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

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

May 11, 2015

Exemption No. 11544
Regulatory Docket No. FAA–2015–0402

Mr. James Bianchin
President
Vertical Sciences, Inc.
2308 Lake Redding Drive
Redding, CA 96003

Dear Mr. Bianchin:

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.

The Basis for Our Decision

By letter dated February 12, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Vertical Sciences, Inc. (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct data acquisition for land surveying, civil engineering design, and geological safety analysis.

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 SenseFly eBee.

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

Conditions and Limitations

In this grant of exemption, Vertical Sciences, Inc. is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the SenseFly eBee 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.

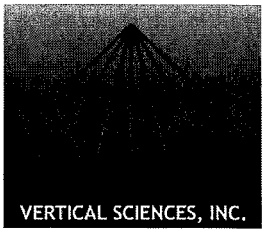
Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on May 31, 2017, unless sooner superseded or rescinded.

Sincerely,

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

February 12, 2015



U.S. Department of Transportation
Docket Operations M-30
West Building Ground Floor, Room w12-140
1200 New Jersey Ave., SE
Washington, DC 20590

Re: Exemption Request Under Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations

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, **Vertical Sciences Inc. (VSI)**, an operator of the SenseFly eBee Unmanned Aircraft Systems (eBee), seeks an exemption from the Federal Aviation Regulations (FARs) listed below:

- 14 C.F.R. 21
- 14 C.F.R. 45.23
- 14 C.F.R 45.29
- 14 C.F.R. 61.3
- 14 C.F.R. 61.113(a)&(b)
- 14 C.F.R. 61.133(a)
- 14 C.F.R. 91.7(b)
- 14 C.F.R. 91.9(b)(2)
- 14 C.F.R. 91.109(a)
- 14 C.F.R. 91.119
- 14 C.F.R. 91.121
- 14 C.F.R. 91.151(a)
- 14 C.F.R. 91.203(a) & (b)
- 14 CFR Subpart E (91.401 - 91.417)

The requested exemption would authorize commercial operations using the eBee for photography, mapping, and survey applications. These operations will be subject to strict operating requirements defined in the eBee Extended User Manual (see Appendix G) (**VSI** requests the FAA treat the eBee Handbook as proprietary under 14 C.F.R. 11.35(b) and does not include this document in the public docket) and conditions defined by the Safety Code of the Academy of Model Aeronautics (see Appendix B), in order to ensure at least an equivalent level of safety to currently authorized operations using manned aircrafts.

The eBee will be operated by an individual who fulfills the following requirements:

- Has successfully passed a manufacturer's training program for the eBee; **VSI** requests the FAA treat the eBee training program as proprietary under 14 C.F.R. 11.35(b) and does not include this document in the public docket.

- Has a Private Pilot license;

1. BACKGROUND OF THE APPLICANT

Vertical Sciences Inc. (**VSI**) is a California corporation formed to provide data acquisition services to the civil engineering, geotechnical engineering, geological, environmental, cultural, and construction fields. **VSI** will specialize in providing extremely high quality data for difficult and inaccessible sites using small Unmanned Aircraft Systems (UAS or drone, 55lbs or less).

VSI's management has the combined experience of 90 years of professional services practiced within those markets. This experience creates an understanding of the economic and safety challenges experienced in these markets, as well as the concerns and conditions brought forth by the Federal Aviation Administration who regulates the National Airspace in which we propose to utilize UAS to gather data with significant cost savings, and more importantly, vastly increased safety for our employees, as well as our clients' employees.

The basis of any design and/or analysis within our fields of service begins, and ultimately depends upon timely, current, and accurate baseline data. The collection of those data often includes remote and inaccessible sites, resulting in significant safety concerns for both the employees collecting the field data, and any persons implementing the resultant design and/or improvements. On projects of rapidly changing conditions, typically characterized by surface mining operations, safety concerns fluctuate from moment to moment, and can only be realistically evaluated based upon regularly updated data. The use of UAS provides a quick, efficient, and cost effective way to quickly update critical data.

The requested exemption would authorize **VSI** to perform commercial operations with UAS in typical approved permitted areas, to gather data for land surveying, civil engineering design, and geological safety analysis. These operations will be subject to strict operating and safety conditions defined by the UAS manufacturer's standards and procedures, **VSI**'s safety policies and guidelines, and in accordance with the respective manufacturer's user manuals (see Appendix G).

Upon receipt of the exemption contemplated herein, **VSI** shall, if required, obtain a Certificate of Waiver or Authorization (COA) from the FAA prior to conducting operations in the National Air Space.

