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

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

August 03, 2015

Exemption No. 12279
Regulatory Docket No. FAA–2015–2102

Mr. James P. Gilbert, Jr.
President
JBK Unmanned Systems
8 Sentinel Trail
Palm Coast, FL 32164

Dear Mr. Gilbert:

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 26, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of JBK Unmanned Systems (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography, videography, survey and mapping, inspections, and services for search and rescue/recovery and firefighting operations.

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 and DJI Phantom 3.

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, JBK Unmanned Systems 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, JBK Unmanned Systems 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 Inspire 1 and DJI Phantom 3 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 August 31, 2017, unless sooner superseded or rescinded.

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

Enclosures

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May 26th, 2015

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

Re: Request for Exemption per PL 112-95 §333 from 14 CFR 61.113(a) and (b), 14 CFR 91.103, 14 CFR 91.105, 14 CFR 91.109, 14 CFR 91.119, 14 CFR 91.121, 14 CFR 91.151(a), 14 CFR 91.405(a), 14 CFR 91.407(a)(1), 14 CFR 91.409(a)(2), 14 CFR 91.417(a) and (b)

Dear Sir or Madam:

JBK Unmanned Systems respectfully requests an exemption of the above applicable sections of title 14 CFR for the purpose of conducting commercial operations including, but not limited to, aerial photography, videography, survey and mapping, inspections as well as providing services for search and rescue/recovery and firefighting operations. JBK will use its small Unmanned Aircraft System(sUAS) within controlled access airspace, using licensed airmen, and will employ a comprehensive safety, training, and planning program. The employment of sUAS platforms for these missions should provide the FAA with good cause to find that these operations enhance safety by eliminating the need to use conventional aircraft in the sometimes unique environments where a sUAS would be particularly adept, but a conventional aircraft may pose a hazard to its crew and those on the ground.

JBK Unmanned Systems requests exemption from the following applicable regulations, pursuant to the Administrator's authority to grant exemptions contained in 49 U.S.C. § 106(f), 40113, and 44701:
14 CFR 21 Part H - Airworthiness Certificates,
14 CFR 61.113(a) and (b) – Pilot in Command,
14 CFR 91.103 – Preflight action,
14 CFR 91.105 – Flight crewmembers at stations,
14 CFR 91.109 – Flight instructions,
14 CFR 91.119 - Minimum Safe Altitudes,
14 CFR 91.121 - Altimeter settings,
14 CFR 91.151(a) - Fuel requirements,
14 CFR 91.405(a) - Maintenance required,
14 CFR 91.407(a)(1) - Operations after maintenance,
14 CFR 91.409(a)(2) - Inspections,
14 CFR 91.417(a) and (b) – Maintenance records

OPERATIONS OVERVIEW

Our operations utilize sUAS in a manner that provides services not offered by manned aircraft or enhances the level of safety at which the tasks can be completed in manned aircraft. Examples of the proposed aerial photography operations include real estate, insurance damage assessment and various inspection services. These types of operations restrict the use of the sUAS to a small area typically encompassing a limited number of residential and commercial properties at a time. The areas in which the flight takes place can readily be protected with secured access. The structures on these properties provide sufficient protection from the sUAS and can be completed with much less risk than that of a manned operation at low altitudes.

JBK's survey, mapping and inspection operations will include mapping and inspections of both agriculture and construction sites utilizing a sUAS rotorcraft flying pre-programmed grids that can be interrupted and returned to a safe landing zone. Currently these operations are executed by general aviation aircraft carrying hundreds of pounds of fuel and equipment flying at low altitudes and speeds. Our operation would greatly increase the level of safety, replacing large aircraft with a sUAS under 35 pounds and restricted to speeds no greater than 50 knots. These sites are areas that can readily be secured by JBK personnel and would not provide any additional risk to the general public.

JBK Unmanned Systems will offer services to local public safety agencies where FAA rules and local laws permit. These services could include search and rescue of missing persons, evidence search, structural and wildland firefighting operations and other operations where permitted.

Any operations under this exemption would be conducted in accordance with the strict parameters specified in the confidential Flight Operations Manual and confidential Pilot Operating Handbooks.

The limitations and conditions that JBK Unmanned Systems agrees to be bound to include:

1. The sUAS will weigh less than 35 lbs.
2. Flights will be operated within VLOS of a pilot and/or observer and will be conducted during daylight hours only.
3. Flights will be terminated at 25% battery power reserve.
4. Flights will be operated at an altitude of no more than 400 feet AGL and ground speed will not exceed 50 knots.
5. Preflight inspections of all components of the system and a safety risk assessment will be conducted and a separate log/checklist will be filed for each flight.
6. Minimum crew for each operation will consist of the sUAS Pilot, the Visual Observer and based on results of the safety assessment may include a security coordinator. A sensor operator may also be used when necessary.
7. Observer and pilot will at all times be able to communicate by voice.
8. Pilot and observer will be trained in the operation of the UAS to be used and will receive up-to-date information on the particular UAS to be operated as required in the Flight Operations Manual (FOM will be provided upon request).
9. sUAS pilot will be an FAA licensed airman with at least a sport pilot certificate and drivers license as required in the current FAA policy.
10. The UAS will only operate within a confined “Safety Perimeter” as defined in the FOM.
11. A briefing will be conducted in regard to the planned sUAS operations prior to each day’s activities. It will be mandatory that all personnel who will be performing duties within the boundaries of the safety perimeter be present for this briefing.
12. Written and/or oral permission from the relevant property holders will be obtained.
13. All required permissions and permits will be obtained from territorial, state, county or city jurisdictions, including local law enforcement, fire, or other appropriate governmental agencies.
14. If the sUAS loses communications or loses its GPS signal, the UAS will have the capability to return to a pre-determined location within the Safety Perimeter and land.

