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

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

September 8, 2015

Exemption No. 12791
Regulatory Docket No. FAA–2015–2070

Mr. Michael A. Triana, Jr.
CEO
KVARA, Inc.
1250 121st Street
Whiting, IN 46394

Dear Mr. Triana:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

By letter dated May 18, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of KVARA, Inc. (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial 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 are the DJI Inspire 1, 3D Robotics Solo, Microdrones MD4-200, Microdrones MD4-1000, and Microdrones MD4-3000.

In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, KVARA, Inc. 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, KVARA, Inc. 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 DJI Inspire 1, 3D Robotics Solo, Microdrones MD4-200, Microdrones MD4-1000, and Microdrones MD4-3000 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 September 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:
KVARA, INC.
FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF
TITLE 14 OF THE CODE OF FEDERAL REGULATIONS
SECTIONS 61.113(a) and (b); 91.7(a); 91.119(c); 91.151(a); 91.405(a);
91.407(a)(1); 91.409(a) and 91.417(a)
CONCERNING OPERATION OF AN UNMANNED AIRCRAFT SYSTEMS
OVER THE STATES OF ALASKA (AK), ARIZONA (AZ), CALIFORNIA (CA), COLORADO (CO), FLORIDA (FL), HAWAII (HI), ILLINOIS (IL), INDIANA (IN), IOWA (IA), KANSAS (KS), KENTUCKY (KY), MICHIGAN (MI), MINNESOTA (MN), MISSOURI (MO), MONTANA (MT), NEBRASKA (NE), NEVADA (NV), NEW MEXICO (NM), NORTH DAKOTA (ND), OHIO (OH), OKLAHOMA (OK), PENNSYLVANIA (PA), SOUTH DAKOTA (SD), TEXAS (TX), UTAH (UT), VIRGINIA (VA), WASHINGTON (WA), WEST VIRGINIA (WV) AND WISCONSIN (WI) PURSUANT TO
SECTION 333 OF THEFAA MODERNIZATION AND REFORM ACT OF 2012

Submitted on May 18, 2015

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GLOSSARY OF ABBREVIATIONS

AGL	Above Ground Level
ATC	Air Traffic Control
COA	Certificate of Authorization
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
NAS	National Airspace System
Section 333	FAA Modernization and Reform Act of 2012, Section 333
SMS	Safety Management System
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
UAV	Unmanned Aerial Vehicle
VFR	Visual Flight Rules
VMC	Visual Meteorological Condition
VO	Visual Observer

OVERVIEW

KVARA, Inc. (hereinafter referred to as "KVARA") seeks exemption from the requirements of Title 14 C.F.R. Sections 61.113(a) and (b); 91.7(a); 91.119(c); 91.151(a); 91.405(a); 91.407(a)(1); 91.409(a) and 91.417(a). This exemption will permit KVARA to operate an Unmanned Aircraft System ("UAS") over certain non-populated areas in the States of AK, AZ, CA, CO FL, HI, IL, IN, IA, KS, KY, MI, MN, MO, MT, NE, NV, NM, ND, OH, OK, PA, SD, TX, UT, VA, WA, WV and WI 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 KVARA from the airworthiness certificate standards and the requirement to have a certificate of airworthiness issued for its UAS. If applicable, 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.

ABOUT THE PETITIONER AND INTERESTS

KVARA is a services company specializing in aerial data capture using unmanned aircraft systems (UAS). We'll utilize a variety of safe, ultra-light and easy to use unmanned aerial vehicles (UAV's) for data collection combined with high-resolution aerial photography, video and orthoimagery. This will produce actionable information that results in increased safety, substantially lower costs, increased yields and higher profits for our clients.

UAS TO BE USED

As set forth in this petition for exemption, KVARA seeks to operate its roster of UAS for high-resolution/ precision aerial photography and video for use in mapping, land survey applications and inspections.

Unmanned Aircraft System(s):

DJI- Inspire 1
3DR- Solo Quadcopter
MICRODRONES MD4-200
MICRODRONES MD4-1000
MICRODRONES MD4-3000

KVARA seeks an exemption to operate a small number of UAS for specific applications in different industries/environments for compensation or hire within the national airspace system ("NAS"). The UAS listed above is comprised of a transportable ground station. If required, KVARA will submit an Aircraft Registration Application upon the grant of the exemptions sought by this Petition.