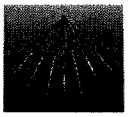
2. CHARACTERISTICS OF THE AIRCRAFT

The eBee is a small (38 inch wingspan) and ultra-light (maximum take-off weight of 1.7 pounds) platform made of flexible foam that performs pre-programmed precision aerial mapping missions relying upon the on-board GPS and the related flight management software (eMotion) that allows the operator to plan safely and efficiently a mission in 3D, and then monitor it in real-time. The eBee's embedded camera, protected by a foam envelope, takes a collection of high-definition still images that are later used to generate maps and contour lines of the surveyed area.

The four main characteristics of the eBee are:

a. Very light weight

The eBee is light enough that the operator can launch it by hand and let it land on almost any surface without requiring a parachute or landing net (belly land). Its low impact energy (38 Joules in case of a controlled emergency landing) also significantly reduces the risk of hazardous situations. Finally, the wings of the eBee are detachable and made of flexible foam with no sharp



or hard edges and almost no internal strengthening structure.

b. Electric-powered

The eBee is electric powered, and therefore inherently low-risk for fire hazards. A brushless engine technology makes it silent and reliable. The propeller is attached with a rubber band to the body of the plane so that it can easily flex away in case of contact with any object.

c. Semi-automatic flight

The artificial intelligence incorporated within the eBee autopilot system continuously analyzes data from the Inertial Measurement Unit and from the onboard GPS to continuously update and confirm all aspects of the flight, under the direct supervision of the Pilot in Command (PIC).

d. Option for Manual control

Additionally, the eBee provides an override capability that allows the PIC to take manual actions during the flight (Go to Home, Go Land, Hold and Resume the mission) and also suspend automated operations and take manual control of the aircraft should it become necessary to respond to emergent circumstances, utilizing the remote controller provided with the system.

3. APPLICATIONS

The aircraft will be utilized for gathering geologic, geotechnical, environmental, and survey data for mining, public works, and construction-related studies and projects. Those data will be used for creating highly accurate maps and geo-rectified orthophotographs. In addition, the aircraft will allow gathering of geologic and geotechnical data in areas where previously, a geologist, engineer, or others would be required to repel down slope or be situated at the base of rock and unstable slopes, thus reducing the danger to and increasing the safety for those professionals.

There are many operational benefits related to the use of this solution:

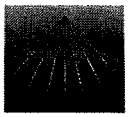
a. The UAS brings safety to daily survey operations: there is no need for the humans to access dangerous working areas anymore (mining pits, spoil piles, or rough uneven areas). The missions can be programmed and reproduced reliably as often as needed for regularly updated maps.

b. The UAS are a cost-effective solution. It is cheaper to operate a UAS rather than an aircraft or other ground systems for the same results.

c. The use of UAS significantly reduces the environmental impact of the data acquisition utilizing any other current technology.

d. Users can save time and work more efficiently by using UAS. A mission does not need a long preparation time or long deployment constraints, or long waiting time for perfect weather conditions unlike, for example, the use of satellites and aerial photography. Initial results are accessible directly on-site, which is impossible with images provided by satellites or manned aircrafts.

e. Lastly, but most importantly, is the safety factor of allowing a visual view of the work site while keeping the employee a safe distance away. The ability of UAS to remotely gather data in a safe manner cannot be completed as safely or timely with any other current technology. Additionally, the use of the eBee will negate the need for conventional manned helicopters to



perform work where repelling and access is not possible, thus, reducing risk to pilot and passenger of the helicopter, and personnel on the ground. The use of UAV will also reduce the need for conventional aircraft in gathering photogrammetric data, thus improving public safety.

Further, the use of the UAS will be performed under the supervision of a Licensed Professional Civil Engineer, authorized to perform land surveying, and a Certified Engineering Geologist, whom, by virtue of their experience and professional licensing, technical knowledge of GPS, plane geometry, trigonometry and spherical geometry; geologic and geotechnical properties, analysis, and evaluation; and along with a full understanding, appreciation, and respect of the rights of all owners of property both above and below its limits, make **VSI** a particularly well suited entity for the safe and efficient commercial use of UAS. In addition, certain aspects of the contemplated services using UAS are regulated by State Law and Regulation promulgating the licensing of land surveyors and geologists as outlined in the California Board for Professional Engineers, Land Surveyors, and Geologists' administrative code.

By this petition, **VSI** seeks an exemption that will authorize it to use the eBee for safety purposes provided its operators comply with any terms and conditions of the FAA's anticipated grant of exemption, including the procedures and requirements set forth in the respective manufacturer's user manuals (see Appendix G).

Under the requested exemption, **VSI**, as operator of the eBee, will ensure that the aircraft will be operated under the direct supervision of a Professional Engineering or Geologist, and by a licensed pilot and flight instructor, who has completed the UAS manufacturer's training program for operation of the UAS.

