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

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

September 23, 2015

Exemption No. 12957
Regulatory Docket No. FAA-2015-2635

Mr. Neil B. Sulish
2006 Long Beach Boulevard
Surf City, NJ 08008

Dear Mr. Sulish:

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

By letter dated May 30, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. You requested to operate an unmanned aircraft system (UAS) to conduct evaluations of infrastructure operations.

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

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

Airworthiness Certification

The UAS proposed by the petitioner is a DJI Phantom 3 Professional.

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, Mr. Neil B. Sulish 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, Mr. Neil B. Sulish is hereafter referred to as the operator.

[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.

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 Phantom 3 Professional 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 5 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 enclosed 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

May 30, 2015

Mr. Bill Crozier
Acting Manager, Flight Standards Service
Unmanned Aircraft Systems Integration Services
Room 4102
Federal Aviation Administration
470 L'Enfant Plaza SW
Washington, DC 20024

RE: Request for exemption from multiple regulatory provisions to allow the use of small unmanned aerial systems on land controlled by clients of mine to assist in the safe evaluation of infrastructure and operations for my future clients

Dear Mr. Crozier,

I Neil B Sulish respectfully request an exemption from several provisions of Title 14 of the Code of Federal Regulations (C.F.R.) to permit the use of small unmanned aerial systems (sUAS) to assist in the evaluation of infrastructure of operations for my clients. Also in filming various functions for my future clients in the field of Real Estate, outdoor weddings, and outdoor water-sports i.e.. surfing. Accordingly, the grant of an exemption is consistent with Congress' intent, reflected in Section 333 of the FAA Modernization and Reform Act of 2012 (Modernization Act),[1] that safe systems be permitted in the national airspace prior to the issuance of final regulations governing general use of these systems.[2] A summary of this request suitable for Publication in the Federal Register is provided as Appendix A.

Appendix B provides the manufacturers information regarding the design, aircraft performance, and fail-safe features. I have provided the information related to operating limitations, normal and emergency procedures, and maintenance and inspection procedures. As I add aircraft designs, I will update this appendix appropriately. Also, provides the manual for flights covered under this Exemption Request.

[1] P.L. 112-95, stat 11, February 14. 2012

[2] Section 333(b) (2) specifically contemplates that the FAA may issue a certificate of waiver upon finding that a type of UAS, as a result of size, weight, speed, operational capacity, proximity t o airports and populated areas, and operations within visual line of sight do not create a hazard to users of the NAS or the public or pose a threat to national security.

Background Information

I plan on working in the Real Estate Industry, outdoor weddings, and outdoor sporting activities over water i.e. surfing.

I have been contacted by many future clients looking for me to operate sUAS for their business needs.

Infrastructure Safety Inspection Operations:

Roof inspection

Construction Companies' Projects

Agriculture (farm crop inspection

Solar panel inspection

As a part of this I am requesting FAA Exemption for sUAS operations for safety, inspection and video capture usage.

Regulatory Basis for Exemption Request

In addition to the waiver authority provided in Section 333 of the Modernization Act, the FAA may grant an emption under 49 U.S.C. §44701(f) if it has determined that such an exemption is in the public interest. The FAA has imposed a separate requirements it procedural regulations, providing that the petitioner shall explain why granting the exemption would not adversely affect safety or how the exemption would provide at least an equivalent level of safety as compliance with the underlying regulation.

Granting an Exemption will not Adversely Affect Safety

I do note that there is no applicable standard for an equivalency determination. Some have argued that the appropriate standard is that for model aircraft, noting that their operations, if conducted for recreational purposes, would fall completely within the allowable operations for model aircraft. I believe it is difficult to argue that there is sufficient correlation between model operations controlled by the Academy of Model Aeronautics and the ones contemplated by myself. At the same time , it is clear that equivalency cannot be established for traditional, manned civil aircraft because the design and use profiles between traditional aircraft and sUAS are

contemplated operations would not adversely affect safety, which is all that §11.81(e) requires.