REQUEST FOR PETITION

Petitioner, KVARA, hereby petitions the Administrator for an exemption from:

Title 14 C.F.R. Sections 61.113(a) and (b); 91.7(a); 91.119(c); 91.151(a); 91.405(a); 91.407(a)(1); 91.409(a) and 91.417(a) .

The specific details regarding this request for exemption are included in this document and represent the current interests and specializations of KVARA. The exemption would allow operation by KVARA for the purpose of precision aerial photography and video for use in mapping, land survey applications and inspections.

The name and address of the Petitioner is:

MICHAEL A. TRIANA JR.
1250 121St Street
Whiting, Indiana 46394
Tel: (219) 512-2714
Website: www.kvara.us
Email: kvarainc@yahoo.com

The point of contact for this Petition and specific contact information is as follows:

SAME AS ABOVE

(1) EXEMPTION REQUEST AND EQUIVALENT LEVEL OF SAFETY SHOWINGS UNDER APPLICABLE RULES SUBJECT TO EXEMPTION

A. KVARA requests an exemption from the following regulations as well as any additional regulations that may technically apply to the operation of the KVARA UAS:

The following is a list of the exemptions with a discussion of the equivalent level of safety for each item for which exemption is being requested.

14 C.F.R. § 61.113(a) & (b); Private Pilot Privileges and Limitations; Pilot in Command; Commercial Pilot Privileges and Limitations.

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

14 C.F.R. § 91.119(c): Minimum Safe Altitudes

14 C.F.R. § 91.151(a): Fuel Requirements for Flight in VFR Conditions

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

B. The Reasons Why Granting KVARA's Request Would be in the Public Interest; That Is, How It Would Benefit the Public as a Whole.

Granting the present Petition will further the public interest by allowing KVARA to safely, efficiently, and economically perform aerial operations/acquisition over the States of AK, AZ, CA, CO FL, HI, IL, IN, IA, KS, KY, MI, MN, MO, MT, NE, NV, NM, ND, OH, OK, PA, SD, TX, UT, VA, WA, WV and WI performing mapping and land survey and inspection applications in support of utility, energy, transportation, agriculture, mining, natural recourses, wildlife monitoring, civil engineering and construction, while also furthering the development of the nation's economy related to several industries. Additionally, use of the KVARA's UAS will decrease congestion of the NAS, reduce pollution, and provide significant benefits to the economy and the environment. Notably, the benefits of the proposed operation of the chosen KVARA UAS will be realized without impacting any privacy issues.

C. The Public Will Benefit From Aerial Acquisition/Operation Performed

KVARA submits this Petition to perform precision aerial photography and video throughout the states of, AK, AZ, CA, CO FL, HI, IL, IN, IA, KS, KY, MI, MN, MO, MT, NE, NV, NM, ND, OH, OK, PA, SD, TX, UT, VA, WA, WV and WI in support of utility, energy, transportation, agriculture, mining, natural recourses, wildlife monitoring, civil engineering and construction.

The KVARA UAS will provide safe, efficient, and economical aerial acquisition to further each of these fields/industries, all of which are critical to the well being of the general public. The specific operations that KVARA will perform using its chosen UAS provide many advantages compared to manned aerial photography operations and traditional land survey. The use of the UAS will allow for increased safety, timely, less costly and more site-specific data capture than is possible with traditional methods. The types of work planned for the KVARA UAS include, but are not limited to, safety and asset inspections, utility inspection and monitoring, industrial facility inspections, surveying for land development, geospatial services, mapping and planning new worksites, environmental monitoring, remediation planning and monitoring.

D. Public Benefit From Reduced Congestion of the NAS.

The KVARA UAS will provide a safe, efficient, and economical, non-polluting alternative to the traditional manned aircraft more commonly used in the past. All of the KVARA UAS will use an electric motor propulsion system that is powered by low-voltage batteries. By using our chosen UAS for these planned applications, one can expect a significantly reduced number of manned aircraft used to perform aerial acquisitions in these regions. The requested exemptions allowing the use of the KVARA UAS will also have the added benefit of reducing noise and air pollution, as

well as increasing the safety of life and property in the air and on the ground. The size, weight and mass of these small UAS as compared to manned aircraft will greatly enhance the safety of acquiring precision survey data. Additionally, by reducing the number of manned aircraft operating in the NAS, congestion around airports caused by arriving and departing aircraft will be reduced and an added benefit of increased safety may be experienced.