4. APPLICABLE LEGAL STANDARDS UNDER SECTION 333

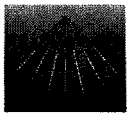
a. Airworthiness assessment of the eBee

The airworthiness of the eBee has already been demonstrated for different projects in the United States, involving state/federal agencies or universities (among others the New Mexico State University: https://newscenter.nmsu.edu/Articles/view/10208/nmsu-uas-flight-test-center-conducts-ebee-airworthiness-assessment, and the USACE New Orleans, who coordinated with the Department of Army and the FAA to obtain all authorizations required in order to operate the eBee UAS).

Moreover, SenseFly obtained flight approvals for the eBee (delivered by national civil aviation authorities) in many countries, among others:

- Switzerland (flight approval for VLOS operations)
- Canada (flight approval for VLOS operations)
- Australia (flight approval for VLOS operations)
- France (flight approval for Extended-VLOS operations)
- Germany (flight approval for VLOS operations)
- United Kingdom (flight approval for VLOS operations)
- Norway (flight approval for VLOS operations)
- Sweden (flight approval for VLOS operations)
- Denmark (flight approval for VLOS operations)

VSI believes that SenseFly has shown compliance with the requirements of Order 8130.34C, Airworthiness Certification of Unmanned Aircraft Systems and Optionally Piloted Aircraft, in its



pending SAC application for the eBee. The criteria set forth in the Order specify the substantive showings of the device's safety and fitness for operation to ensure that the FAA has sufficient basis to evaluate the aircraft's safety. **VSI** submits that completion of the SAC process for the eBee provides assurance of the public safety for the aircraft type.

b. Operating requirements

Grant of the exemption to **VSI** for the eBee will be subject to the following operating conditions, based on the operating conditions set forth by the Academy of Model Aeronautics (see Appendix B). The main restrictions are summarized below:

- Operations to be conducted over private, controlled-access, or public property where approved;
- Permission from the land owner/authority required before commencing any flight;
- Operations over congested areas shall be avoided;
- Operations must not interfere with manned aircraft operations, must yield the right of way to manned aircraft, and operators must See & Avoid other aircraft and obstacles at all times. Use of an ADS-B receiver by the VO will assist in monitoring the presence of other proximal aircraft;
- Operations limited to Visual Flight Rules Meteorological Conditions (VMC) and daylight hours;
- Aircraft operations must remain within Visual Line of Sight (VLOS) and will be visually monitored at all times;
- VLOS guaranteed with a GPS geo-fence around operator of 0.5 miles;
- Flight ceiling pre-programed at 400 feet;
- All operations conducted within 5 miles from an airport shall only be initiated after verbal
    - coordination with the airport authority, or air traffic control when a control tower is present at the airport;
- All operations shall comply with required permissions and permits established by territorial, state, county or city jurisdictions; including local law enforcement, fire, or other appropriate governmental agencies; and
- The eBee operations will be compliant with existing safety procedures inherent to the activities of the related company.

c. Operator Requirements

The eBee operator will have a Private Pilot license and will successfully have passed a manufacturer's training program for the eBee.

5. CONCLUSION

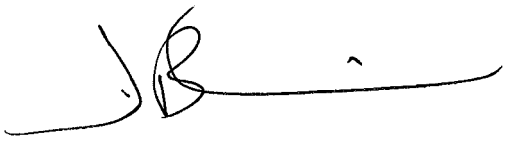
VSI submits that given the combination of the aircraft's light weight, historically demonstrated flight performance, fully qualified flight crew and strict operation under the guidelines established in 8900.227, the FAA can have confidence that the operation will have an equivalent or greater level of safety of manned aircraft performing the same mission.

By approving these exemptions, the FAA will create benefits to the public interest through improved safe working conditions for employees within our fields of service, reduced cost and increased accuracy of design data acquisition, and reduced environmental impacts of acquiring the necessary data.

The name and contact information of the applicant are:

Vertical Sciences, Inc.
Attn: James Bianchin
2308 Lake Redding Drive
Redding, CA 96003
Phone: 530-949-6241
Email: jim.bianchin@gmail.com

Respectfully Submitted,
VERTICAL SCIENCES, INC.



James A. Bianchin, PG, CEG
President

Appendices:

A. Exemption Request and Equivalent Level of Safety Showings Under Applicable Rules Subject to Exemption
B. Academy of Model Aeronautics Safety Requirements
C. Privacy Issues
D. Safety Case
E. eBee Brochure
F. Maintenance Procedures
G. Extended User Manual
H. Training Documentation
I. Aviation Experience
J. Justification of Airworthiness and Safety Assessment