Granting an exemption will not adversely affect safety. I contemplate conducting sUAS operations over client owned or controlled land, solely during daylight hours, at altitudes well below that which would pose a risk presented by standard infrastructure operations, my clients already have taken steps to secure property against unauthorized public access. For example, substantial stretches of pipeline, utilities, railroad tracks, solar farms, and other sites, are usually fenced, elevated, or otherwise secured to prevent access. Other long stretches of interest are, as noted above could be in wilderness areas. Most of my anticipated work will be on privately owned real estate developments, outdoor venues, private large farms and over bodies of water. The nature of operations that I anticipate requires that the sUAS be flown at relatively low speeds. I expect that in most instances, the sUAS will be flown less than 75 feet from the highest structure along the path of the sUAS. Accordingly, the risk of interference with another aircraft is minimal. I plan to conduct sUAS operations at least 3 miles from a any public airports (including heliports).

Approval of exemption allowing commercial operation of sUAS in the infrastructure aerial inspection industry, outdoor sporting events, construction projects, and outdoor wedding venues will enhance safety by reducing risk. Conventional operations, using jet or piston power aircraft, operate a extremely low altitudes just feet from the subject being inspected or filmed and in extreme proximity to people and structures: and present the risks associated with vehicles that weigh in the neighborhood of 4,000 lbs., carrying large amounts of jet A or other fuel (140 gallons for jet helicopters). such aircraft must fly to and from the job site. In contrast, a sUAS weighing fewer than 55 lbs. and powered by batteries eliminates virtually all of that risk given the reduced mass and lack of combustable fuel carried on board. The uSAS is carried to the site. the sUAS will carry no passengers or crew and, therefore, till not expose them to the risk associated with manned flights.

The operation of small UASs, weighing less than 55 lbs., conducted in the strict conditions outlined above, will provide an equivalent level of safety supporting the grant of the exemptions requested herein, including 333 Aircraft Exemption Status exempting the applicant from conventional aircraft requirements and allowing commercial operations. These lightweight aircraft operate at slow speeds, close to the ground,and in a controlled environment and, as a result, are far safer than

conventional operations conducted with turbine helicopters operating in close proximity to the ground and people.

The safety of this on the ground is protected by the fact that no one will be allowed into the area without permission of the landowner. Security will be established for the flight area as part of the pre-flight control. Each individual within the secure area will be briefed prior to flight and will consent to being in the area.

I initially intend to use myself as the dedicated pilot for all sUAS operations. All operations will be within the visual line-of-sight (i.e. no more than approximately 0.5 miles from the manipulator of the controls (myself), or pilot in command (PIC myself). As PIC I will conduct at least three take-offs and landings with the sUAS on which I was trained every 90 days as a minimum. As PIC I will establish my qualifications thru a combination of aeronautical knowledge, UAS airmanship skill, and verification through established protocol before any operations commence. Depending on the type of operation, additional ground-based visual observers may be employed as well. These observers will be within constant visual line of sight and in constant contact with the PIC. The visual observers will assist the PIC in avoiding objects near the sUAS.

There are no standards for either Private or Commercial sUAS pilot certificates. The safe operation and control of the UAS as described in this application dow not depend on the type of FAA license held by the PIC. Given the restricted and controlled airspace within which operations will take place, the key factors needed by the PIC are knowledge of the airspace within which the operation will take place and how that airspace fits into the National Airspace System (NAS). That knowledge can be and is gained primarily through ground school and not though flight training in fixed wing aircraft, has the skill or ability to safely operate a small unmanned aerial vehicle, operating at 400 AGL or lower, within a strictly controlled pre-approved airspace. Besides knowledge of airspace regulations, dexterity in the control and operation of the sUAS acquired from actual operation of the aircraft is the most important factor in establishing an equivalent level of safety.

