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

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

September 25, 2015

Exemption No. 13008
Regulatory Docket No. FAA−2015−2750

Mr. Jimmy J. Carini
Sky Estates Drone, LLC
229 Hillside Road
Oak Ridge, TN 37830

Dear Mr. Carini:

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 posted to the public docket on July 7, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Sky Estates Drones, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial videography and photography of real estate properties, inspections, mapping, surveying, special event production, and search and rescue.

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

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

Airworthiness Certification

The UAS proposed by the petitioner are the 3D Robotics Solo, DJI Phantom 2, and 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, Sky Estates Drones, LLC is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

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

Conditions and Limitations

In this grant of exemption, Sky Estates Drones, LLC is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the 3D Robotics Solo, DJI Phantom 2, and 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 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 October 31, 2017, unless sooner superseded or rescinded.

Sincerely,

John S. Duncan
Director, Flight Standards Service

Enclosures

Petition for Exemption, requesting relief from the FAA Modernization and

Reform Act of 2012, Public Law 112-95 FEB. 14, 2012, Section 333

Petitioner:

Jimmy J Carini

SKY ESTATES DRONES, LLC

229 Hillside Rd

Oak Ridge TN 37830

PETITION FOR EXEMPTION OF

SKY ESTATES DRONES, LLC

FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF

TITLE 14 OF THE CODE OF FEDERAL REGULATIONS

PART 21, SUB PART H AND SECTIONS §§ 61.113(a) & (b), 91.109, 91.7(a), 91.121,

91.151(b), 91.405(a), 91.407(a) (1), 91.409(a) (1) & (a) (2), AND 91.417(a) & (b)

CONCERNING COMMERCIAL OPERATION OF 3D ROBOTICS SOLO, DJI PHANTOM 2 AND PHANTOM 3 PROFESSIONAL UNMANNED AIRCRAFT SYSTEMS PURDANT TO SECTION 333 OF THE FAA MODERNIZATION AND REFORM ACT OF 2012 (PUBLIC LAW 112-95)

REQUEST FOR EXEMPTION

Whereas, SKY ESTATE DRONES, LLC (Jimmy Carini) seeks for an exemption seeking relief from the requirements OF TITLE 14 OF THE CODE OF FEDERAL REGULATIONS. Relief from airworthiness certification requirements from the above mentioned regulations.

This exemption will permit SKY ESTATE DRONES, LLC to operate an Unmanned Aircraft System (UAS) for the commercial purpose of conducting aerial video and photography of Real Estate Properties (for homeowners, realtors, home builders, home contractors and / or home inspectors for real estate marketing and inspection of home exteriors) as well landscape, conducting power line inspection, aerial mapping, surveying and search & rescue along with special event production and film and television production over certain areas of the United States.

Granting this exemption to SKY ESTATE DRONES, LLC will allow buyers of the real estate market to see the viewing property from a different and broader angle, giving the buyer a greater perspective and seeing much more potential in a prospective property for sale.

Providing high quality digital imaging and video content to clients, utilizing 3D Robotics Solo, DJI Phantom 2 and DJI Phantom 3 Unmanned Aircraft System (UAS).

BACKGROUND INFORMATION

SKY ESTATES DRONES, LLC is based in Tennessee founded in 2015 a Limited Liability Company established May 20th 2015 with the Secretary of State Tennessee to specialize in real estate videography and photography.) Providing a topography landscape, and geographical view, conducting power line inspection, aerial mapping, surveying and search & rescue along with special event production and film and television production. Providing high quality digital imaging and video content and footage to its clients, utilizing 3D Robotics Solo, DJI Phantom 2, and DJI Phantom 3 Professional UAV's.

AERIAL OPERATION INTENTIONS

Sky Estate Drones will be in interest to conduct aerial video and photography of Real Estate Properties (for homeowners, realtors, home builders, home contractors and / or home inspectors for real estate marketing and inspection of home exteriors and interiors) Providing a topography landscape, and geographical view, conducting power line inspection, aerial mapping, surveying and search & rescue along with special event production and film and television production over certain areas of the United States.