The KVARA UAS do not require an airport to takeoff or land. Therefore, a reduction of manned aircraft conducting aerial inspection and or survey missions would help to reduce the aircraft that must be handled by air traffic control during the everyday ground, takeoff, departure, arrival, and landing phases of flight operations.

E. Public Benefit From the Safety and Efficiency of the current KVARA UAS

By performing aerial acquisitions with the UAS, as opposed to manned aircraft, a benefit to the public will be experienced. A reduction of air and noise pollution can greatly affect the environment and the public as a whole, compared to traditional aerial survey flight operations. Using UAS with its battery and electric motor components create a viable environmentally conscious alternative to the cabin class, internal combustion twin-engine aircraft that are typically used for such aerial photographic operations today. The KVARA UAS, will reduce its carbon footprint by conducting its aerial acquisitions, all the while also eliminating noise pollution. The UAS battery powered electric motor is barely audible during the takeoff phase, and cannot be heard when operating more than 100 feet above ground. By reducing manned operations whenever possible and using UAS for certain flight operations, the overall benefit is a lesser chance for personal injury or a property damage incident.

F. Performing Aerial Acquisition Operations with the KVARA UAS Will Benefit the Economy

KVARA will continue to engage in business development and will strive to spur new job growth as it evolves into an aerial data capture -service leader. Because of its focus on safety and positive environmental impact, KVARA will stay one step ahead, adopting newer and better technologies and methodologies.

KVARA UAS and its services are safe, efficient and are an economical alternative to using manned aircraft to conduct aerial acquisitions. Because of increasing operational costs due to increasing aviation fuel prices and the costs of Environmental Protection Agency (“EPA”) regulatory actions, U.S. owned and operated companies must adopt new and alternative technology in order to remain competitive. KVARA will 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 the UAS, provides a stable workforce that increases consumer spending; improves local, state, and federal tax revenues; and allows companies to invest and reinvest in research and development in order to remain competitive.

G. Privacy Issue Concerns

The proposed use of the KVARA UAS will not create privacy issues nor will it violate any privacy laws when being used for the purposes stated in this petition. KVARA's UAS will be operated only in non-populated areas, restricted personnel access areas, rural areas, and in accordance with all Federal Aviation Regulations, including the minimum and maximum altitude requirements of 14 C.F.R. § 91.119. Most importantly, the UAS will not be operated closer than 500 feet to any person, vessel, vehicle, or structure, except when necessary for takeoff or landing.

(2) EXEMPTION REQUEST AND EQUIVALENT LEVEL OF SAFETY SHOWINGS UNDER APPLICABLE RULES SUBJECT TO EXEMPTION

KVARA requests an exemption from the following regulations as well as any additional regulations that may technically apply to the operation of its UAS:

14 C.F.R. § 61.113(a): Private Pilot Privileges and Limitations; Pilot in Command; Commercial Pilot Privileges and Limitations. Section 61.113(a) limits private pilots to non-commercial operations. Unlike a conventional aircraft that carries a pilot, passengers, and cargo, KVARA's UAS are remotely controlled carrying no pilot, no passengers or freight on board. KVARA respectfully proposes that operator requirements should take into account the characteristics of the particular UAS being used and the environment the UAS are being used in.

Because there are several safety features with each of its UAS, KVARA proposes that operators of its UAS should not be required to hold a commercial pilot certification. KVARA notes that the FAA has found that safety factors permitted operation of UASs by operators with these qualifications in the case of operations pursuant to public COAs where the mandatory operating conditions specified above are present. See Federal Aviation Administration, Notice N-8900.227, Unmanned Aircraft Systems (UAS) Operational Approval, at 20-21 (July 30, 2013). The FAA has the statutory authority, granted at 49 U.S.C.§44701(f) to waive the pilot requirements for commercial operations. Given these conditions and restrictions, an equivalent level of safety will be provided by allowing operation of the KVARA UAS by individuals with a valid private pilot's certificate. Under the conditions set forth herein, the risks associated with the operation of the UAS (given its size, speed, operational capabilities, and lack of combustible fuel) are so diminished from the level of risk associated with other commercial operations contemplated by Part 61 with conventional aircraft (fixed wing or rotorcraft), that allowing operations of

the UAS as set forth above meets or exceeds the present level of safety provided under 14 C.F.R. § 61.113(a) & (b).