If the PIC has acquired the necessary knowledge of airspace requirements, the relevant issues are (1) where the aircraft will be flown, (2) the size of the aircraft relative to what is being used today to accomplish the same mission, and (3) what precautions will be taken to ensure the safety of those in the area of operation. I propose that the aircraft be operated within a secure environment; and that no one

be allowed to enter the secure environment unless the are part of the operation of the sUAS, and have consented to the risk associated with being in the operating area. Should there be a mishap, the sUAS being flown pose significantly less of a threat than the helicopters and fixed wing aircraft now being employed because they are a fraction of the size, carry no flammable fuel, do not carry crew or passengers, and pose an infinitesimal risk to others. This is in stark contrast to conventional aircraft that are flown to the site , carry explosive fuel, carry passengers and crew, and operate in a much larger area.

From a practical standpoint, there are relatively few licensed full-scale aircraft pilots who are also qualified to fly the type of sUAS that are utilized for infrastructure and other image capture operations. There are even fewer commercial pilots that can fly these sUAS- to the point that to do both is considered rare. Assuming that it is unlikely for a company to find a pilot that has both qualifications, that company would either have to source a qualified sUAS pilot to train and obtain a commercial certificate, or find a commercial certificated pilot who would be willing to learn to fly a sUAS to the competency level required for professional use.

Minimum requirements for the PIC include:

1. A minimum of 200 flight cycles and 25 hours of total time as a sUAS rotorcraft pilot and at least 10 logged as a sUAS pilot with a similar sUAS type (single blade or multi-rotor);

2. A minimum of 5 hours as sUAS pilot with the make and model of sUAS to be utilized for operations under the exemption and 3 take offs and landings in the preceding 90 days;

3. Have undergone a qualification process as specified in the Flight Operations & Procedures Manual consisting of a knowledge & skill test the aircraft to be used.

I intend to use commercially available sUAS Components for sUAS. These sUAS systems will be tested for quality & safety under controlled conditions before being used in the field. The sUAS is less than 55 lbs. fully loaded, carries neither a pilot nor a passenger, and operates exclusively within a secured area. I have a routine maintenance schedule to verify that the sUAS will remain in safe and operational condition. Please see **Appendix B**, for Specific Types of sUAS.

Notes regarding : 14 C.F.R. Part 21, Subpart H

In accordance with the statutory criteria provided in Section 333 of PL 112-95 in reference to 49 USC 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation , we request that's aircraft exemption meets the conditions of Section 333. Therefore , if granted Section 333 relief of 14 CFR part 21, and any accosted noise certification and testing requirements of part 36, is not necessary.

Notes regarding: 14 C.F.R. § 45.23(b). Marking of the Aircraft

Given the size of the sUAV, two inch lettering will be impossible, UAS will 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 will be as large as practicable.

Notes regarding: 14 CFR § 91.7(a) Civil Aircraft Airworthiness

My request is based on the fact tat no airworthiness certificate will be issued for the UAS. My UAS will not require an airworthiness certificate in accordance with 14 CFR part 21, subpart H. Based on the fact that an airworthiness certificate will not be issued, exemption from § 91.7(a) is not necessary.

Notes Regarding: 14 CFR§91.9(b)(2)Civil aircraft flight manual, marking and placard

Certifications required, the original intent these regulations was to display an aircraft's airworthiness, certification, and registration documents so they would be easily available to inspectors and passengers. Based on the FAA Memorandum subject "Interpretation regarding whether certain required documents may be kept at an unmanned aircraft's control station," dated August 8, 2014, the requested relief from 14 CFR §§ 91.9(b)(2) and 91.203(a) and (b) is not necessary.

Notes Regarding: §91.109 Flight instruction; Simulated instrument & certain flight test

Small UASs, by their design, do not have fully functional dual controls. Flight control is accomplished through the use of a control box that communicates with the aircraft via radio communications. Aircraft being considered for use by me allow the UAS Instructor to place the aircraft into "loiter" mode (fixed altitude stationary hold). In the event of the student losing control, the UAS instructor can quickly and via alternate equipment (equipment not in the hands of the student) place the aircraft

into a mode that then allows the instructor to bring the aircraft back into control and back to the pre-determined and/or safe landing location.