More specifically, SKY ESTATES DRONES, LLC aerial video and photography operations will serve in the following areas:

- Aerial Videography / Photography of Residential, Commercial Buildings and Private Home Owners
- Aerial Surveys of Land, Geographical Structures and Power Lines
- Aerial Event Videography / Photography
- Aerial Film & Television Production
- Aerial Search & Rescue, along with Safety Inspections
- Increase Public Knowledge of UAS and Promote Safe UAS Operations.

The proposed aerial filming will be conducted over private property with controlled access in the NAS and with the knowledge and permit of the private property's owner.

Regulatory Basis for Exemption Request

In addition to the waiver authority provided in §333 of the Modernization Act, the FAA may grant an exemption 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 requirement in its 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. In this case, approval of this exemption would advance the public interest by significantly enhancing the safety and efficiency of market comparable and private events by allowing the UAS to accept the liability of the risks involved as the general public would attempt a duplicate result. As described more fully below, the requested exemption would permit the operation of UAS under tightly controlled conditions, thus ensuring that operations will not have an adverse impact on safety. Granting an Exemption is in the Public Interest. The safety and accuracy that the UAS can accept allows the general public to avoid potential accidents, both private industry and commercial. It provides a more accurate layout so fair market values (FMV's) may be determined in the lending and marketing process. By allowing the UAS to accept these tasks, it allows the general public safety to be greatly reduced and allows the property market and industry thrive on a fair and level ground.

By Granting Exemption it will not Adversely Affect Safety

This exemption for SKY ESTATE DRONES, LLC will impact the public by using the 3D Robotics Solo, Phantom 2 and the Phantom 3 Professional UA, while reducing the carbon footprint of aerial acquisitions, also eliminates noise pollution, as the UAS are propelled by battery powered electric motors, rather than an internal combustion engine.

This exemption for SKY ESTATE DRONES, LLC will impact the public by using the 3D Robotics Solo, Phantom 2 and the Phantom 3 Professional UA, while reducing the carbon footprint of aerial acquisitions, also eliminates noise pollution, as the UAS are propelled by battery powered electric motors, rather than an internal combustion engine.

Granting Exemption to SKY ESTATE DRONES, LLC will enhance safety using UAV's for videography and photography will allow buyers of the real estate market to see the full scope of what they are in the market to purchase when viewing property, showing terrain how it actually sets with the structure being positioned in the valley or on a hilltop, allowing the view of acreage, crops, ponds, lakes and oceans in relative position to the viewing property. Revealing structure that may not be suitable or safe possibly leading to restructure later, or even giving one a greater perspective to seeing much more potential in a prospective property for sale.

COMPLIANT WITH THE FEDRAL, STATE AND LOCAL LAWS TO FLY UAV'S

SKY ESTATE DRONES, LLC will remain compliant with the federal, state and local laws to fly UAV's. Ensuring SKY ESTATE DRONES, LLC does not fly any UAV's without daylight. SKY ESTATE DRONES, LLC will not fly UAV's above 200 feet. The UAV's will be carried to the site of UAV use. UAV's will not carry no passengers or crew and, therefore, will not expose them to the risks associated with manned aircraft, and SKY ESTATE DRONES, LLC will not fly the UAV's within a congested area or within operations at least 2 miles from any public airports (including heliports). In the event an operation needs to be conducted closer to an airport, SKY ESTATE DRONES, LLC will inform the airport operator and airport air traffic control tower of the contemplated operation and will comply with any directions issued by air traffic control at that airport. SKY ESTATE DRONES, LLC will stay within the limits of airspeed and not exceeding 29 knots (15 m/s), Nor shall any of SKY ESTATE DRONES, LLC fly a UAV weighing more than 55 lbs. Each UAV will be registered with the FAA and display the proper registration stickers during flight.

These UAV's have a failsafe mode which activates the UAV return to home(RTH) feature so that SKY ESTATE DRONES, LLC can ensure they do not get out of the operators control, whether it's because the UAV got out of range, or there was a signal interruption, and or battery on the UAV or controller were low. The UAV will activate the RTH feature and return where it started from to ensure public safety of the craft.