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

This regulation requires that no person may operate a civil aircraft unless it is in airworthy condition. Should the exemption be granted allowing commercial operation of the KVARA UAS without an airworthiness certificate, no standard will exist for airworthiness of the UAS. Given the size of the aircraft and the requirements that have presumably already been met in the SAC approval process for the UAS (for instance, the KVARA Maintenance & Inspection Manual and Safety Checklist), an equivalent level of safety will be achieved by insuring compliance with the manufactures UAS operations manuals prior to each flight.

14 CFR § 91.119: Minimum Safe Altitudes

Section 91.119 establishes safe altitudes for operation of civil aircraft. Specifically, 91.119(c) limits aircraft flying over areas other than congested areas to 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 set forth herein, the KVARA UAS will not be operated at higher than 400 feet AGL. It will, however, be operated to avoid congested or populated areas. Because aerial survey work must be accomplished at relatively low altitudes and at altitudes less than 500 feet AGL, an exemption from Section 91.119(c) is needed. The equivalent level of safety will be achieved given the size, weight, speed, and material with which the KVARA UAS are built. Compared to aerial survey operations conducted with aircraft or rotorcraft weighing far more than 55 lbs. and carrying flammable fuel, any risk associated with these operations will be far less than those currently allowed with conventional aircraft operating at or below 500 feet AGL. Indeed, the low-altitude operations of the UAS will maintain separation between these small-UAS operations and the operations of conventional aircraft that must comply with Section 91.119.

14 C.F.R. § 91.151(a): Fuel Requirements for Flight in VFR Conditions

This regulation prohibits an individual from beginning "a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed – (1) During the day, to fly after that for at least 30 minutes; or (2) At night, to fly after that for at least 45 minutes." The KVARA UAS batteries provide approximately 50 minutes of powered flight. Without an exemption from § 14 CFR 91.151, the UAS's flights would be limited to approximately 20 minutes in length. Given the limitations on its proposed operations and the location of those proposed operations, a longer time frame for flight in daylight VFR conditions is reasonable. KVARA believes that an exemption from 14 CFR § 91.151(a) is safe and within the scope of a prior exemption. See Exemption 10673 (allowing Lockheed Martin Corporation to operate without compliance with 91.151(a)). Operating the small UAS, without 30 minutes of reserve battery

power does not engender the type of risks that Section 91.151(a) was meant to prevent given the size and speed at which the UAS operates. The fact that it carries no pilot, passenger, or cargo also enhances its safety. Additionally, limiting the KVARA UAS flights to 20 minutes would greatly reduce their utility. In the unlikely event that the UAS should run out of battery power, it would simply land using a gentle downward spiraling pattern. Given its weight and construction material, the risks are less than contemplated by the current regulation. KVARA believes that an equivalent level of safety can be achieved by maintaining 10 minutes of reserve battery power, which, allowing 40 minutes of flight time, would be more than adequate to return the UAS to its planned landing zone from anywhere in its operating area.

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

Section 91.405(a) requires that an aircraft operator or owner "shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter . . . ." Section 91.407 similarly makes reference to requirements in Part 43; Section 91.409(a)(2) requires an annual inspection for the issuance of an airworthiness certificate.

Section 91.417(a) requires the owner or operator to keep records showing certain maintenance work that has been accomplished by certificated mechanics, under Part 43, or licensed pilots and records of approval of the aircraft for return to service. Maintenance of the KVARA UAS will be accomplished by the owner/operator pursuant to the manufacturer manuals. An equivalent level of safety will be achieved because the UAS are all small in size, will carry no external payload, will operate only in restricted predetermined areas and is not a complex mechanical devise. As provided in the KVARA Maintenance Manual and the Safety Checklist, the operator of its UAS will ensure that the UAS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance that is performed. Moreover, the operator is the person most familiar with the aircraft and is best suited to maintain the aircraft in an airworthy condition and to ensure an equivalent level of safety.

(3) Flight Operations Pursuant To The Exemption Sought Would Be Limited To Areas That Are Not In The Proximity Of Airports Or Over Populated Areas.