I do not describe training scenarios in which a dual set of controls would be utilized or required, i.e. dual flight instruction, provided by a flight instructor or other company-designed individual, that would require that individual to have fully functioning dual controls. Rather, I would evaluate the qualification of its PICs based on their experience with the UAS to be operated and verifies through testing, in lieu of formalized training. As such, I do not seek relief from 14 CFR § 91.109.

Notes Regarding § 14 CFR 91.119(b)

Relief from § 14 CFR 91.119(b), operation over congested areas is not applicable, because the operations performed will only be conducted within the secure area described herein.

My safety Operations & Procedures Overview:

Technology Considerations:

Best in class, tried and proven technologies that are in advanced iterations. Software from highly-reputable industry partners will include feature-

1. Auto descent (landing) if communication signal were to be severed. If the sUAS loses communications, the sUAS will have the capability to return to a pre-determined location within the security perimeter and land.
2. Auto descent (landing) if battery were to drop lower than nominal level.
3. Flights will be terminated at 25%battery power reserve.
4. Live video for the operator gives real-time positioning feedback. Another words, I can monitor the scene from the vehicle's perspective for collision avoidance, and to maintain spatial orientation.
5. The sUAS will have the capability to abort a flight in case of unpredicted obstacles or emergencies.
6. On-Screen-display (OSD) contains operating information to ascertain vehicle health at all times: speed, altitude,number of GPS satellites (when available), heading, and voltage.
7. GPS Lock supplies for return-to-home (RTH). Should command and Control (C2) link failures occur (highly improbable), vehicle returns automatically to the point of launch.
8. Altitude information will be provided to the sUAS pilot via a digitally encoded telemetric data feed, which downlinks from the aircraft to a a ground-based on-screen display. This altitude information will be generated by equipment installed on board the aircraft, using GPS triangulation, digitally encoded barometric altimeter, or radio altimeter, or any combination thereof. Prior to each flight, a zero altitude initiation point will be established and confirmed for accuracy by the Pilot.

Mechanical/Physical:

1. I will fly in Line-of-sight (LOS) only. The vehicle will always remain in direct LOS to the pilot, thus eliminating the concern of signal severance (flying behind objects/walls).
2. The sUAS will with less than 55lbs and travel at less than 50 knots.
3. Batteries should far exceed the capacity required for the actual flight time.
4. Flights will be operated at an altitude of no more than 400 feet AGL.
5. Fireproof bags for storage and charging of high capacity Lipo batteries on-site.
6. UA operated under this exemption will be marked in accordance with 14 CFR part 45 or as otherwise authorized by the FAA.

Personel:

1. Spotters ensure safe iteration and act as a redundant set of eyes for operators (pilot, gimbal op, director.
2. Radio spectrum analysis for interference on the frequencies utilized for vehicle control/communication.
3. A briefing will be conducted in regard to the planned sUAS operations prior to each day's activities. It will be mandatory that all personnel who will be performing duties within the boundaries of the safety perimeter be present for this briefing.
4. The operator will obtain consent of all persons involved in the sUAS operations and ensure that only consenting persons will be allowed within 100 feet of the flight operations.
5. Observer and pilot will at all times be able to communicate by voice.
6. Written and/or permission from the relevant property holders will be obtained.
7. Pilot and observer will have been trained in operate of UAS generally and received up-to-date information on the particular UAS to be operated.

Operations:

1. The unmanned aircraft (UA) must weigh less than 55 pounds (25 Kg), including energy source(s) and equipment. Operations authorized by this petition of exemption are limited to the following aircraft described in Appendix B. Proposed operations of any other aircraft will require a new petition or a petition amendment to this request.

2. Th UA may not be flown at a ground speed exceeding 50 knots.

3. Flights must be operate at an altitude of no more than 400 feet above ground level (AGL), as indicated by the procedures specified in the operator's manual. All altitudes reported ago ATC must be in feet AGL.

4. 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.

