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

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

June 5, 2015

Exemption No. 11769
Regulatory Docket No. FAA–2015–0896

Mr. Kevin D. Barth
Vice President of Flight Operations and Co-Owner
Aerial Imaging Technologies LLC dba Aeritek
2370 Merri Anne Drive
Jacksonville, FL 32216

Dear Mr. Barth:

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 1, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Aerial Imaging Technologies LLC dba Aeritek (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography, inspections, photogrammetry, precision agriculture, and mapping.

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 S-900 and the 3D Robotics Aero-M.

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, Aerial Imaging Technologies LLC dba Aeritek 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, Aerial Imaging Technologies LLC dba Aeritek 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 S-900 and 3D Robotics Aero-M when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

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

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

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

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

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

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and

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

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

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

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

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

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

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

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

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

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

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

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

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

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

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

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

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

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

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

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

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

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

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS−80) within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

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

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

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

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

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

This exemption terminates on June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

United States of America
Department of Transportation
Federal Aviation Administration
Washington, DC

Regulatory Docket No._____

IN THE MATTER OF THE PETITION FOR EXEMPTION OF:

Aerial Imaging Technologies LLC, dba Aeritek

FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF TITLE 14 OF THE CODE OF FEDERAL REGULATIONS SECTIONS 14 CFR Part 21 Subpart H, 45.23(b), 61.113(a) and (b), 91.7(a), 91.9(b)(2), 91.103, 91.109(a), 91.119(c), 91.121, 91.151(a), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), 91.417(a) and (b) CONCERNING THE OPERATION OF THE DJI S900 AND 3D ROBOTICS AERO-M SMALL UNMANNED AIRCRAFT SYSTEMS PURSUANT TO THE FAA MODERNIZATION AND REFORM ACT OF 2012, PUBLIC LAW 112-95 FEBRUARY 14 2012, SECTION 333

Submitted on April 1st, 2015

Aerial Imaging Technologies LLC,
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April 1st, 2015

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

Dear Mr. Rob Pappas:

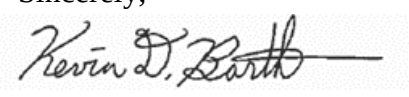
I, Kevin D. Barth, am writing, in my capacity as VP of Flight Operations and co-owner of Aerial Imaging Technologies LLC, dba Aeritek of Jacksonville, FL, hereinafter referred to as Aeritek, pursuant to the Federal Aviation Administration Modernization and Reform Act of 2012, (FMRA) Public Law 112-95 February 14, 2012, Section 333 requesting exemption from the applicable Federal Aviation Regulations (FARS) contained herein to operate small unmanned aircraft systems (sUAS) within the National Airspace System (NAS) for commercial purposes of which are in the public interest.

Specifically, Aeritek wants to engage in commercial operations that allow us to operate two sUAS's. The first sUAS we intend to operate is a DJI S900 rotorcraft. The second sUAS we intend to operate is a 3D Robotics Aero-M. Having a combination of a rotorcraft and a fixed wing sUAS will allow us to provide our clients with a sUAS that is appropriate for their needs. The DJI S900 will be primarily used for aerial photography, and inspections, while the 3D Robotics Aero-M will be primarily used for photogrammetry, precision agriculture, and mapping.

Enclosed within this application for exemption, one will find the following documents: "*Aeritek sUAS, PIC, and Operation of sUAS", and "Aeritek Operation Manual".* The aforementioned documents are submitted as confidential documents under 14 CFR §11.35(b), as they contain confidential and proprietary information that Aeritek has not and will not share with others. These documents contain operating conditions and procedures that are not available to the public and are protected from release under the Freedom of Information Act, 5 U.S.C. §552 et seq.

If you have any questions or require additional information, please contact me at any time. We look forward to working with your office to promote and maintain the safest National Airspace System in the world.

