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

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

May 29, 2015

Exemption No. 11713
Regulatory Docket No. FAA–2015–0732

Mr. Thomas B. McVey
Counsel for Property Drone Consortium, LLC
Williams Mullen
1666 K Street NW, Suite 1200
Washington, DC 20006

Dear Mr. McVey:

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 March 23, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Property Drone Consortium, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct research and development for the use of UAS technology in the insurance and construction industries.

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 a Microdrone MD4−1000 and Aerialtronics Altura Zenith A TX8.

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, Property Drone Consortium, LLC is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

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[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, Property Drone Consortium, LLC is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the Microdrone MD4−1000 and Aerialtronics Altura Zenith A TX8 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 May 31, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

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March 23, 2015

U.S. Department of Transportation, Docket Operations
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Re: Section 333 Exemption Request

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act"), the Property Drone Consortium, LLC ("Petitioner" or "PDC") hereby applies for an exemption from the Federal Aviation Regulations ("FARs") described in Section VII below and any other exemptions necessary to allow the PDC to operate the small Unmanned Aircraft Systems ("UAS") described in Section IV for research and development ("R&D") purposes, as more fully described in Section IX below.

I. Background on Property Drone Consortium

The PDC represents collaboration among insurance carriers, construction industry leaders and others who wish to promote research and development for the safe use of Unmanned Aircraft System (UAS) technology across the insurance and construction industries. The PDC's purpose is to promote the development of and regulatory approval for the use of various types of UAS in property inspections, facilitate the collection of property condition and damage assessment data through UAS, and engage in all activities and transactions that are necessary in furtherance of said purposes. The goals of the PDC members include (i) development of property-specific drone hardware and software solutions; (ii) education to create industry-leading expertise; (iii) continued development of UAS industry relationships; and (iv) establishing industry standards for UAS-captured property data formats. For more information about the PDC, please visit its website at http://www.propertydrone.org/.

II. Contact Information

The contact information for Petitioner is set forth below:

Property Drone Consortium, LLC
c/o Chris Barrow, CEO
Property Drone Consortium, LLC and EagleView Technology Corporation
3700 Monte Villa Parkway, Suite 200
Bothell, WA 98021
http://www.propertydrone.org/

III. Request for Exemption to Use UAS for Research and Development

The PDC seeks an exemption to permit the operation of the small UAS set forth in Section IV for R&D as follows:

A. Insurance Institute for Business and Home Safety Facility (IBHS) – The IBHS is an applied research facility on a 90-acre parcel of land in Chester County, South Carolina, a sparsely populated area more than five miles from the closest airport. The unique facilities located at IBHS enables researchers to test systems such as UAS on full-scale one- and two-story residential and commercial building in a controlled environment. Testing programs will include highly realistic replications of real-world, potentially disastrous events, such as high winds, wind-driven rain, hail, and wildfires. The large test chamber is an exceptionally large, specially designed wind tunnel, 145 ft. wide by 145 ft. long, with a clear interior height of 60 ft. The test chamber's dimensions, long-span steel structure, and 105 nearly 6-ft. diameter fans at the end of a contraction inlet combine to create proper aerodynamic flows and gust structure that enable researchers to create realistic Category 1, 2 and 3 hurricanes, extra-tropical windstorms, wind-driven rain conditions, and strong thunderstorm frontal winds. The test chamber also contains a custom-built 55-ft. diameter turntable so that complete rotation of structural specimens can be done remotely during testing.

PDC will conduct testing both inside the test chambers and outside on the IBHS grounds. The outside testing will be done under controlled conditions. For example, the airspace will be limited, predetermined, and controlled as to access. The IBHS will not be open to the public and access to testing will be restricted to IBHS employees, representatives from PDC members or consultants engaged in testing or test-related work. Outside testing will occur in Class G airspace at altitudes of 400 feet or less. PDC will have obtained prior written consent from any individual about whom data is collected from a UAV-mounted sensor.

B. Facilities Owned or Leased by PDC and/or Its Members – While the IBHS is suitable for a broad range of R&D, PDC also wishes to be able to conduct R&D at other facilities owned, leased or otherwise controlled by PDC or its members. This will give PDC greater

flexibility to conduct R&D using different sensors and conditions while still providing the safety and security provided by a controlled environment. These facilities will be located more than 5 miles from the closest airport and the airspace will be limited and predetermined. The PDC will create a buffer zone that will be limited to representatives from PDC members or consultants engaged in testing or test-related work. Testing will occur at altitudes of 400 feet or less. PDC will have obtained prior written consent from any individual about whom data is collected from a UAV-mounted sensor.