KVARA will conduct aerial acquisition flight operations over certain prequalified areas that are not near populated areas, airports, helipads, highways or state roads. Specifically, KVARA's proposed area of flight operations also include rural areas that are:

1. Non populated areas as depicted on VFR Sectional Aeronautical Charts;
2. Not within five (5) miles of any airport or helipad;
3. Not within one hundred (100) meters of state roads having more than two lanes;

and

4. Not within fifty (50) meters of state roads having two lanes or less.

In summary, KVARA seeks to operate its UAS only over areas within the States defined above while maintaining safe distances from any populated areas, airports, helipads, or roadways.

Flight Operations of The KVARA UAS are Limited To The Line of Sight of A Certificated Pilot in Command and With A Safety Observer

KVARA will only utilize knowledgeable pilots to act as pilot in command of the UAS. Additionally, all pilots will be assisted by a safety observer. The pilot in command and safety observer must meet the requirements as set forth by the KVARA Standard Operating Procedures.

Flights Will Be Conducted Pursuant To Specific Operating Limitations

In seeking this exemption, KVARA proposes to commercially operate the its UAS without satisfying the restricted category airworthiness certification process specified in 14 C.F.R. § 21.185, or otherwise having a certificate of airworthiness issued by the FAA, as contemplated by 14 C.F.R. Part 21. KVARA proposes to operate of its current and future UAS, for the special purpose of conducting aerial image acquisitions, pursuant to the following specific operating limitations.

Operating Limitations include:

1) Operations authorized by this grant of exemption are limited to the following aircraft described in the operator's manual which are all small aircraft weighing less than 55 pounds: Proposed operations of any other aircraft will require a new petition or a petition to amend this grant.

2) The UA may not be flown at an indicated airspeed exceeding 74.5 knots.

3) As of March 23, 2015, the FAA will automatically grant a "blanket" COA for flights at or below 200 feet to any UAS operator with a Section 333 exemption, provided the aircraft weighs less than 55 pounds, operations are conducted during daytime VFR conditions and within VLOS of the pilots and stay certain distances away from airports or heliports. If KVARA is granted an exemption and needs to fly outside those blanket parameters, KVARA will apply for a separate COA specific to the airspace required for its operation(s). The application will be submitted through the UAS Civil COA Portal. It must be noted that at this time KVARA does not foresee having to perform any of its future operations beyond 400 ft. AGL. If applicable, all altitudes will be reported to ATC in feet AGL.

4) The UA must be operated within 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.

5) All operations must utilize a visual observer (VO). 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. 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 functions prescribed in the operator's manual.

6) Provided the additional requirements identified in these conditions and limitations are added or amended, the operator's manual is considered acceptable to the FAA. The operator's manual and this grant of exemption must be maintained 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 operator's manual, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operator's manual. The operator may update or revise its operator's manual. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator upon request. The operator must also present updated and revised documents if it petitions for an extension or amendment of this 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 amendment to its exemption. The FAA's UAS Integration Office (AFS-80) may be contacted if questions arise regarding updates or revisions to the operator's manual.

7) Prior to each flight the PIC must inspect the UAS to ensure it is in a condition for safe flight. 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. The Ground Control Station must be included in the preflight inspection. All maintenance and alterations must be properly documented in the KVARA aircraft records.

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 in accordance with the operator's manual. The PIC who conducts the functional test flight must make an entry in the UAS aircraft records of the flight. The requirements and procedures for a functional test flight and aircraft record entry must be added to the operator's manual.

9) The preflight inspection section in the operator's manual has been amended to include the following requirement: The preflight inspection must account for all discrepancies, i.e. inoperable components, items, or equipment, not covered in the relevant preflight inspection sections of the operator's manual or manufactures manual(s).

10) The operator must follow the manufacturer's UAS aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements, with particular attention to flight critical components that may not be addressed in the manufacturer's manuals.

11) KVARA must carry out its maintenance, inspections, and record keeping requirements in accordance with the operator's manual. Maintenance, inspection, and alterations must be noted in the aircraft logbook, including total flight hours, description of work accomplished, and the signature of the authorized KVARA technician returning the selected UAS to service.

12) KVARA technicians must receive and document training referenced in the operator's manual.

13) Each UAS operated under this exemption must comply with all manufacturer System and Safety Bulletins.