Petitioner, SKY ESTATES DRONES, LLC, pursuant to the provisions of the Federal Aviation Regulations (14 C.F.R. § 11.61) and the FAA Modernization and Reform Act of 2012 (FMRA), Section 333, Special Rules for Certain Unmanned Aircraft Systems, hereby petitions the Administrator to commercially operate the 3D Robotics Solo, DJI Phantom 2 , and DJI Phantom 3 Professional UAS in the National Airspace System (NAS), and for an exemption from the requirements of 14 C.F.R §§ 61.113(a) & (b), 91.109, 91.7(a), 91.121, 91.151(b), 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b).

In consideration of the speed, weight, size, and limited operating area associated Sky Estate Drones for Exemption Page 7 with the unmanned aircraft and its operation, SKY ESTATES DRONES, LLC operation of 3D Robotics Solo, DJI Phantom 2 and DJI Phantom 3 Professional UAS meets the conditions of FMRA Section 333 and therefore, will not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H.

Accordingly, SKY ESTATES DRONES, LLC requests relief from Sections 91.405(a), 91.407(a)(1), 91.409(a)(1) & (a)(2), and 91.417(a) & (b), as these sections set forth requirements for maintenance that only apply to aircraft with an airworthiness certificate.

SKY ESTATES DRONES, LLC submits that the requested relief is proper since an equivalent level of safety will be ensured. SKY ESTATES DRONES, LLC will use experienced personnel or technicians to perform maintenance, alterations, or preventive maintenance on the UAS's using the methods, techniques, and practices prescribed in the operating documents (i.e., Monthly Maintenance Log, and 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional Instruction Manual).

Furthermore, SKY ESTATES DRONES, LLC will document and maintain all maintenance records for the 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional UAS. Relief from certain requirements of Section 61.113(a) and (b), entitled Private pilot privileges and limitations:

> Pilot In Command, is requested by SKY ESTATES DRONES, LLC to the extent necessary to allow a Pilot in Command (PIC) holding a Supplemental Pilot Certificate, and who has demonstrated, by meeting minimum flight- hour and currency requirements, that the PIC is able to safely operate the 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional UAS in a manner consistent with this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from people, vessels, vehicles and structures.

Sky Estate Drones seeks relief from Section 91.7(a), entitled Civil aircraft airworthiness, because the 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional UAS do not require an airworthiness certificate in accordance with 14 C.F.R. Part 21, Subpart H.

As such, SKY ESTATES DRONES, LLC submits that it will ensure that the 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional UAS are in an airworthy condition, prior to every flight, by determining that the UAS's are in compliance with the operating documents (i.e., Monthly Maintenance Log, and 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional Instruction Manual), and that the aircraft are in a condition for safe flight.

SKY ESTATES DRONES, LLC also seeks an exemption from the requirements of Section 91.121, entitled Altimeter Settings, as the 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional UAS will not have a typical barometric altimeter onboard.

However, altitude information of the 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional UA will be provided to the PIC via Global Positioning System (GPS) equipment and radio communications telemetry data link, which downlinks from the UA to the GCS for active monitoring of the flight path.

This altitude information, combined with SKY ESTATES DRONES, LLC operation of the 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional UAS within visual line of sight, at or below 200 feet AGL, will ensure a level of safety equivalent to Section 91.121.

Additionally, SKY ESTATES DRONES, LLC seeks an exemption from the requirements of Section 91.151(b), entitled Fuel requirements for flight in VFR conditions. SKY ESTATES DRONES, LLC submits that safety will not be affected by operation of the 3D Robotics Solo, DJI Phantom 2 Vision and, DJI Phantom 3 Professional UA during daylight hours in visual meteorological conditions (VMC) under visual flight rules (VFR), with enough battery power to fly for a total duration of approximately 13.5 minutes to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 4.5 minutes.

Minimum requirements for the PIC include:

1) 75 hours of logged UAV Flight Time including still and video capture

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

3) Maintain an understanding of all associated pre-flight, in-flight and post flight checklists.

SKY ESTATE DRONES, LLC intends to use commercially available UAV Components for UAV. These UAV systems will be tested for quality & safety before being deployed to the field. The UAV is less than 55 lbs. fully loaded, carries neither a pilot nor passenger, and operates exclusively within a secured area. We have a routine maintenance schedule to verify that the UAV will remain in safe and operational condition.

