform aerial photography. An exemption allowing the use of sUAS would reduce the amount of manned aircraft in the NAS, reduce noise and air pollution, as well as increase the safety of life and property in the air and on the ground.

Furthermore, by reducing the number of manned aircraft operating in the NAS, congestion around airports caused by arriving and departing aircraft will be reduced. These sUAS do not require an airport to takeoff or land. Likewise, a reduction of manned aircraft conducting aerial inspection missions would result in fewer aircraft that must be handled by air traffic control during the ground, takeoff, departure, arrival, and landing phases of flight operations.

The Public Will Benefit From The Reduced Pollution Of sUAS

Conducting aerial inspections with sUAS, instead of manned aircraft, will greatly benefit the public by drastically reducing the levels of air and noise pollution generated during traditional aerial inspection flight operations. By using battery power and an electric motor, sUAS produces minimal air pollution, and are the most viable environmentally conscious alternative to the turbine helicopter typically utilized for aerial inspection, which burns approximately 20-30 gallons per hour of aviation fuel. sUAS, while reducing the carbon footprint of aerial inspection, also eliminates noise pollution as the battery powered electric motors are barely audible during the take-off phase, and cannot be heard when operating more than 100 feet above ground level.

By using sUAS to perform aerial inspection, the substantial risk to life and property in the air and on the ground, which is usually associated with traditional manned aircraft flight operations, will be substantially reduced or completely eliminated. Aside from the lack of aircrew members located onboard the aircraft, sUAS (weighing between two and ten (2-10) pounds at its maximum gross weight and no fuel on board), have less physical potential for collateral damage to life and property on the ground, and in the air, compared to the manned aircraft that typically conduct aerial inspection (weighing approximately 6,500 pounds and a fuel capacity of 180 gallons).

Performing Aerial Photography Operations With sUAS Will Benefit The Economy

In addition to being safe and efficient, sUAS are also an economical alternative to using manned aircraft to conduct aerial photography. As such, operation of sUAS will allow ASG to remain competitive and contribute to growth of the U.S. economy. Specifically, with the rising cost of aviation fuel U.S. owned and operated companies must adopt new and alternative technology in order to remain competitive.

Operating a battery powered sUAS is one such technology that not only allows companies greater operational flexibility compared to manned aircraft, but provides such flexibility without the high operational cost of a traditional manned aircraft.
By operating a sUAS, companies such as ASG can remain competitive and profitable, and therefore provide greater job stability to employees and contractors, which will ultimately contribute to growth of the U.S. economy. Improved financial performance of U.S. companies, through commercial use of sUAS, provides a stable workforce that increases consumer spending; improves local, state, and federal tax revenues; and allows companies to invest in research and development in order to remain competitive both in the United States and abroad.

In addition to overall company benefits, ASG is a veteran owned and managed enterprise in a community that has a larger than average population of veterans or active military. ASG is committed to employing veterans, who according the Bureau of Labor Statistics have a larger unemployment rate than non-veterans.

There Are No Privacy Issues

Like the manned aerial photography flight operations that have been conducted for decades, the proposed operation will not implicate any privacy issues. Specifically, sUAS will be operated only in rural areas, and in accordance with all Federal Aviation Regulations. All operations will follow the privacy mitigation controls outlined in the SOP (Appendix B).

A Summary That Can Be Published In The *Federal Register,* Stating:

The Rules From Which ASG Seeks Exemption:

AirSight Global LLC seeks exemption from the requirements of 14 C.F.R. §§ 21.185, 45.23(b), 61.113(a), 91.7(a), 91.9(b)(2)&(c), 91.109(a), 91.119(c), 91.151(a), 91.203(a), 91.405(a), 91.407(a)(1), 91.409(a)(2), 91.417(a).

A Brief Description Of The Nature Of The Exemption ASG Seeks:

This exemption will permit AirSight Global LLC to operate small unmanned aircraft systems while keeping the documents required by the regulations at the ground control station and immediately accessible to the pilot in command. Furthermore, the exemption will relieve AirSight Global LLC from the airworthiness certificate standards and the requirement to have a certificate of airworthiness for its small Unmanned Aircraft System. This exemption will also permit any required markings concerning the operational status of the sUAS to be displayed on the fuselage of the unmanned aircraft.

CONCLUSION

As set forth above, ASG seeks an exemption pursuant to 14 C.F.R. § 11.61 and Section 333 of the FAA Modernization and Reform Act of 2012, which will permit safe operation of the above-named sUAS commercially, without an airworthiness certificate, for the special purpose of conducting infrastructure inspections over certain rural areas in the Commonwealth of Virginia. By granting this Petition, the FAA Administrator will be fulfilling the Congressional mandate of the FAA Modernization and Reform Act of 2012, while also advancing the interests of the public, by allowing ASG to safely, efficiently, and economically operate the Phantom II commercially within the NAS.

Submitted on April 20, 2015

Respectfully submitted,

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