5. All operations must utilize a visual observer (VO). The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and Pic must be able to communicate verbal at all times.

6. The operator's manual included as Appendix C and this petition of exemption must be maintained and made available to the Administrator upon request. If a discrepancy exist between the conditions and limitations in this exemption and the procedures outlined in the operator's manual, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operator's manual.
   The operator may update or revise its operator'd manual. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator upon request. The operator must also present updated and revised casements if i petitions for extension or amendment. If the operator determines that any update or revision would affect the basis for which the FAA grants this petition for exemption, ten the operator must petition for amendment to their exemption. The FAA's UAS Integrations Office (AFS-80) may be contacted if questions arise regarding updates or revisions to the operator's manual.

7. Prior to each flight the PIC must inspect the UAS to ensure it is in a condition for safe flight. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight. The Ground Control Station, if utilized, ,must be included in the pre-flight inspection. All maintenance and alterations must be properly documented in the aircraft records.

8. Any UAS that has undergone maintenance of alterations that affect the UAS operation or flight characteristics, e.g. replacement of a flight critical component, must undergo a functional test flight in accordance with the operator's manual. The PIC who conducts the functional test flight must make an entry in the UAS aircraft records of the flight. The requirements and procedures for a functional test flight and aircraft record entry must be added to the operator's manual.

9. The operator must follow the manufacturer's UAS aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements. When unavailable, aircraft maintenance/component/overhaul, replacement, and inspection/maintenance requirements must be established and identified in the operator's manual. At a minimum, requirements for the following must be included in the operator's manual:
-Actuators/servos;

-Transmission (single rotor);

-Powerplant (motors);

-Electronic speed controller;

-Batteries;

-Mechanical dynamic components (single rotor)

-Remote command and control;

-Ground Control station (if used); and

-Any other components as determined by the operator;

10. Prior to operations conducted for the purpose of infrastructure inspectrosm the PIC must have accumulated and logged in a manner consistent with 14 CFR § 61.51(b), a minimum of 200 flight cycles and 25 hors of total time as a UAS rotorcraft Pilot and at least 10 hours logged as a UAS pilot with a similar UAS type (single blade or multi rotor). Prior documented flight experience that was obtained in compliance with applicable regulations my satisfy their requirement. Training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA withe appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

11. Prior to operations conducted for the purpose of infrastructure inspection, the PIC must have accumulated and logged, in a manner consistent with 14 CFR § 61.51(b), a minimum of five hours as UAS pilot operations the make and model of UAS to be utilized of operations under the exemption and three take-offs and three landings in the preceding 90 days. Training, proficiency, experience-building, and take-off and landing currency flights can be conducted under this piton of exemption to accomplish the required flight time and 90 day currency. During training, proficiency, experience-building, and take-off and landing currency flights all persons not essential for flight operations are considered non-participants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

12. Prior to any flight apparitions authorized by this petition of exemption, the PIC and VO must have successfully completed a qualification process, as outlined in the operator's manual. As this is a requirement stipulated by the operator, the test must be developed and implemented by a qualified person designated at the sole discretion of the operator. A record of completion of this qualification process must be documented and made available to the Administrator upon request.

13. Prior to operations conducted for the purpose of infrastructure inspection, a flight demonstration, administered by an operator-approved and -qualified pilot must be successfully completed and documented. This documentation must be available for review upon request by the Administrator. Because the knowledge and airmanship test qualifications have been developed by the operator, and there are no established practical test standards that support a jurisdictional FAA FSDO evaluation and approval of company designed

examiners, the petitioner will conduct these test in accordance with the operator's manual.

14. The UA may not be operated over any person, except authorized and consenting personnel, below an altitude that is hazardous to persons or property on the surface in the event of a UAS failure or emergency.

15. Regarding the distance form participating persons, the operator's manual has safety mitigations for authorized and consenting personnel. At all times, those persons must be essential to operations.