IV. Unmanned Aircraft Systems

A. Microdrone md4-1000

The md4-1000 is a battery powered quadcopter weighing less than 6 kg, including payload. It has a maximum speed of 26 mph and a maximum flight operating endurance of 88 minutes. Its flight and navigation controller centers on an inertial measurement unit, consisting of an accelerometer and a gyroscope for each axis, supplemented by a 3-axis magnetometer, a barometric altitude sensor and a GNSS receiver. With all these sensor readings put together, the md4-1000 is able to fly self-stabilized with GNSS Position Hold. As soon as there is no input from the operator, the md4-1000 will stay on the spot, waiting for the next command. It is possible to let the md4-1000 hover in the same spot for several minutes.

The aircraft is operated using a remote control ground station and is capable of setting pre-programmed distance and height limits. In the event of a loss link, GPS failure or law battery condition, the aircraft can be programmed to descend and land or return to home.

B. Aerialtronics Altura Zenith ATX8

The Altura Zenith ATX8 is a multi-rotor aircraft built with a monocoque carbon airframe. The Zenith has a 5.6 kg take-off weight and a maximum payload of 2.9 kg. The Zenith carries a 16.600 mAh battery, which facilitates up to 45 minutes of flight-time with total payloads of up to 6.4 lbs. for the ATX8. It can be flown with either a radio or tablet and carries a variety of payloads. The Zenith has a maximum cruise speed of 20 m/s. It features auto-takeoff and landing, auto go home and landing, GPS waypoint navigation, direction lock, and GIS mapping. Specifications include:

- Length x Width: 23.6" x 23.6"
- Height: 13.7" – 21.6" tall
- Weight: 7.7 lbs., without payload (less than 15 lbs. with payload)

In support of this exemption request, PDC is submitting under separate cover, an applicable Operational Document and Training Syllabus for the UAS described above (collectively, the "Operational Documents"). We request that the Operational Documents be

given confidential treatment.[1] Petitioner notes that the FAA has previously granted exemptions for both the md4-1000 and the Altura Zenith ATX8.[2]

V. Statutory Authority for Requested Exemptions

This petition for exemption is submitted in accordance with Section 333 of the Reform Act. Pursuant to Section 333 of the Reform Act, the Federal Aviation Administration (FAA) Administrator (the "Administrator") is to permit operation of an unmanned aircraft system where it does not create a hazard to users of the national airspace system (NAS) or the public or pose a threat to national security. Moreover, the Federal Aviation Act grants the Administrator general authority to grant exemptions from the agency's safety regulations and minimum standards when the Administrator decides such a requested exemption is in the public interest. *See* 49 U.S.C. §§ 106(f), 44701-44716, *et seq*. A party requesting an exemption must explain the reasons why the exemption: (i) would benefit the public as a whole, and (ii) would not adversely affect safety or how it would provide a level of safety at least equal to the existing rules. 14 C.F.R. § 11.81.

VI. Safety Measures and Public Interest Benefits

As described in more detail in Section IX, the PDC will take measures to ensure such operations will not create a hazard to aviation or the public. Flights will be conducted under 400 feet AGL thereby avoiding interference with users of the national airspace system ("NAS"). Flights will be suspended immediately to yield right-of-way to any other aircraft. Geo-fencing will be utilized when available to ensure that a UAS does not fly outside of the intended area. Operations will also not create a hazard to the public as PDC will only operate the UAS over unpopulated areas. The test site will be secured and only authorized personnel will be permitted on the grounds. Given the size and speed of the UAS, the controlled nature of the testing locations and the lack of explosive materials or flammable jet fuels, the operations will not pose a threat to national security.

There are a number of reasons why granting the PDC's request to operate the UAS for R&D purposes is in the public interest. Currently, the PDC members use individuals on the ground and on roofs to conduct physical inspection and evaluation of claims. These measures carry substantial risk, particularly in the aftermath of storms or disasters when structures may be compromised or access blocked. These inspections can also be time consuming and expensive. Allowing the PDC to conduct this R&D is an important step to realize the full potential of UAVs for insurance-related purposes such as to conduct surveys and inspections for damages. The

[1] Petitioner submits the Operational Documents as Confidential documents under 14 C.F.R. § 11.35(b) as they contain proprietary information that Petitioner has not and will not share with others. The 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.

[2] *See, e.g.*, Asymmetric Technologies (Microdrone md4-1000 – Exemption No. 11171) and State Farm Mutual Automobile Insurance Company (Altura Zenith ATX8 – Exemption No. 11175 and Exemption 11188).

R&D will be conducted by industry experts in a controlled and safe environment. The exemption will allow for the testing of various hardware and software components and configurations. It will also facilitate the development of standards for data collection and sharing. As a result, the benefits of this exemption will include enhanced safety for individuals, cost savings and greater efficiency in an industry that is critical to the nation.