Sincerely,



Kevin D. Barth

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SUMMARY

Aeritek seeks exemption from the requirements of 14 CFR Part 21 Subpart H, 45.23(b), 61.113(a) and (b), 91.7(a), 91.9(b)(2), 91.103, 91.109(a), 91.119(c), 91.121, 91.151(a), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), 91.417(a) and (b) to operate unmanned aircraft systems pursuant to the Federal Aviation Administration Modernization and Reform Act of 2012, Public Law 112-95 February 14, 2012, Section 333. This exemption will allow Aeritek to operate two small unmanned aircraft systems (sUAS), the DJI S-900 and the 3D Robotics Aero-M for the purpose of aerial photography, photogrammetry, inspections, precision agriculture, and mapping.

INTRODUCTION OF PETITIONERS

Aeritek, headquartered in Jacksonville, FL, is a recently formed partnership within the State of Florida that intends to engage in commercial sUAS operations after official exemption by the FAA is received pursuant to the FMRA Section 333.

Aeritek was founded by owners, Grant Ward, President, and Kevin Barth, Vice President of Flight Operations. Both of the founders have a strong passion for developing a sUAS company that provides clients with a range of precise aerial imaging solutions through the safe and legal competitive advantage an FAA exemption brings.

In addition to their passion, both of them have a significant amount of experience and qualifications related to the sUAS and manned aircraft industries. Grant worked for Link Division of the Singer Company installing and maintaining flight simulators for the US Air Force. He has flown radio control helicopters and rotorcrafts for recreational purposes for the last eight years; as well as professional building of sUAS. Over the course of those eight years, he has accumulated approximately 1500 hours of flying sUAS's. With an electrical engineering degree from Ohio Institute of Technology, Grant has knowledge and experience relating to maintaining, building and repairing of sUAS.

Kevin holds a B.S. in Aviation Management and Flight Operations from Jacksonville University. The aviation management portion of his degree consisted of the business core that included subjects such as: accounting, quantitative analysis, microeconomics, macroeconomics, along with the aviation core that included subjects such as: Aviation Law, Advanced Air Traffic Control, Crew Resource Management (CRM), Advanced Aircraft Systems of the B-777 and CRJ 700, and Aviation Automation. The Flight Operations portion of his degree, allowed him to earn his commercial single and multi-engine pilot certificates along with his Certified Flight Instructor certificate while going to school at the same time.

In support of the FAA's continuing mission to provide the safest, and most efficient aerospace system in the world, Kevin appreciates those efforts as he had an internship at American Airlines within the flight safety department. While working within the flight safety department at American, Kevin gained valuable experience with different Safety Management Systems (SMS). Some of those SMS programs included: FOQA, Flight ASAP, Cabin ASAP, and LOSA. In addition, he got to observe the flight and cabin ASAP ERT where the Airlines,

Union, and FAA representatives are present. Those experiences demonstrates his high regard for safety in all aerospace operations, whether, manned, or un-manned, and provides Aeritek with a safety first mindset.

With the above listed experiences and knowledge, Aeritek has an excellent combination that will allow them to safely operate sUAS's for commercial purposes upon the granting of an exemption by the FAA.

INTERESTS OF PETITIONERS

Aeritek's mission is to provide clients with accurate aerial imaging solutions that are obtained through the safe and legal use of sUAS's to create efficient and technical analysis for applications that will benefit industries and organizations such as: construction companies, precision agriculture, and utility companies.

The operation below is a specific example of a property that Aeritek seeks to conduct photogrammetry and crop scouting to show methodology of operations for explanatory purposes of this exemption. However, Aeritek does not want to limit itself to the specific property described below. Accordingly, Aeritek will comply with existing FAA procedures and the document titled, "*FAA UAS Civil COA Request*" before operations are conducted within the NAS to ensure safety.

As described within this application for explanatory purposes, Aeritek seeks to operate its DJI S900 and 3D Robotics Aero-M sUAS's over a rural piece of property located in Putnam County, Florida for purposes of photogrammetry and crop scouting to allow for a more efficient application of fertilizers which ultimately reduces the negative effects on the environment which is in the public interest.

The COA process makes applicable FAA Air Traffic Control facilities aware of proposed UAS operations, and provides the FAA the ability to consider airspace issues unique to UAS operations.

