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

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

September 4, 2015

Exemption No. 12757
Regulatory Docket No. FAA−2015−2591

Mr. Matthew Lee
DBPANO LLC
1985 South Ocean Drive, #15M
Hallandale Beach, FL 33009

Dear Mr. Lee:

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 June 2, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of DBPANO LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography for the real estate industry.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner.

Airworthiness Certification

The UAS proposed by the petitioner is a DJI S1000.

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

[1] Aerial data collection includes any remote sensing and measuring by an instrument(s) aboard the UA. Examples include imagery (photography, video, infrared, etc.), electronic measurement (precision surveying, RF analysis, etc.), chemical measurement (particulate measurement, etc.), or any other gathering of data by instruments aboard the UA.

Conditions and Limitations

In this grant of exemption, DBPANO LLC is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the DJI S1000 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

June 2, 2015

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

Re: Exemption Request under Section 333 of the FAA Modernization and Reform Act and Part 11 of the Federal Aviation Regulations from 14 C.F.R.

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the Reform Act) and 14 C.F.R. Part 11, DBPANO LLC., operator of Small Unmanned Aircraft Systems ("sUASs") equipped to conduct aerial photography for the real estate industry, hereby applies for an exemption from the listed Federal Aviation Regulations ("FARs") to allow commercial operation of its sUASs, so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.

As described more fully below, the requested exemption would permit the operation of small, unmanned and relatively inexpensive sUAS under controlled conditions in airspace that is 1) limited 2) predetermined 3) controlled as to access and 4) would provide safety enhancements to the already safe operations in the aerial photography industry presently using conventional aircraft. Approval of this exemption would thereby enhance safety and fulfill the Secretary of Transportation's (the FAA Administrator's) responsibilities to "…establish requirements for the safe operation of such aircraft systems in the national airspace system." Section 333(c) of the Reform Act.

The name and address of the applicant is:

DBPANO LLC
Attn:
Matthew Lee
1985 South Ocean Drive, #15M
Hallandale Beach, FL 33009
Ph:305-967-5155
Email: dbpanomia@gmail.com

Regulations from which the exemption is requested:

14 C.P.R. Part 21 (airworthiness certification)
14 C.P.R. Part 27 (normal category rotocraft)
14 C.P.R. 61.113 (a) and (b) (pilot certification and qualification)
14 C.P.R. 91.7(a) (airworthiness)
14 C.P.R. 91.119(b) and (c) (minimum safe altitudes)
14 C.P.R. 91.151(a) and (b) (fuel requirements in VPR conditions)
14 C.P.R. 91.405 (a) and (b) (maintenance)
14 C.P.R. 91.407(a)(1) (approval for return to service)
14 C.P.R. 91.409(a) (annual and airworthiness certification inspection)
14 C.P.R. 91.417(a) and (b) (maintenance records)

This exemption application is expressly submitted to fulfill Congress' goal in passing Section 333(a) through (c) of the Reform Act. This law directs the Secretary of Transportation to consider whether certain unmanned aircraft systems may operate safely in the national airspace system (NAS) before completion of the rulemaking required under Section 332 of the Reform Act. In making this determination, the Secretary is required to determine which types of UASs do not create a hazard to users of the NAS or the public or pose a threat to national security in light of the following:

- The UAS's size, weight, speed, and operational capability;
- Operation of the UAS in close proximity to airports and populated areas; and
- Operation of the UAS within visual line of sight of the operator.

The Federal Aviation Act expressly grants the FAA the authority to issue exemptions. This statutory authority by its terms includes exempting civil aircraft, as the term is defined under §40101 of the Act, that includes sUASs, from the requirement that all civil aircraft must have a current airworthiness certificate.

The Administrator may grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any sections 44702-44716 of this title if the Administrator finds the exemption in the public interest.

Contracted by real estate developers, DBPANO flies over privately owned unimproved lots or properties, and never over public property. Using digital photography equipment, DBPANO produces interactive 360-degree photos showing future high rise views at exactly-measured, multiple heights to assist developers with pre-planning needs such as entitlements, investor presentations, pricing studies, and architectural design. In later phases of development, the marketing teams utilize DBPANO's 360-degree digital assets as integral components of their pre-sales presentations.