16. Regarding distance from nonparticipating persons, the operator must ensure that no persons are allowed within 500 feet of the area except those consenting to be involved and necessary for the operation being performed. This provision may be reduced to no less than 200 feet if it would not adversely affect safety and the Administrator has approved it. For example, an equivalent level of safety may be determined b y an aviation safety inspector's evaluation of the infrastructure inspection area to note terrain features, obstructions, buildings, safety barriers, etc. Such barriers may protect nonparticipating persons (observers, the public, news media, etc.) from debris in the event of an accident.

17. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the security perimeter and land or be recovered in accordance with the operator's manual.

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

19. Each UAS operation must be completed with 25% battery power remaining.

20. The Operator must obtain an Air Traffic Organization (ATO) issued Certificate Waiver or Authorization (COA) prior to conducting any operations under this petition of exemption. This COA will also require the operator to request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation.

21. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have

identification (N-Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

22. The operator must develop procedures to document and maintain a record of the UAS maintenance, preventative maintenance, alterations, status of replacement/overhaul component parts, and the total time in service of the UAS. These procedures must be added to the operator's manual.

23. Each UAS operated under this exemption must comply with all manufacturer Safety bulletins.

24. The operator must develop UAS technician qualification criteria. These criteria must be added to the operators manual.

25. The preflight inspection section in the operator's manual must be amended to include the following requirement: The preflight inspection must account for all discrepancies, i.e. inoperable compost, items or equipment, not covered in the relevant preflight inspection sections of the operator's manual

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

27. At least 3 days before scheduled flight the operator of the UAS affected by this exemption must have a written Plan of Activities.
The Plan of Activities must include at least the following: Dates and Times of proposed flight; Name and phone number of the operator for the UAS; name and phone number of the person responsible for the on-scene operation of the UAS; Make, model, and serial number or N-Number of UAS to be used; Name and certificate number of UAS PICs involved in the event; a statement that the operator obtained permission from property owners and/or local officials if applicable; Signature of Exemption holder and a description of the flight activity, including maps of affected areas and altitudes essential to accomplish the operation.

28. The documents require under 14 CFR §§ 91.1 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.

29. The UA must remain clear and yield the right of way to all other manned operations and activities at all times (including, but not limited to, ultralight vehicles, parachute activities, parasailing activities, hang gliders, etc.).

30. UAS operations may not be conducted during the 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.

31. The UA may not operate in class B, C, or D airspace without written approval from the FAA. The UA may not operate within 5 nautical miles of the geographic center of non-towered airport as denoted on a current FAA-published aeronautical chart unless a letter of agreement within the airport's management is obtained, and the operation is conducted in accordance with a NOTAM as required by the operator's COA. The letter of agreement with the airport management must be made available to the Administrator upon request.

32. 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. Further flight operations may not be conducted until the incident, accident, or transgression is reviewed by AFS-8- and authorization to resume operations I provided.

Support for Petition for Exemption

In accordance with the procedural requirements of 14 C.F.R. § 11.81, I provide the following information:

Contact Information:

Neil B. Sulish

2006 Long Beach Boulevard

Surf City, NJ 08008

(609) 234-0864

NeilSulish@yahoo.com

Regulatory Provisions from which I seek an Exemption

I believe it may need an exemption from the following provisions to conduct the contemplated operations. In some instances, relief is needed because relief form another provisions renders compliance with the regulation at hand infeasible.

333 Aircraft Exemption Status

14 C.F.R. §61.113(a) and (b)

14 C.F.R. §91.119(c)

14 C.F.R. §91.121

14 C.F.R. §91.151

14 C.F.R. §91.405(a)

14 C.F.R. §91.407(a)

14 C.F.R. §91.409(a)(1)&(2)

14 C.F.R. §91.417(a)&(b)

I believe an exemption is only needed form the above-listed regulatory provisions. To the extent that the FAA believes that additional relief is required for me to conduct

the operations described here, I request an exemption from any such regulatory provisions as well.