## AIRCRAFT TO BE UTILIZED

JBK Unmanned Systems will utilize a DJI Inspire 1 and DJI Phantom 3 for its operations. The sUAS are rotocopter configuration and will weigh no more than 35 pounds. They will operate no faster than 50 knots groundspeed. The aircraft are agile, having the ability to hover, and move about its three axes simultaneously. The aircraft will be operated below 400 feet Above Ground Level (AGL) and continuously within the Pilot in Command's (PIC) line of sight, so as to not create a hazard to users of the national airspace system or public.

The above aircraft are equipped with the following safety features:

1) Both units have a "Return to Home" feature that is automatically activated when controller signal is lost and can be activated manually when problems occur or a preset battery level indicator is activated.
2) Both units have GPS capability that provides stability and allows the PIC more control in various conditions.
3) Both units have programming such as "No Fly Zone" (preprogrammed no fly zones around certain airports) and "Flight Limitations" that provide the ability to manually program height and distance limitations to meet FAA rules.
4) The Inspire 1 has dual controllers so the camera can be controlled by a second operator, thus allowing the PIC complete concentration on flight operations only.
5) The Phantom 3 has a "Waypoint System" allowing preprogrammed flight operations in certain circumstance.

Because of the sUAS' specifications and flight characteristics, it poses no threat to national security.

## FLIGHT CREW

All of JBK Unmanned Systems operations will be performed by FAA licensed pilots with trained Visual Observers and, where necessary, Site Security Coordinators. These operations will be in controlled and secured environments and only after a safety assessment has been completed. Prior to flight, the PIC and Visual Observer (VO) will complete the qualification process as outlined in the company's FOM. The Pilot in Charge will possess, at a minimum, a sport pilot's certificate, meet applicable recent flight experience requirements and hold a state driver's license. The Visual Observer will be trained in accordance with the company's FOM.

## PREFLIGHT ACTION

In accordance with 14 CFR 91.103, the PIC will, at minimum, receive a weather briefing, survey the launch and recovery environments and review takeoff and landing distances and other applicable aircraft performance data, check the aircraft and ground station/transmitter battery levels, and brief the Visual Observer (VO) and any other supporting crew on the mission, safety, and contingencies. All flights will be conducted in Day VMC conditions. Minimum flight crew shall include the PIC, Visual Observer to assist with seeing-and-avoiding other aircraft, a Site Security Coordinator as determined by preflight risk analysis.

## FUEL REQUIREMENTS

All JBK Unmanned Systems PICs will terminate flights when remaining battery power level reaches 25%.

## sUAS MAINTENANCE

JBK Unmanned Systems will conduct all maintenance on the sUAS in accordance with the FOM, POH and Manufacturer user manuals. All maintenance will be conducted by trained JBK Unmanned Systems personnel. Repairs will be conducted by same or authorized manufacturer representative and will require a test flight after completion. Maintenance, repair and software update logs will be strictly maintained and available for inspection by the proper authorities.

## FLIGHT SAFETY AND SECURITY

Because of the relatively small operating perimeter, any mechanical issues that may arise during a flight could be quickly mitigated by terminating the flight. Security of flight operations will follow procedures outlined in earlier sections. FOM and POH include sections on limitations of safe operations as well as emergency and abnormal operating procedures. Requirements for basic training and continuing education have been established.

Several principals of JBK Unmanned are current or former law enforcement and/or fire service personnel, including FEMA and USAR operations. Safety and security of all flights is of the utmost importance to JBK. The safety and security of flight operations personnel and the public will not be adversely affected during these activities.

PUBLIC BENEFIT

Use of sUAS technology to obtain imagery, information and data currently obtained by use of manned flight or manual methods:

1) Reduces statistical risk to human life due to manned aircraft accidents or due to other dangerous activities that can be avoided.
2) Reduces the cost of obtaining such information, which benefits consumers and the economy.
3) Reduces environmental impact by eliminating sources of hydrocarbon emissions from manned aircraft.

CONCLUSION

Satisfaction of the criteria provided in Section 333 of the Reform Act of 2012 (size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight and national security) provide more than adequate justification to grant JBK Unmanned Systems requested exemption, allowing for JBK Unmanned Systems commercial operations for the purpose of photography, videography, inspections and survey pursuant to the company's FOM and POH. Confidential Manuals are available on request.

Sincerely,

James P. Gilbert Jr.
President, JBK Unmanned Systems