DBPANO maintains strict safety measures, constant system testing/upgrades, failsafe backups, and an experienced crew of pilot, camera operator and a visual observer. DBPANO deploys a DJI S1000 octo-rotor UAS made of high-strengh, performance engineered plastics, and weighs 8.8 pounds, and a maximum payload of 24 pounds. DBPANO's typical flight is under 400-feet above ground level ("AGL") and under four minutes in duration. DBPANO'S flights are considered straight up/straight down; the vehicle ascends straight up over private property, has the capability of hovering in place, and then descends straight down. While hovering, the camera platform takes still images in one 360-degree revolution. Average speed up and down is 5-10 feet per second; the

UAV moves laterally only if necessary, at no more than 1 to 2 miles per hour. Battery power provides 15 minutes of operation; DBPANO operators will receive an audible reminder at 5 minutes, and DBPANO will land the UAS well before battery power is exhausted. The S1000 includes a DJI A2+ navigation system, which always stays in sync with GPS, which locks in the UAV altitude and position accurately while hovering. If the UAS encounters an unexpected obstacle, the pilot will either divert the flight or maintain the UAS in a safe hover position away from the obstacle. The crew consists of a pilot, camera operator, and a visual observer/safety technician. The pilot and visual observer are in close proximity to each other.

Given the small size of the sUAS involved and the restricted sterile environment within which it will operate, the applicant falls squarely within that zone of safety (an equivalent level of safety) in which Congress envisioned that the FAA must, by exemption, allow commercial operations of UASs to commence immediately. Also due to the size of the UASs and the restricted areas in which the relevant sUASs will operate, approval of the application presents no national security issue. Given the clear direction in Section 333 of the Reform Act, the authority contained in the Federal Aviation Act, as amended; the strong equivalent level of safety surrounding the proposed operations, and the significant public benefit, including enhanced safety, reduction in environmental impacts, including reduced emissions associated with allowing UASs for movie and television operations, the grant of the requested exemptions is in the public interest. Accordingly, the applicant respectfully requests that the FAA grant the requested exemption without delay.

AIRCRAFT AND EQUIVALENT LEVEL OF SAFETY

The applicant proposes that the exemption requested herein apply to civil aircraft that have the characteristics and that operate with the limitations listed herein. These limitations provide for at least an equivalent or even higher level of safety to operations under the current regulatory structure because the proposed operations represent a safety enhancement to the already safe aerial photography operations conducted with conventional aircraft.

These limitations and conditions to which DBPANO agrees to be bound when conducting commercial operations under an FAA issued exemption include:

- The sUAS will weigh less than 55 lbs.
- Flights will be operated within line of sight of a pilot and/or observer.
- Maximum total flight time for each operational flight will be 5 minutes. Flights will be terminated at 25% battery power reserve should that occur prior to the 30 minute limit.
- Flights will be operated at an altitude of no more than 400 feet AGL or, not more than 200 feet above an elevated platform from which filming is planned.
- Minimum crew for each operation will consist of the sUAS Pilot, the Visual Observer, and the Camera Operator.
- The UAS will only operate within a confined Sterile Area.
- A briefing will be conducted in regard to the planned sUAS operations prior to each day's production 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.
- The operator will obtain the consent of all persons involved in the photography

and ensure that only consenting persons will be allowed within 100 feet of the flight operation, and this radius may be reduced to 30 feet based upon an equivalent level of safety determination.

- Pilot and observer will have been trained in operation of UAS generally and received up-to-date information on the particular UAS.
- Observer and pilot will at all times be able to communicate by voice and/or text.
- Written and/or oral permission from the relevant property holders will be obtained.
- 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.
- If the sUAS loses communications or loses its GPS signal, the UAS will have capability to return to a pre-determined location within the Security Perimeter and land.
- The sUAS will have the capability to abort a flight in case of unpredicted obstacles or emergencies.

Safety equivalence or no adverse effect on safety:

Unmanned Aircraft System and Navigation System

The DJI S1000 UAS, with DJI's A2+ navigation system, has a number of technological capabilities to demonstrate its airworthiness. In the event of a loss of GPS signal, the UAS will not lock in its position and automatically go to ATTI mode and remain stable. Should there be a loss of power, the pilot has control of the UAS to perform auto rotation capability and land the aircraft. If the UAS encounters an unexpected obstacle, the pilot will either divert the flight or maintain the UAS in a safe hover position away from the obstacle.

Given its small size, operational capabilities, and restricted area in which the UAS will operate, an exemption from Part 21, Subpart H, Airworthiness Certificates, and 14 C.P.R. 91.7(a), is warranted, as DBPANO's UAS satisfies the equivalent level of safety as compared with manned caircraft and meets the criteria in section 333. Operating the UAS without an airworthiness certificate in the restricted environment over vacant private property under the conditions proposed will be safer than operating a manned helicopter operating with an airworthiness certificate and not subject to such conditions. The UAV with payload is less than 15 pounds; it carries no explosive materials or flammable liquid fuels, and operate exclusively over private property, with no passengers or crew on board. As the FAA has found in granting an exemption to Clayco, Exemption No. 11109, at page 10:

"The limited weight significantly reduces the potential for harm to participating and nonparticipating individuals or property in the event of an incident or accident. The risk to an onboard pilot and crew during an incident or accident is eliminated with the use of a
VA for the aerial filming operations."