RELEVANT STATUTORY AUTHORITY

With the passage of the FAA Modernization and Reform Act of 2012 (FMRA), Public Law 112-95 February 14, 2012, Congress has directed the FAA to "safely accelerate the integration of civil unmanned aircraft systems into the National Airspace System. Pursuant to Section 333 of the FMRA, the Secretary of Transportation is to consider whether certain unmanned aircraft systems may operate safely in the NAS before completion of the formal UAS rulemaking that is predicated to go into effect in September of 2015. Based on FMRA Sections 333 (a) through (c) below: Aeritek believes it fits within the prescribed statutory requirements.

SEC. 333. SPECIAL RULES FOR CERTAIN UNMANNED

AIRCRAFT SYSTEMS.

(a) IN GENERAL.— Notwithstanding any other requirement of this subtitle, and not later than 180 days after the date of enactment of this Act, the Secretary of Transportation shall determine if certain unmanned aircraft systems may operate safely in the national airspace system before completion of the plan and rulemaking required by section 332 of this Act or the guidance required by section 334 of this Act.
H. R. 658—66

(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).

(c) REQUIREMENTS FOR SAFE OPERATION.—If the Secretary determines under this section that certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe

Accordingly, if the Secretary of Transportation determines that such sUAS's may operate safely within the NAS, the Secretary shall establish requirements for the safe operation of such aircraft in the NAS. The proposed operations in this petition for exemption qualify for expedited approval under Section 333 above. Each of the statutory criteria and other relevant factors are satisfied.

NAME AND ADDRESS OF PETITIONER

Grant Ward – President and Co-Owner – grant.ward@aeritek.com
Kevin D. Barth - VP of Flight Operations and Co-Owner - kevin.barth@aeritek.com

Aerial Imaging Technologies LLC
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THE SPECIFIC SECTION OR SECTIONS OF 14 CFR FROM WHICH AERITEK SEEKS AN EXEMPTION

Part 21, Subpart H prescribes, in pertinent part, the procedural requirements for issuing airworthiness certificates.

Section 45.23(b) prescribes, in pertinent part, that 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.

Section 61.113(a) and (b) prescribe, in pertinent part, that—

> (a) No person who holds a private pilot certificate may act as a pilot in command (PIC) of an aircraft that is carrying passengers or property for compensation or hire; nor may that person, for compensation or hire, act as PIC of an aircraft.
>
> (b) A private pilot may, for compensation or hire, act as PIC of an aircraft in connection with any business or employment if—
>
> > (1) The flight is only incidental to that business or employment; and
> >
> > (2) The aircraft does not carry passengers or property for compensation or hire.

Section 91.7(a) prescribes, in pertinent part, that no person may operate a civil aircraft unless it is in an airworthy condition.

Section 91.9(b)(2) prohibits operation of U.S.-registered civil aircraft 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.

Section 91.103 prescribes, in pertinent part, that each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight, to 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 aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature.

Section 91.109(a) prescribes, in pertinent part, 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.

Section 91.119 prescribes that, except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

> (a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.
>
> (b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.
>
> (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.
>
> (d) Helicopters, powered parachutes, and weight-shift-control aircraft. If the operation is conducted without hazard to persons or property on the surface—
>
> > (1) A helicopter may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section, provided each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA; and
> >
> > (2) A powered parachute or weight-shift-control aircraft may be operated at less than the minimums prescribed in paragraph (c) of this section.

Section 91.121 requires, in pertinent part, 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."

Section 91.151(a) prescribes that 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, during the day, to fly after that for at least 30 minutes.

Section 91.405(a) requires, in pertinent part, that an aircraft operator or owner shall have that aircraft inspected as prescribed in Subpart E of the same part and shall, between required

inspections, except as provided in paragraph (c) of the same section, have discrepancies repaired as prescribed in part 43 of the chapter.

Section 91.407(a)(1) prohibits, in pertinent part, any person from operating an aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration unless it has been approved for return to service by a person authorized under § 43.7 of the same chapter.

Section 91.409(a)(2) prescribes, in pertinent part, that no person may operate an aircraft unless, within the preceding 12 calendar months, it has had an inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.

Section 91.417(a) and (b) prescribes, in pertinent part, that—

> (a) 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 and 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 of 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.

(b) The owner or operator shall retain the following records for the periods prescribed:

(1) The records specified in paragraph (a)(1) of this section shall be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.