The Extent of Requested Relief and the Reasons Relief is Needed

Section 333 Aircraft Exemption Status:

Section 333 of the Modernization Act authorizes the FAA to exempt the aircraft from the requirement for an airworthiness certificate based on a consideration of the size, weight, speed, operational capability of the particular UAS, as well as its proximity to airports and populated areas. An analysis of these criteria demonstrates that the sUAS operated without an airworthiness certificate in the areas and under the conditions contemplated by myself will be at least as safe, or safer, than a conventional aircraft (fixed wing or rotorcraft) operating with an airworthiness certificate without the conditions proposed in this request.

The sUAS is less than 55 lbs. fully loaded, carries neither a pilot nor passenger, and operates exclusively within a secured area. Unlike other civil aircraft, operations under this exemption will be tightly controlled and monitored by the operator and observer. Operations will be conducted in compliance within the FAA and with local public safety requirements to provide security for the area of operation as is now done with conventional equipment, infrastructure, bridge and out building evaluation. These safety enhancements provide an expanded degree of safety to the inspectors over conventional operations. Lastly, application of these same criteria demonstrates that there is no credible threat to national security posed by the sUAS due to its size, speed of operation, lack of explosive materials and inability to carry an extensive external load.

Given the size and limited operating area associated with the aircraft to be utilized by the Applicant, this meets the requirements of an equivalent level of safety under Part 11 and Sections 333 of the Reform Act. The Federal Aviation Act (49 U.S.C. §44701(f)) and Section 333 of the Reform Act both authorize the FAA to exempt aircraft for the requirement for an airworthiness certificate, upon consideration of the size, weight, speed, operational capability, and proximity to airports and populated areas of the particular sUAS. In all cases, an analysis of these criteria demonstrates that the UAS operated without an airworthiness certificate, in the restricted environment and under the conditions proposed will be at least safe, or safer, than a conventional aircraft (fixed wing or rotorcraft) operating with an airworthiness certificate without the restrictions and conditions proposed.

14 C.F.R. §61.113(a) and (b)

§61.113 Private Pilot privileges and limitations: Pilots in command.

(a) Except as provided in paragraphs (b) through (h) of this section, no person who holds a private pilot certificate may act as pilot in command of an aircraft that is carrying passengers or property for compensations or hire; nor may that person, for compensation or hire, act as pilot in command of an aircraft.

(b) A private pilot may, for compensation or hire, act as pilot in command of an aircraft in connection with any business of employment if:

(1) The flight is only incidental to that business or employment; and

(2) The aircraft does not carry passengers or property for compensation or hire.

I plan on conducting all sUAS operations, while I do not hold a commercial pilot license, the sUAS will not carry property for compensation or hire since it will be used solely to perform operations at hand. Without an exemption, I would be required to hold a commercial pilot certificate under §61.133. However, the risk associated with the contemplated operations is less than the risk posed by a traditional aircraft. The sUAS will fly at altitudes well below the permissible limits for other civil aircraft, eliminated the risk to other aircraft, and within a geographical envelope under the sole control of myself. Accordingly, the risk would be limited to myself, as I will be appropriately outfitted in safety gear, and my property on the ground. Requiring a commercial pilot certificate would provide no appreciable safety benefit and would needlessly impose additional cost on myself. Because the contemplated operations would not comply with §61.113(b)(1) and none of the other exceptions to paragraph (a) apply, relief is needed from both paragraphs (a) and (b).

14 C.F.R. 91.119(c)

§91.119 Minimum safe altitudes: General.

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

***

(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to an person, vessel, vehicle, or structure

****

I submit that the only relief it requires from §91.119 is from the minimum altitudes listed in paragraph (c). Relief is required from paragraph (c) for fixed wing operations because asset evaluation conducted at 500 feet or higher is insufficiently distinct to be meaningful. Since operations at this altitude also pose a heightened risk of collision with another aircraft, safety can only be assured through a grant of an exemption. The anticipated rotorcraft operations should be adequately addressed by paragraph (d)(1). Additionally, relief should not be needed from paragraph (a) because an emergency landing of the aircraft due to power failure will not create an undue hazard to persons or property on the surface. As noted in the depletion of why an exemption will not adversely affect safety, I have exclusive use of the land over with the sUAS will be operated, and public access is usually restricted. It also has exclusive use of significant portions of land adjacent to the infrastructure and structures that will be objects of evaluation and analysis. My clients will tightly unreal access to land and have the ability to assure that no individuals unassisted with the planned operations are on the affected land. As such, the risk of injury is minimal. I do not contemplate conduction operations over congested areas, so relief is not request from paragraph (b).