Please see **Appendix B**, for Specific Types of UAV.

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 this aircraft exemption meets the conditions of Section 333. Therefore, if granted Section 333 relief of 14 CFR part 21, and any associated 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 theUAV, two-inch lettering will be impossible. UA 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
SKY ESTATE DRONES, LLC request is based on the fact that no airworthiness certificate will be issued for the UAS. SKY ESTATE DRONES, LLC UAV's 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 & placard
Certifications required, the original intent of 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 tests
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 SKY ESTATE DRONES, LLC 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 predetermined and/or safe landing location.

SKY ESTATE DRONES, LLC does 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-designated individual, that would require that individual to have fully functioning dual controls. Rather, SKY ESTATE DRONES, LLC evaluates 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, SKY ESTATE DRONES, LLC does 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 SKY ESTATE DRONES, LLC operations will only be conducted within the secured area described herein.

SKY ESTATE DRONE, LLC 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 features -

1. Auto descent (landing) if communication signal were to be severed. If the UAV loses communications, the UAV will have 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 operator gives real-time positioning feedback. In other words, we can monitor the scene from the vehicle's perspective for collision avoidance, and to maintain spatial orientation.
5. The UAV 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 UAV pilot via a digital coded telemetric data feed, 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.

Mechanical/Physical:

1. We will fly 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 weigh less than 55 lbs and travel at less than 50 knots.

3. Batteries should far exceed the capacity required for actual flight time.

4. Flights will be operated at an altitude of no more than 200 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.

Personnel:

1. Spotters ensure safe operation 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 UAV 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 the consent of all persons involved in the UAV 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 oral permission from the relevant property holders will be obtained.

7. Pilot and observer will have been trained in operation of UAV generally and received up-to-date information on the particular UAV 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. The UA may not be flown at a ground speed exceeding 50 knots.

3. Flights must be operated at an altitude of no more than 200 feet above ground level (AGL), as indicated by the procedures specified in the operator's manual. All altitudes reported to 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, as specified on the PIC's State issued identification license.

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 verbally 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 exists 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's 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 documents if it 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, then the operator must petition for amendment to their exemption. The FAA's UAS Integration 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 preflight inspection. All maintenance and alterations must be properly documented in the aircraft records.

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 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:

a. Actuators / Servos;
b. Transmission (single rotor);
c. Powerplant (motors);
d. Propellers;
e. Electronic speed controller;
f. Batteries;
g. Mechanical dynamic components (single rotor);
h. Remote command and control;
i. Ground control station (if used); and
j. Any other components as determined by the operator;

10. The Pilot In Command (PIC) Must have logged the required information as set previous in the minimum requirements for a PIC

11. 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.

12. 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 UAV pilot operating the make and model of UAV to be utilized for 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 petition 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 nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

13. Prior to any flight operations 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.

14. 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 designated examiners, the petitioner will conduct these tests in accordance with the operator's manual.

15. The UA may not be operated directly 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.

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

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 flight path operations.

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 maybe determined by an aviation safety inspector's evaluation of flight path 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 of 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 theUAS. 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 operator's 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 components, 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 three days before scheduled UAV flight as contracted by any party, the operator of the UAS affected by this exemption must record a plan of activities. 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 operations conducted under this petition 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 UAS PICs involved in the flight event;
f) A statement that the operator has obtained permission from property owners and/or local officials to conduct the infrastructure inspection event; the list of those who gave
g) Signature of exemption-holder or representative; and
h) permission must be made available to the inspector upon request;
i) A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which flight path willbe conducted and the altitudes essential to accomplish the operation.

28. The 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.

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 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 UAS may not be operated by the PIC from any moving device or vehicle.

32. 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.

33. 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 a non-towered airport as denoted on a current FAA-published aeronautical chart unless a letter of agreement with that 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.

34. 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-80 and authorization to resume operations is provided.