(2) The records specified in paragraph (a)(2) of this section shall be retained and transferred with the aircraft at the time the aircraft is sold.

(3) A list of defects furnished to a registered owner or operator under § 43.11 of this chapter shall be retained until the defects are repaired and the aircraft is approved for return to service.

THE EXTENT OF RELIEF AERITEK SEEKS AND THE REASON WHY AERITEK SEEKS THE RELIEF

1) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR Part 21 Subpart H

Relief from 14 CFR Part 21, *Certification procedures for products and parts*, Subpart H, *Airworthiness certificates*, is requested to the extent that would allow Aeritek to operate its two sUAS's without an airworthiness certificate.

Aeritek seeks relief because it meets the requirements for exemption that's in accordance with the statutory criteria provided in Section 333 of PL 112-95 in reference to 49 USC 44704 given the size, weight, speed, and limited operating area, proximity to airports and populated areas associated with the aircraft and its operation.

2) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 45.23(b)

Relief from 14 CFR 45.23(b), *markings of aircraft* is requested to the extent Aeritek is exempt from displaying the words, "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable near the entrance.

Aeritek seeks relief because the sUAS's has no entrance to the cabin, cockpit, or pilot station on which the word "Experimental" can be placed. In addition, Aeritek's sUAS's will not be certificated under 14 CFR 21.191 as it meets the requirements in Section 333 of PL 112-95.

3) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 61.113(a) and (b).

Relief from 14 CFR 61.113(a) and (b), *Private pilot privileges and limitations*, is requested to the extent Aeritek is exempt from the limitation that a private pilot may not engage in compensation or hire operations. Under current regulations, civil operations for compensation or hire require a PIC holding a commercial pilot certificate per 14 CFR part 61. Based on the private pilot limitations in accordance with pertinent parts of 14 CFR § 61.113(a) and (b), a pilot holding a private pilot certificate cannot act as a PIC of an aircraft for compensation or hire unless the flight is only incidental to a business or employment.

Aeritek seeks relief because in Grant of Exemption No. 11062 to Astraeus Aerial (Astraeus), the FAA determined that a PIC with a private pilot certificate operating the Astraeus UAS would not adversely affect operations in the NAS or present a hazard to persons or property on the ground. Additionally, as previously determined by the Secretary of Transportation, the requirement to have an airman certificate ameliorates security concerns over civil UAS operations conducted in accordance with Section 333.

4) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 91.7(a)

Relief from 14 CFR 91.7(a), *Civil aircraft airworthiness*, is requested to the extent Aeritek is exempt from operating an aircraft in an airworthy condition.

Aeritek seeks relief based on the fact that no airworthiness certificate will be issued for the sUAS's and that no FAA regulatory standard exists for determining airworthiness. Aeritek feels compliance with its operating documents to be a sufficient means for determining an airworthy condition.

5) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 91.9(b)(2)

Relief from 14 CFR 91.9(b)(2), *Civil Aircraft Flight Manual*, is requested to the extent Aeritek is exempt from having a current approved Airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof in the aircraft.

Aeritek seeks relief due to the fact the aircraft is not only too small to carry the aircraft flight manual documentation, the documentation would not be available to the crew.

6) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 91.103

Relief from 14 CFR 91.103, *Preflight Action*, is requested to the extent Aeritek is not required to become familiar with certain information, specifically, information contained in the FAA-Approved Flight Manual on board the aircraft. The PIC will be familiar with all information necessary to safely conduct the flight, just not the FAA-Approved Flight Manual because it is non-existent.

Aeritek seeks relief because an FAA-Approved Flight Manual will not be non-exist. Although, there will be no approved Airplane or Rotorcraft Flight Manual available, Aeritek will still comply with other applicable requirements of 14 CFR 91.103(b)(2).

7) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 91.109(a)

Relief from 14 CFR 91.109(a), *Flight Instruction*, is requested to the extent Aeritek is not required to have fully functioning dual controls for an aircraft that is being used for flight instruction.

Aeritek seeks relief because their sUAS's by design, do not have functional dual controls. Instead, flight control is accomplished through the use of a remote control that communicates with the aircraft via radio communications.

8) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 91.119(c)

Relief from 14 CFR 91.119(c), Minimum Safe Altitude, is requested to the extent Aeritek may operate below 400 feet above the surface and away from any person, vessel, vehicle, or structure in non-congested areas. Section 91.119 prescribes the minimum safe altitude under which aircraft may not operate, including 500 feet above the surface and away from any person, vessel, vehicle, or structure in non-congested areas. Aeritek will have a maximum operating altitude of 400 feet AGL.

Aeritek seeks relief due to the fact that since the aircraft will be operating at a maximum altitude of 400 feet above the surface, we cannot comply with this requirement, therefore, we request exemption.

9) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 91.121

Relief from 14 CFR 91.121, *Altimeter Setting*, is requested to the extent Aeritek is not required to have a barometric altimeter. The current regulation requires a person operating an aircraft to maintain cruising altitudes or flight level by reference to an altimeter that is set to the elevation of the departure point or barometric pressure. Accordingly, Aeritek will have a GPS altitude readout instead of barometric altimeter.

Aeritek seeks relief due to the fact that their sUAS's do not have a barometric altimeter.

10) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 91.151(a)

Relief from 14 CFR 91.151(a), *Fuel Requirements*, is requested to the extent to operate at less than the minimums prescribed within 14 CFR 91.151(a). The current regulation provides that no person may begin a flight in an airplane under day-VFR conditions unless there is enough fuel to fly to the first point of intended landing and to fly thereafter for 30 minutes. Aeritek feels the intention of this section is to provide a reserve of "energy" as a safety buffer.

Aeritek seeks relief due to the fact that relief has been granted for manned aircraft to operate at less than the minimums prescribed in 14 CFR § 91.151(a), including Exemption Nos. 2689, 5745, and 10650. In addition, similar UAS-specific relief has been granted in Exemption Nos. 8811, 10808, and 10673 for daytime, VFR conditions.

11) Extent of Relief Aeritek Seeks and the Reason Aeritek Seeks relief from 14 CFR 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), 91.417(a) and (b)

Relief from 14 CFR 91.405(a), *Maintenance Required*, 91.407(a)(1), *Operation after maintenance, preventive maintenance, rebuilding, or alteration*, 91.409(a)(1) and (2) *Inspections*, and 91.417(a) and (b) *Maintenance records*, is requested to the extent that the regulations listed above do not apply to the sUAS's Aeritek intends to operate.

Aeritek seeks relief due to the fact that the sections listed above and Part 43 only apply to aircraft with an airworthiness certificate, which Aeritek's sUAS's will not have.

THE REASONS WHY GRANTING AERITEK AN EXEMPTION WOULD BE IN THE PUBLIC INTEREST, THAT IS, THE PUBLIC AS A WHOLE

Congress has already proclaimed that safe integration of sUAS's into the National Airspace System is in the public's interest. Granting Aeritek's exemption request is in the public interest for multiple reasons described below:

I. Conducting aerial photography, inspections, photogrammetry, crop scouting, and topographical mapping in manned aircraft poses a much greater risk to the general public than operating a sUAS's proposed herein that weighs less than 25 pounds. Manned aircraft capable of performing the same operations typically weigh between 2,000 pounds and 5,000 pounds, much greater than the weight of a sUAS, and poses a much greater safety risk to the general public. In addition, manned aircraft carry significantly greater proportions of flammable fuel which causes a much greater risk to the safety of the general public and can inflict a lot more damage as opposed to the sUAS's.

II. In terms of emissions and reducing the overall level of carbon dioxide, sUAS's have a fraction of the carbon footprint as compared to the much higher carbon footprint of manned aircraft. Since emissions and negative impacts on the atmosphere would be reduced, sUAS's as proposed herein would be in the public's interest.

III. In terms of environmental impact, the beneficial information received from photogrammetry and crop scouting allows farmers within the agriculture industry the ability to reduce the amount of fertilizer containing phosphorus by means of precision application made possible by sUAS's. Since fertilizer containing phosphorus usually makes its way into lakes and rivers causing negative effects, reduction of such fertilizer would be in the public's interest.

IV. In terms of estimating, calculating, and documenting soil erosion by performing aerial photography and topographic mapping, sUAS's can provide this analytical data for a reduced cost and higher safety margins as opposed to having manned aircraft conduct similar operations. That data is in the interest of the public and can provide community and government agencies with critical information that would not have been practical without the use of sUAS's to capture that data.