VII. Specific Sections from Which Petitioners Seek an Exemption

Based upon the information provided and the exemptions that the FAA has already granted pursuant to Section 333, the PDC requests the following exemptions:

14 C.F.R. § 61.113(a)
14 C.F.R. § 61.113(b)
14 C.F.R. § 91.7(a)
14 C.F.R. § 91.119(c)
14 C.F.R. § 91.121
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)(1)
14 C.F.R. § 91.409(a)(2)
14 C.F.R. § 91.417(a)
14 C.F.R. § 91.417(b)

VIII. Justifications for Each Exemption Request

1. 14 C.F.R. §§ 61.113(a) and (b) - Private pilot privileges and limitations.

Sections 61.113 (a) & (b) restrict private pilots to non-commercial operations. However, the UAS is remotely controlled and does not carry a pilot or passengers. The area of operation is controlled and restricted, and all flights are planned and coordinated in advance as set forth in the applicable Operational Document and as further described herein. As a result, an equivalent level of safety will be met by granting this exemption. Petitioner notes that the Administrator has granted relief from this section in previous exemptions.

2. 14 C.F.R. § 91.7(a) Civil aircraft worthiness.

Section 91.7(a) requires that an operator determine an aircraft is in airworthy condition before a flight. PDC requests relief from this section provided that the operator of the UAS determines prior to each flight that the aircraft is in compliance with the applicable Operational Documents. Such pre-flight inspection will provide the equivalent level of safety as that provided by this section. Petitioner notes that the Administrator has granted relief from this section in previous exemptions.

3. 14 C.F.R. § 91.119(c) Minimum safe altitudes over congested and other areas.

Section 91.119(c) establishes safe altitudes for operation of civil aircraft over areas other than congested areas. The PDC requests relief from this section with respect to those participating persons, vehicles, and structures directly involved with R&D. The UAS will never operate at higher than 400 AGL. It will be operated in a restricted area, where buildings and people will not be exposed to operations without prior consent. Relief from this section is warranted as operations will be conducted with adequate safety provisions as outlined herein and in the applicable Operational Documents. As a result, an equivalent level of safety will be met by granting this exemption. Petitioner notes that the Administrator has granted relief from this section in previous exemptions.

4. 14 C.F.R. § 91.121 Altimeter Settings.

This regulation requires each person operating an aircraft to maintain cruising altitude by reference to an altimeter that is set ". . . to the elevation of the departure airport or an appropriate altimeter setting available before departure." An exemption from this section may be needed if the UAS does not have a barometric altimeter, but instead has a GPS altitude read out. An equivalent level of safety will be achieved by the operator, pursuant to the applicable Operational Documents, confirming the altitude of the launch site shown on the GPS altitude indicator before flight. As a result, an equivalent level of safety will be met by granting this exemption. Petitioner notes that the Administrator has granted relief from this section in previous exemptions.

5. 14 C.F.R. § 91.151(a) Fuel requirements for flight in VFR conditions.

Section 91.151 (a) prohibits an individual from beginning "a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing, and, assuming normal cruising speed – (1) During the day, to fly after that for at least 30 minutes."

Complying with the 30 minute reserve would severely limit the length of the PDC's UAS flights and hamper R&D efforts. Given the location of the IBHS and the limitations on the UAS's proposed flight area a longer time frame for flight in daylight conditions is reasonable. Operating the UAS in a tightly controlled area, where only people or official representatives who have signed waivers will be allowed, does not raise the type of risks that this section was intended to address, particularly given the size and speed of the UAS. PDC believes that an equivalent level of safety can be achieved by limiting flights to 50 minutes or 20% of battery power, whichever happens first.

6. 14 C.F.R. § 91.405(a) Maintenance required; 14 C.F.R. § 91.407(a)(1) Operation after maintenance, preventive maintenance, rebuilding or alteration; 14 C.F.R. §§ 91.409(a)(1) and (2) Inspections; 14 C.F.R. §§ 91.417(a) and (b) Maintenance records.

Maintenance will be accomplished by the operator pursuant to the applicable Operational Documents. An equivalent level of safety will be achieved because the UAS are very limited in size and will carry a small payload and operate only in restricted areas for limited periods of time. If mechanical issues arise, the UAS will be operating from no higher than 400 feet AGL and can immediately land. As provided in the applicable Operational Documents, the operator will ensure that the UAS is in working order prior to initiating flight, perform required maintenance, and keep a log of any maintenance performed. Moreover, the operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety. As a result, an equivalent level of safety will be met by granting this exemption. Petitioner notes that the Administrator has granted relief from this section in previous exemptions.

7. Additional Relief.

In addition to the exemptions listed above, the PDC requests exemption from such other rules and regulations as the FAA deems appropriate to enable the operations described herein. Since previous exemptions granted under Section 333 of the Reform Act have been effective for two years, the PDC also requests that if the FAA issues interim or final rules applicable to the operation of any UAS included herein after the PDC receives a Grant of Exemption that any conditions and limitations required in such Grant that are more burdensome than the new regulation be appropriately modified or removed.