14) KVARA maintenance personnel must make a record entry in the UAS logbook or equivalent document of the corrective action taken against discrepancies discovered between inspections.

15) All future PIC personnel will seek to obtain a private pilot certificate and a third-class airman medical certificate in addition to any FAA required training program. The PIC will 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.

16) Prior to operating for hire, the PIC must have completed KVARA's three-day Training Intensive as outlined in the Safety Checklist. The Training Manual must also be updated to reflect the specific training program. The Training Manual will specify the minimum flight and skill requirements for the Remote Pilot, Instructor Pilot and Examiner. Those Manuals and records of those requirements must be documented and made available upon request by the Administrator. Any prior documented flight experience that was obtained in compliance with applicable regulations may satisfy this requirement. Training, proficiency, and experience building flights can also be conducted under this grant of exemption to accomplish the required flights and flight time.

17) 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 and land or be recovered in accordance with the operator's manual.

18) The PIC must abort the flight in the event of unpredicted obstacles or emergencies in accordance with the operator's manual.

19) The PIC is prohibited from beginning a UAS flight unless (considering wind and forecast weather conditions) there is enough power to fly to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 10 minutes.

20) The operator is required to request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation.

21) 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.

22) Before conducting operations, the radio frequency spectrum used for certain operations and control of the UA must comply with the Federal Communications Commission (FCC) or other appropriate government oversight agency requirements.

23) The 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 yield the right of way to all other manned operations and activities at all times (including, but not limited to, ultra-light vehicles, parachute activities, parasailing activities, hang gliders, etc.).

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

26) UAS operations may not be conducted during night, as defined in 14 CFR 1.1.

27) All operations shall be conducted in Class G airspace.

28) All operations must be conducted under visual meteorological conditions (VMC). The UA may not be operated when visibility is less than 3 statute miles from the PIC.

29) During operations in Class G airspace, the UA may not operate within 5 nautical miles of the geographic center of an airport as denoted on a current FAA published aeronautical chart unless a letter of agreement with that airport's management is obtained, and the operation is conducted in accordance with a NOTAM. The letter of agreement with the airport management must be made available to the Administrator upon request.

30) The UA may not be operated over congested or densely populated areas. These areas include but are not limited to the yellow areas depicted on World Aeronautical Charts (WAC), Sectional Aeronautical Charts (Sectionals), or Terminal Area Charts (TAC). However, aeronautical charts may not reflect

pertinent local information. Ultimately, it is the PIC's responsibility to maintain the minimum safe altitudes required by § 91.119.

31) Operation of the UA must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures.

32) Operations of the UA may be conducted at distances less than 500 feet from participating persons, vessels, vehicles or structures that perform an essential function in connection with these special purpose operations. Operations closer than 500 feet from the PIC, VO, operator trainees and essential persons, are permitted when operationally necessary; but never so close as to present an undue hazard, per § 91.119(a).

33) Operations of the UA may be conducted at distances less than 500 feet from unoccupied vessels, vehicles or structures owned by the land owner/controller when the land owner/controller grants such permission and the PIC makes a safety assessment of the risk from operations closer to these objects.

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

35) 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.

SUMMARY

SUMMARY OF KVARA SECTION 333 EXEMPTION REQUESTS

KVARA hereby provides pursuant to Part 11 a summary of its exemption application to allow commercial operation of the listed KVARA UAS in precision aerial survey, aerial photography, aerial videography, mapping and inspection work. An exemption is requested from the following regulations:

14 C.F.R. 61.113(a) & (b);
14 C.F.R. 91.7(a);
14 C.F.R. 91.119;
14 C.F.R. 91.151(a);
14 C.F.R. 91.405(a);
14 C.F.R. 91.407(a)(1);
14 C.F.R. 91.409(a)(2);
14 C.F.R. 91.417(a).

CONCLUSION

As set forth above, KVARA, 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 KVARA UAS commercially, without an airworthiness certificate, for the special purpose of conducting aerial acquisitions over certain areas within the States of AK, AZ, CA, CO FL, HI, IL, IN, IA, KS, KY, MI, MN, MO, MT, NE, NV, NM, ND, OH, OK, PA, SD, TX, UT, VA, WA, WV and WI. 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 KVARA, Inc. to safely, efficiently, and economically operate the its UAS commercially within the NAS.

Dated: 18 May 2015

Respectfully submitted,

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