Support for Petition for Exemption

In accordance with the procedural requirements of 14 C.F.R. §11.81, SKY ESTSATE DRONES, LLC provides the following information:

Contact Information:

SKY ESTATE DRONES, LLC
Jimmy Carini
229 Hillside Rd
Oak Ridge TN, 37830
865-385-2132
skyestatedrones@gmail.com

Regulatory Provisions from which SKY ESTATE DRONES, LLC seeks an Exemption

SKY ESTATE DRONES believes it may need an exemption from the following provisions to conduct the contemplated operations. In some instances, relief is needed because relief from another provision 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)

SKY ESTATE DRONES, LLC believes an exemption is only needed from the above-listed regulatory provisions. To the extent that the FAA believes that additional relief is required for SKY ESTATE DRONES, LLC to conduct the operations described here, we request an exemption from any such regulatory provisions as well.3

3 For example, 14 C.F.R. §91.417(a) imposes certain maintenance record keeping requirements "as applicable". Since none of the underlying requirements (e.g., inspection intervals) can be met and will

require an exemption, SKY ESTATE DRONES believes a separate exemption should not be required for§91.417(a).

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 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 UAV operated without an airworthiness certificate in the areas and under the conditions contemplated by SKYCAPTURE 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 UAV 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 with 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 UAV, due to its size, speed of operation, location of operation, lack of explosive materials and inability to carry a substantial 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 Section 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 from 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 UAV. In all cases, an analysis of these criteria demonstrates that the UAV operated without an airworthiness certificate, in the restricted environment and under the conditions proposed will be at least as 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: Pilot 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 compensation 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 or 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.

SKY ESTATE DRONES, LLC anticipates initially using a cadre of specially trained staff to conduct the UAV operations. While these individuals will not hold commercial pilot licenses. The UAV will not carry property for compensation or hire since they will be used solely to assist in evaluation of market comparable for real estate purposes and private party contracts; however, the employees' operation of the UAV will not be incidental to their employment with SKY ESTATE DRONES, LLC, and they will be compensated for such work. Without an exemption, the pilot 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 UAV will fly at altitudes well below the permissible limits for other civil aircraft, eliminating the risk to other aircraft, and within a geographical envelope under the sole control of SKY ESTATE DRONES, LLC clients.

Accordingly, the risk would be limited to SKY ESTATE DRONES, LLC personnel, who will be appropriately outfitted in safety gear, and SKY ESTATE DRONES, LLC client's property on the ground. Requiring a commercial pilot certificate would provide no appreciable safety benefit and would needlessly impose additional cost on SKY ESTATE DRONES, LLC. 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 any person, vessel, vehicle, or structure.

SKY ESTATE DRONES, LLC submits 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 the 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 a power failure will not create an undue hazard to persons or property on the surface. As noted in the explanation of why an exemption will not adversely affect safety, SKY ESTATE DRONES, LLC clients has exclusive use of

the land over which the sUAS will be operated, and public access is restricted. It also has exclusive use of significant portions of land adjacent to the infrastructure and structures that will be the objects of evaluation and analysis. SKY ESTATE DRONES, LLC Clients tightly control access to land and have the ability to assure that no individuals unassociated with the planned operations are on the affected land. As such, the risk of injury is minimal. SKY ESTATE DRONE, LLC does not contemplate conducting operations over congested areas, so relief is not requested 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 UAV may not have 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 UAV pilot via a digitally encoded telemetric data feed, 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

§91.151 Fuel requirements for flight in VFR conditions.

(a) No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed –

During the day, to fly after that for at least 30 minutes.

(b) No person may begin a flight in a rotorcraft under VFR conditions unless (Considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 20 minutes.

Operating the UAV 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 it has to be flown to an alternate airport or circle the planned airport in the event of unanticipated conditions.

SKY ESTATE DRONES, LLC does not intend to use the UAV for point-to-point flights and will not operate the UAV beyond visual line of sight. Nor will the UAV require an airport in order to land.

Rather, SKY ESTATE DRONES, LLC will operate the UAV using pre-planned flight paths (taking into account weather conditions) designed to allow the UAV 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 UAV.

We believe that a 25% battery reserve is more than sufficient to meet this 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)

SKY ESTATE DRONES, LLC believes that an exemption from these three maintenance requirements is appropriate 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 UAV for return to service under §91.407(a) or to conduct the initial airworthiness and annual return to service inspections required by §91.409(a).

SKY ESTATE DRONES, LLC 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), we 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.