For the reasons outlined above, DBPANO also seeks an exemption from the certification requirements for normal category rotorcraft in Part 27.

In support of DBPANO'S request for an exemption from 14 C.F.R. 91.405(a), 91.407(a)(1),
91.409(a)(1) and (2), and 91.417(a) and (b), DBPANO will adhere to the following inspection and maintenance program: DBPANO will inspect the UAS before and after each operation, as well as perform daily, weekly, monthly, and annual inspections, as set forth in its operations manual. Before each flight, the pilot in command will inspect the UAS to ensure it is in a safe condition for flight. The preflight inspection will account for any discrepancy, such as an inoperable component, item, or equipment. DBPANO will not initiate a flight if the inspection reveals a condition that adversely affects the safety of operations, and will not operate that UAS until it is found to be in a safe condition. Any UAS that has undergone maintenance or an alteration that affects the UAS's operation or flight characteristics will undergo a functional flight test before return to service. DBPANO will follow the manufacturer's UAS requirements relating to components, maintenance, overhaul, replacement, inspection and life limits. DBPANO will record all maintenance, alterations, and the functional flight test in the UAS logbook, including total flight hours, description of work accomplished, and the signature of the UAS technician who returned the UAS to service.

DBPANO's UAS is equipped with an altimeter that provides the pilot with a constant digital display of altitude. Furthermore, the UAS will be operated within the visual line of sight of the pilot in command and observer and below 400 feet, above vacant property. Accordingly, DBPANO does not believe an exemption from 14 C.F.R. 91.121 is required. In support of DBPANO'S request for an exemption from fuel requirements in 14 C.F.R. 91.151(a) and (b), DBPANO notes that its UAS is battery-powered and is operated for brief periods of time, well within the battery capacity of the UAS, and only vertically up and down over private property.

UAS Operator Qualifications and Training

In support of DBPANO's request for an exemption from the pilot certification and qualifications requirements in 14 C.F.R. 61.113(a) and (a), DBPANO asserts that an equivalent level of safety is achieved by the UAS-specific experience of its UAS pilot. Mr. Ernesto de la Barrera has thousands of hours operating the DJI S1000+, with thousands of take-offs and landings. He has been operating a variety of DJI rotorcraft since 2007. In the course of his aviation career, he has gained extensive knowledge of the airspace and varities of UAS, including the DJI S1000 that makes his knowledge and experience more pertinent and relevant to DBPANO'S operations that completing a ground school instruction course and passing the FAA private pilot exam. DBPANO recognizes the FAA's position that section 333 does not allow the FAA to waive the requirement of a UAS operator to hold an airman certificate, relying on section 44711. Assuming for the moment that section 44711 requires a UAS operator to hold a private pilot certificate, section 333 is a more recent enactment and provides explicit authority to the FAA to exempt a UAS operator from any certification requirement. Section 333 instructs the FAA to consider whether to require airworthiness certificates, certificates of waiver, and certificates of authorization, "at a minimum." Thus, Congress vested FAA with discretion to waive other certificates, including an airman certificate. Even if section 333 were read not to convey that discretion, section 44711 applies only to operations in air commerce. DBPANO submits that its UAS will be operated below 400 feet AGL above vacant property in metropolitan areas where manned aircraft are not permitted to operate. Thus,

its operations will not be conducted in "air commerce."

Even if FAA construes its subsection 44701(f) exemption authority to be limited to its regulations, the FAA certainly has discretion to exempt UAS operators from the requirements of Parts 61 and 67 (as opposed to the certification requirement itself) and develop an airman certificate specifically designed for small UAS operations. Applying manned aircraft pilot certification requirements to small UASs is not necessary as a matter of safety, and does not make sense as a matter of public policy. DBPANO believes that FAA's determination in the Astraeus Aerial and other exemptions that a commercial pilot certificate is not required for the operators of UASs for closed set filming applies equally to the nature of its UAV operations:

“[T]he experience obtained beyond a private pilot certificate in pursuit of a commercial pilot certificate in manned flight does not necessarily aid a pilot in the operational environment proposed by the petitioner; *the FAA considers the overriding safety factor for the limited operations proposed by the petitioner to be the airmanship skills acquired through VAS-specific flight cycles, flight time, and specific make and model experience,* culminating in verification through testing.”