8. Expedited Process.

Given the potential for this exemption to lead to developments that will save lives and property after a storm or disaster, the PDC requests that, if possible, this request for exemption be considered on an expedited basis.

IX. Operating Parameters for UAS Use

PDC proposes that if the requested exemptions are granted, it will operate the UAS under the following conditions:

1. UAS operations R&D will be conducted by a Pilot in Command (PIC). The PIC shall hold, at a minimum, a private pilot certificate and at least a current third-class medical certificate. The UAS will be in visual line of site (VLOS) of the PIC at all times.

2. All UAS operations will utilize a visual observer ("VO"). The VO will not perform any other duties beyond assisting the PIC with seeing and avoiding air traffic and other ground-based obstacles/obstructions.

3. The PIC and VO will be able to communicate verbally at all times.

4. PDC will rely on the UAS vendor(s) to provide a pilot qualification program, including a training program incorporating proper aircraft operations and safety standards. The PIC and the VO will have obtained the necessary qualifications/training. A record of completion of this qualification process will be documented and made available to the Administrator upon request.

5. UAS may not be flown at ground speeds exceeding 22.5 knots (26 mph).

6. Flights will be operated at an altitude of no more than 400 feet above ground level.

7. The operator will obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to each flight.

8. Each UAS operation will be completed within 50 minutes flight time or with 20% battery power remaining, whichever occurs first. At 30% battery the UAS will enter a return and land sequence; at 20% it will land immediately.

9. UAS will not be operated over any person (other than participating personnel) at an altitude that is hazardous to persons or property on the surface in the event of a UAS failure or emergency. UAS will be operated at a distance from participating buildings of at least 10 feet. Operations will be conducted at least 500 feet from non-participating persons or buildings, unless barriers are in place to provide adequate protection.

10. The UAS will abort the flight in the event of unpredicted obstacles or emergencies in accordance with the applicable Operational Document.

11. The UAS will remain clear and yield the right of way to all other manned operations and activities at all times.

12. UAS operations will not be conducted during night.

13. The UAS will not be operated by the PIC from any moving device or vehicle.

14. The UAS will 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.

15. The applicable Operational Documents and all documents required under 14 C.F.R. § 91.9 and 91.203 will be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents will be made available to the Administrator upon request.

16. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA will be reported to the FAA's UAS Integration Office (AFS-80) within 24 hours. Accidents will be reported to the National Transportation Safety Board (NTSB).

17. The operator will follow the procedures as outlined in its applicable Operational Documents.

18. Prior to each flight, pilot will inspect the UAS to ensure it is in condition for safe flight. If the inspection reveals a discrepancy, the aircraft will be prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

19. Operations will not be conducted over congested or densely populated areas.

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

21. Before conducting operations, the radio frequency spectrum used for operation and control of the UAS will comply with Federal Communications Commission (FCC) or other appropriate government oversight agency requirements.

22. All maintenance and alterations will be properly documented in the aircraft records.

23. Any UAS that undergoes maintenance or alterations that affect the UAS operation or flight characteristics will undergo a functional flight test in accordance with the applicable Operational Documents.

24. Petitioner will institute a rigorous maintenance program to ensure airworthiness of the UAS. Operator will follow the manufacturer's UAS aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements.

25. Each UAS will comply with all manufacturer Safety Bulletins.

X. Summary to be Published in Federal Register

Petitioner: Property Drone Consortium, LLC

Sections of 14 C.F.R. Affected: §§ 61.113(a) and (b); § 91.7(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).

Description of Relief Sought: Petitioner seeks relief from the requirements of 14 C.F.R.;§§ 61.113(a) and (b); § 91.7(a);14 C.F.R. § 91.119(c); 14 C.F.R. § 91.121; 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)(1) and (2); 14 C.F.R. §§ 91.417(a) and (b) to conduct small unmanned aircraft systems (UAS) research and development operations subject to operating procedures that meet or exceed those that FAA requires for similar operations.

XI. Conclusion

Satisfaction of the criteria provided in Section 333 of the Reform Act regarding size, weight, speed, operating capabilities, proximity to airports and populated areas, operation within visual line of sight, and national security, provide more than adequate justification for the grant of the requested exemption allowing operation of PDC's UAS for R&D purposes. Please contact PDC's outside counsel, Kevin D. Pomfret at 703-760-5204 or kpomfret@williamsmullen.com with any questions about this filing.

Sincerely,

Thomas B. McVey

TBM/dll

Attachments: Confidential Treatment is requested.

1. Microdrone md4-1000 – Operators Handbook, Training Description, and Flight Operation Checklist;
2. Altura Zenith ATX8 Operations Manual