14 C.F.R. 91.121

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."

*****

As the sUAS may not be a barometric altimeter, but instead a GPS altitude read out, an exemption may be needed. An equivalent level of safety will be achieved by the operator, pursuant to the Manual and Safety Check list, confirming the altitude of the launch site shown on the GPS altitude indicator before flight.

Altitude information will be provided to the sUAS pilot via a digitally encoded telemetric data fee,d which downlinks from the aircraft to a ground-based on-screen display, This altitude information will be generated by equipment installed on board the aircraft, using GPS triangulation, or digitally encoded barometric altimeter, or radio altimeter, or any combination thereof. Prior to each flight a zero altitude initiation point will be established and confirmed for accuracy by the pilot.

14 C.F.R. 91.151

Operating the sUAS in a pre-defined area with less than 30 minutes of reserve fuel does not raise the type of risk contemplated by §91.151, i.e., that an aircraft could run out of fuel in the event that it has to be flown to an alternate airport or circle that planned airport in the event of unanticipated conditions. I do not indeed to use the sUAS for point-to-point flights and will not operate the sUAS beyond visual line of sight. Nor will the sUA require an airport in order to land. Rather, I will operate the sUAS will be pre-planned flight paths (taking into account weather conditions) designed to allow the sUAS to fly to the point of intended landing. As such, there is no need for a time-based excess fuel requirement. Rather it should be sufficient to require only as much additional excess flight capacity as necessary to safely land the sUAS. I believe that a 25% battery reserve is more than sufficient to meet the objective.

14 C.F.R. 91.405(a), 91.407(a)(1), 14 C.F.R. 91,409(a)(1)&(2) and 14 C.F.R. 91.417(a)&(B)

§91.405 Maintenance required.

Each owner or operator of an aircraft -

(a) Shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter;

*****

§91.407 Operation after maintenance, preventive maintenance, rebuilding, or alteration.

(a) No person may operate any aircraft that has undergone maintenance, rebuilding or alteration unless -

(1) It has been approved for return to service by a person authorized under 43.7 of this chapter

§91.409 Inspections

(a) Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months it has had _

(1) An annual inspection in accordance with part 43 of this chapter and has been approved for return to service by a person authorized by §43.7 of this chapter; or

(2) An inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.

*****

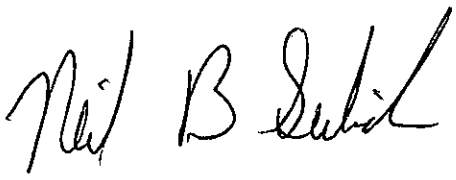
§91.417 (a)&(b)

*****

I believe that an exemption form these three maintenance requirements i approbate because the FAA has not developed maintenance standards that would allow an operator to meet the part 91 maintenance requirements. In particular, there are no individuals authorized by the FAA to approve a sUAS for return to service inspections required by §91.409(a) or conduct the initial airworthiness and annual return to service inspections required by §91.409(a). I will maintain the aircraft as instructed in the owner's manual and ASTM F2909, where applicable, and will not operate the aircraft until it has reasonably determined that any needed repairs have been made. However, because of the technical impossibility of meeting the requirements of §§91.405(a), 407(a), 409(a) and 417(a)&(b), I believe an exemption from these provisions is appropriate.

Please do not hesitate to contact me at the phone number or via the e-mail address provided above should you have any questions or concerns.

Respectfully submitted,



Neil B. Sulish