(Emphasis added.) DBPANO believes this reasoning supports a UAV/UAS-focused training and experience regimen that should obviate not only a commercial pilot certificate but also a private pilot certificate because any training will be focused on the particular skills of operating the particular small UAS and the particular nature of UAS operations. Should DBPANO elect to use a different type or model of UAS, its pilot would receive 50 hours of training, including 200 takeoffs and landings, before operating that make and model of UAS for commercial purposes.

UAS Operating Parameters

DBPANO will operate its UAS in full compliance with any local permit or safety ordinance, in accordance with its manual. All flights will be conducted within the visual line of sight of the pilot in command, in a tightly circumscribed area of a single parcel of property, with the consent of the property owner and/or developer. Although the UAS may be operated in a metropolitan area, it will remain within the vertical planes of the vacant property, and be flown below 400 feet AGL, except in rare occasions where the proposed construction on the vacant parcel will exceed 400 feet AGL, in which case the UAS will operate at a higher altitude. However, in such rare cases, DBPANO will not operate its UAS above any existing building or structure within a two-block radius, thereby posing no risk to manned aircraft. DBPANO will notify the appropriate Flight Standards District Office "("FSDO") and Air Traffic Control for any operation within five miles of an airport. DBPANO’s typical flight will be operated under 400 feet AGL and last no longer than five minutes. DBPANO's flights are considered straight up/straight down; the vehicle ascends straight up over private property, has the capability of hovering in place, and then descends straight down. Average speed up and down is 5-10 feet per second; the UAV moves laterally only if necessary, at no more than 1 to 2 miles per hour. Battery power provides 15 minutes of operation; DBPANO operators will receive an audible reminder at 5 minutes, and DBPANO will land the UAS well before battery power is exhausted.

DBPANO conducts a briefing before each day's operations, which all personnel participating in the operations must attend. DBPANO will obtain written consent of any

person who will be participating in the operations or otherwise be on the property being filmed. DBPANO will provide notice to any adjacent buildings or structures.

DBPANO will limit its operations to daytime Visual Flight Rules ("VFR") plus 30 minutes before sunrise and 30 minutes after sunset (dusk), with each operation ending no later than 30 minutes after sunset. The UAS is equipped with LED lighting visible for 3 miles. Accordingly, we do not believe an exemption from 14 C.F.R. 91.209 is necessary. DBPANO seeks an exemption from the requirement in 14 C.F.R. 91.119, subsection (b), that an aircraft must remain at least 1,000 feet above any congested area or open air assembly of persons, and subsection (c), that an aircraft must remain at least 500 feet above any person or structure in an area other than populated or congested, and not closer than 500 feet to any person, vehicle, or structure. These requirements were adopted with fixed-wing, manned aircraft operations in mind. While DBPANO may operate its UAS in a metropolitan area, the operations will be strictly confined to private property that is unimproved or vacant, and thus its UAS will not be operated over a congested area or open air assembly of persons. DBPANO will ensure that no unauthorized person will be on the parcel of land over which the UAS will be operated, and will provide notice to adjacent buildings and furnish proctors to ensure that unauthorized persons do not come within the narrow parameters in which the UAS will be operated. Combined with the technological capabilities of the UAS and that the UAS will be operated within the visual line of sight of the pilot and an observer, DBPANO submits that its operational limitations provides an equivalent level of safety to that provided in section 91.119.

Public Interest

DBPANO'S UAS operations will substantially benefit the local and regional economy. DBPANO'S panoramic aerial technology has assisted real estate developers accelerate their business, saving time and money, greenlighting construction and job creation, increasing return-on-investment, and improving economies. DBPANO'S deliverable product to real estate owners and developers relies on a coterie of specialists including architects, 3D animation studios, rendering companies, video production houses, web designers, interior architect designers, graphic designers, air rights and investment analysts, city planners, ad agencies, and sales and marketing consultants. DBPANO'S aerial photography gives the general public a much-enhanced preview of real estate developments prior to their construction, which improves prelease and pre-sales decision making. Operating UASs under the limitations proposed by DBPANO will avoid any risk of harm to pilots as well as persons and people on the ground that would be present during the operation of manned helicopters. UAS operations will also require a much smaller energy footprint than with manned helicopters.

Summary for Federal Register

DBPANO submits the following summary to be included in the Federal Register, should the FAA determine that publication of a summary is required:

DBPANO seeks an exemption to operate the DJI S1000 UAS rotorcraft to perform inspections of unimproved or vacant properties for the construction industry, developers, and property owners.

Sincerely,

Matthew O. Lee
Partner
DBPANO, LLC