Appendix A

Summary for Federal Register Publication
Pursuant to 14 C.F.R. Part 11, the following summary is provided for publication in the Federal Register should the FAA determine that publication is needed.
Petitioner: Jimmy Carini SKY ESTATE DRONES, LLC
Sections of 14 C.F.R. Affected:
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)
14 C.F.R. §91.417(a)&(b)
Description of Relief Sought:
Petitioner seeks relief from the requirements of 333 Aircraft Exemption Status, 14 C.F.R., 61.113(a)&(b)), 91.119(c), 91.121, 91.151, 91.405(a), 91.407(a), 91.409(a), and 91.417(a)&(b) to conduct UAV operations over SKY ESTATE DRONES, LLC Client's owned or controlled land, solely during daylight hours, to assist in the safe evaluation and analysis of infrastructure and operations. In general, UAV operations are intended to be conducted in areas remote from both congested areas and airports. The nature of operations anticipated by SKY ESTATE DRONES, LLC requires that the UAV be flown at relatively low altitudes SKYCAPTURE expects that in most instances, the UAV will be flown less than 75 feet from the highest structure along the path of the UAV and in no instances will be flown higher than 200 feet above the ground. Accordingly, the risk of interference with other aircraft is minimal.

Appendix B

UAV's to be operated and registered by FAA for the commercial use by SKY ESTATE DRONES, LLC

1) **3D Robotics Solo**

The 3D Robotics Solo specifications:

Cameras: Compatible with GoPro® HERO3, 3+ and 4; optimized for HERO3+ and 4

Streaming video quality: 720p

Flight time: 25 minutes; 20 minutes with payload*

Range: .5 miles** (.8 km)

Max speed: 55 mph (89 km/h)

Max ascent speed: 10 m/s in stabilize mode; “fly” mode spec forthcoming

Max descent speed: ditto

Max payload: 420 g

Max altitude: 400 ft per FAA regulation, user adjustable (122 m)

Motors: 880 kV

Propellers: 10” diameter 4.5” pitch self-tightening (24 cm diameter 144 cm pitch)

Autopilot: Pixhawk 2

Software: APM:Copter

Communication: 3DR Link secure WiFi network

Frequency: 2.4 GHz

Weight: 3.3 lbs. (1.5 kg) / 3.9 lbs. (1.8 kg) with GoPro® and Solo Gimbal

Dimensions: 10 in. tall (25 cm), 18 in. (46 cm) motor-to-motor

Flight battery: Lithium polymer 5200 mAh 14.8 Vdc

Battery charge time: ~1.5 hours

Controller battery: 2600 mAh 7.2 Vdc rechargeable lithium ion

App requirements: iOS 8.0 or later / Android 4.3 or later

Solo Gimbal:

Three-axis stabilization

Compatible with 3DR Solo and GoPro HERO3+ and HERO4

HDMI video output

Wireless software upgrade through Solo

Controllable range: 0° to -90° pitch

2) Phantom 3 Professional

The DJI Phantom 3 Professional specifications:

UAV

Weight (Battery & Propellers Included		1280 g
Diagonal Size (including propellers)		590 mm
Max. Ascent Speed		5 m/s
Max. Descent Speed		3 m/s
Hover Accuracy	-	Vertical: + / - 0.1 m (when vision positioning is active) or + /- 0.5
	-	Horizontal + /- 1.5 m
Max. Speed		16 m/s (ATTI mode, no wind)
Max Altitude Above Sea Level		6000 m
Operating Temperature		0°C to 40°C
GPS Mode		GPS/GLONASS

CAMERA	Sensor	Sony EXMOR 1/2.3" Effective pixels: 12.4 M (total pixels: 12.76 M
	Lens	FOV 94° 20 mm (35 mm format equivalent) f/2.8, focus at ∞