V. In addition, granting an exemption for Aeritek will help the FAA with the research and data collection efforts to develop and promulgate rules applicable to commercial sUAS's operations. Aeritek is more than willing to assist in this effort. Indirectly, the public will benefit from this information because it will lead to a safer NAS.

THE REASONS WHY GRANTING AERITEK AN EXEMPTION WOULD NOT ADVERSELY AFFECT SAFETY, HOW THE EXEMPTION WOULD PROVIDE A LEVEL OF SAFETY AT LEAST EQUAL TO THAT PROVIDED BY THE RULE FROM WHICH AERITEK SEEKS THE EXEMPTION

1) Reasons why granting exemption from 14 CFR Part 21 Subpart H does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M, each weigh less than 25 pounds with payload, does not carry a pilot or passengers, carries no explosives or flammable liquid fuels, and operates within non-congested areas. The appropriate FAA facility will have advance notice of all operations through the existing process of the certificate of authorization which has applicable mitigation factors that provide an equal and greater level of safety. In terms of national security, the sUAS's do not pose a threat due to the size, speed, weight, lack of explosives or flammable liquid fuels, and inability to carry substantial external load.

2) Reasons why granting exemption from 14 CFR 45.23(b) does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will be registered and marked on the fuselage or frame in accordance with 14 CFR Part 47 and 14 CFR Part 45. This is in accordance with previous FAA exemptions.

3) Reasons why granting exemption from 14 CFR 61.133(a) and (b) does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will be operated by the Pilot in Command (PIC) with a minimum of a private pilot license and second class medical. The level of safety described above is consistent with exemption no. 11062 to Astraeus in which the FAA determined that a PIC with a private pilot certificate operating the UAS would not adversely affect operations in the NAS or present a hazard to persons or property on the ground. The FAA Press Release on February 15, 2015, titled, *DOT and FAA Propose New Rules for Small Unmanned Aircraft Systems*, describes that under the proposed rule, the person actually flying a small UAS would be an "operator." An operator would have to be at least 17 years old, pass

an aeronautical knowledge test and obtain an FAA UAS operator certificate. To maintain certification, the operator would have to pass the FAA knowledge tests every 24 months. Accordingly, Aeritek's pilots will exceed the existing and proposed standards regarding the NAS regulations, see and avoid, and situational awareness concepts etc. because they have a current private pilot certificate. Therefore, an exemption to Aeritek does not adversely affect safety, and provides an equivalent or higher level of safety as described above. Additionally, as previously determined by the Secretary of Transportation, the requirement to have an airman certificate ameliorates security concerns over civil UAS operations conducted in accordance with Section 333 of the FMRA of 2012.

4) Reasons why granting exemption from 14 CFR 91.7(a) does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M have an outstanding safety record that demonstrates they are in fact airworthy. Additionally, given the size of sUAS's described above, the procedures regarding preflight safety checks described below ensures that safety will not be adversely affected and provides an equivalent level of safety. Not to mention, the FAA has granted the following exemptions to 14 CFR 91.7(a): 10167, 10602, and 10700.

5) Reasons why granting exemption from 14 CFR 91.9(b)(2) does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will have the appropriate flight manuals at the ground station where the PIC of the sUAS has immediate access to it at all times, instead of the manual being in the physical aircraft. The safety related purposes of this manual requirement will not adversely affect safety by having the flight manual at the ground station and is an equivalent level of safety. Additionally, the FAA has granted numerous exemptions to the above regulation.

6) Reasons why granting exemption from 14 CFR 91.103 does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will not have an FAA approved flight manual on board the aircraft, however, the PIC will take all required preflight actions that include:

review of current and forecast weather, takeoff and landing distances, aircraft performance data given current conditions at time of operation, before the commencement of each flight. Therefore, safety will not be adversely affected and an equivalent level of safety will be provided by following the conditions and limitations described below.