	ISO Range	100-3200 (video) 100-1600 (photo)
	Shutter Speed	8s -1/8000s
	Image Max Size	4000 x 3000
	Still Photography Modes	- Single Shot - Burst Shooting: 3/5/7 shots - Auto Exposure Bracketing (AEB): 3/5 - Bracketed Frames at 0.7EV Bias - Time-lapse
	Video Recording Modes	- UHD: 4096x2160p 24/25, 3840x2160p 24/25/30 - FHD: 1920x1080p 24/25/30/48/50/60 - HD: 1280x720p 24/25/30/48/50/60
	Supported SD Card Types	- UHD: 4096x2160p 24/25, 3840x2160p 24/25/30 - FHD: 1920x1080p 24/25/30/48/50/60 - HD: 1280x720p 24/25/30/48/50/60
	Max Bit Rate of Video Storage	60 Mbps
	Supported File Formats	FAT32/exFAT Photo: JPEG, DNG Video: MP4, MOV (MPEG-4 AVC/H.264)
	Operating Temperature	0°C to 40°C
GIMBOL	Controllable Range	Pitch -90° to +30°
	Stabilization	3-axis (pitch, roll, yaw)
Vison Positioning	Max Velocity	c Less than 8 m/s (when 2 m above ground)
	Altitude Range	30 cm-300 cm
	Operating Range	30 cm-300 cm

	Operating Environment	Surface with clear pattern and adequate lighting (Lux > 15)
Remote Controller	Operating Frequency	2.400 GHz-2.483 GHz
	Max Distance	2000m (outdoors and unobstructed)
	Video Output Port	USB
	Operating Temperature	0°C to 40°C
	Battery	6000 mAh LiPo 2S
	Mobile Device Holder	For tablet or smart phone
	Receiver Sensitivity (1%PER)	-101 dBm ±2 dBm
	Transmitter Power (EIRP)	FCC: 20 dBm
		CE: 16 dBm
	Working Voltage	1.2A@7.4 V
Battery Charger	Voltage	17.4 V
	Rated Power	100 W
	Capacity	4480 mAh
	Voltage	15.2 V
	Battery Type	LiPo 4S
	Energy	64 W
	Net Weight	356g
	Max Flight Time	Approximately 23 minutes
	Operating Temperature	-10°C to 40°C
	Max Charging Power	100 W
App / Live View	Mobile App	DJI Pilot
	EIRP	100 mW
	Live View Working Frequency	2.4GHz ISM
	Live View Quality	720P @ 30fps (depending on conditions and mobile device)
	Latency	220ms (depending on conditions and mobile device)
	Required Operating Systems	IOS 8.0 or Later
		Android 4.1.2 or Later
	Recommended Devices	iOS: iPhone 5s, iPhone 6, iPhone 6 Plus, iPad Air, iPad Air Wi-Fi + Cellular, iPad mini 2, iPad mini 2 Wi-Fi + Cellular, iPad Air 2, iPad Air 2 Wi-Fi + Cellular, iPad mini 3, and iPad mini 3 Wi-Fi + Cellular. This app is optimized for iPhone 5s , iPhone 6, and iPhone 6 Plus
		Android: Samsung S5, Note 3, Sony Xperia Z3, Google Nexus 7 II, Google Nexus 9, Mi 3, Nubia Z7 mini
		*Support for additional Android devices available as

testing and development continues

Phantom 2

The DJI Phantom 2 specifications:

Aircraft operating environment temperature	-10℃ to 50℃
Power consumption	5.6W
Supported Battery	DJI Intelligent battery
Weight (including the battery)	1000g
Take-off Weight	≤1300g
Hovering Accuracy (Ready to Fly)	Vertical: 0.8m; Horizontal: 2.5m
Max Yaw Angular Velocity	200°/s
Max Tilt Angle	35°
Max Ascent / Descent Speed	Ascent: 6m/s; Descent: 2m/s
Max Flight Speed	15m/s (Not Recommended)
Wheelbase	350mm
2.4GHz Remote Controller Operating	
Frequency	2.4GHz ISM
Communication Distance (open area)	1000m
Receiver Sensitivity	(1%PER) -97dBm

Working Current/Voltage	120 mA@3.7V
Built-in LiPo Battery Working Current/Capacity	3.7V, 2000mAh

DJI Intelligent Battery

Type	3S LiPo Battery
Capacity	5200mAh, 11.1V
Charging Environment Range	0℃ to 40℃
Discharging Environment Range	-20℃ to 50℃

Appendix C

PDF Files Attached

3D Robotics SOLO Manual

Phantom 3 Professional Manual

Phantom 2 Manual