7) Reasons why granting exemption from 14 CFR 91.103 does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will not have an FAA approved flight manual on board the aircraft, however, the PIC will take all required preflight actions that include: review of current and forecast weather, flight battery requirements, takeoff and landing distances, aircraft performance data given current conditions at time of operation, before the commencement of each flight. Therefore, safety will not be adversely affected and an equivalent level of safety will be provided because Aeritek's PIC will take certain actions before each flight to ensure safety of flight described within the operating documents.

8) Reasons why granting exemption from 14 CFR 91.109(a) does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will conduct training during dedicated training sessions. Given the size and speed of the sUAS's described above, an equivalent level of safe training can still be performed without fully functioning dual controls because there will be no non-participating persons in the vicinity when dedicated training sessions are being conducted.

9) Reasons why granting exemption from 14 CFR 91.119(c) does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will remain at appropriate distances from non-participating persons. In open areas, the sUAS's will remain 500 feet away from all persons other than essential flight personnel that includes the PIC and Visual Observer (VO). In non-open areas, if barriers or structures are present that can sufficiently protect non-participating persons from debris in event of an accident, Aeritek seeks to operate closer than 500 feet from persons afforded such protections. In

regards to aircraft separation between manned aircraft, operating at a maximum altitude of 400 feet allows a 100 foot safety buffer zone between manned and unmanned aircraft which provides an equivalent level of safety similar in concept to Reduced Vertical Separation Minimums (RVSM). Aeritek will also have the permission of the property owner prior to conducting such operations so the necessary precautions can be taken to minimize any risks to non-participating persons. Additionally, the excellent safety record of the sUAS's described above demonstrates these sUAS's can be operated safely at lower altitudes and closer operating environments.

10) Reasons why granting exemption from 14 CFR 91.121 does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will have a GPS altitude readout in feet AGL which is consistent with the proper reporting of altitude to (ATC). The PIC will confirm that the altitude at the operation site matches the GPS altitude readout. Additionally, the PIC will constantly monitor as part of a "scan" that will ensure the sUAS's are operated below the maximum altitude of 400 feet. Therefore, safety will not be adversely affected and the equivalent level of safety is described above.

11) Reasons why granting exemption from 14 CFR 91.151(a) does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will have their flights terminated by the PIC with no less than 25% remaining battery power available. This restriction is more than adequate to return the sUAS's described above to the landing area from any location within the operating area where VLOS is maintained. Accordingly, the aforementioned does not adversely affect safety and provides an equivalent level of safety. Additionally, the restriction described above is consistent with FAA exemption Nos. 8811, 10808, and 10673 for daytime, VFR conditions.

12) Reasons why granting exemption from 14 CFR 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), 91.417(a) and (b) does not adversely affect safety and associated equivalent level of safety

The sUAS's Aeritek intends to operate, specifically, the DJI S900 and the 3D Robotics Aero-M will be operated in accordance with operating documents

where the operator will: perform the necessary preflight inspections to determine airworthiness prior to flight, perform required maintenance, and will keep a log of any maintenance performed. As described in Appendix A, the PIC will conduct detailed inspections after every 10 hours of flight time and maintain a log of those inspections. Maintenance performed by the PIC is limited to updating software, firmware, replacing propellers, and any preventative maintenance. Accordingly, the procedures described above and contained within Appendix A ensure that safety is not adversely affected and provide an equivalent level of safety given the sUAS's size, weight, and speed.

FEDERAL REGISTRY SUMMARY

Pursuant to 14 CFR 11.81, information to include for exemption, subpart F, the below summary is provided for publication in the Federal Register:

The section or sections Aeritek seeks exemption:

Aeritek seeks exemption from the requirements of 14 CFR Part 21 Subpart H, 45.23(b), 61.113(a) and (b), 91.7(a), 91.9(b)(2), 91.103, 91.109(a), 91.119(c), 91.121, 91.151(a), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), 91.417(a) and (b) to operate unmanned aircraft systems pursuant to the Federal Aviation Administration Modernization and Reform Act of 2012, Public Law 112-95 February 14, 2012, Section 333.

Brief description of the nature of exemption Aeritek seeks:

This exemption will allow Aeritek to operate two small unmanned aircraft systems (sUAS), the DJI S-900 and the 3D Robotics Aero-M for the purpose of aerial photography, photogrammetry, inspections, precision agriculture, and mapping.