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

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

August 26, 2015

Exemption No. 12625
Regulatory Docket No. FAA−2015−2446

Mr. Gary Buzel
8211 Vincetta Drive
Apartment 16
La Mesa, CA 91942−2440

Dear Mr. Buzel:

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

By letter dated June 2, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. You requested to operate an unmanned aircraft system (UAS) to conduct aerial photography, videography, and search and rescue 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 Inspire 1.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[1]. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Mr. Gary Buzel 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

[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.

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. Gary Buzel is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the DJI Inspire 1 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 August 31, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

June 2, 2015

FROM: Gary Buzel
8211 Vincetta Dr., Apt. 16
La Mesa, CA 91942-2440
858-361-9711
gbuzel@gmail.com

TO: U.S. Department of Transportation
Docket Management System
1200 New Jersey Ave., S.E.
Washington, DC 20590

Subject: Exemption Request under section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations contained in 14 CFR: 45.23(b), 91.103, 91.109, 91.119, 91.121, 91.151(a), 91.203(a), 91.7(a), 91.9(b)(2), 91.405(a), 91.407(a)(1), 91.409(a)(2), 91.417(a)(b).

To whom it may concern:

I am writing the exemption request on my own behalf, acting as pro pur - without counsel.

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (the "Reform Act") and C.F.R. Part 11, Gary Buzel (petitioner, applicant, operator, operational control), owner and operator of a Small Unmanned Aircraft System (sUAS) seek exemptions from Federal Aviation Regulations detailed herein for the operation of lightweight aerial imaging equipment for the purposes of aerial photography, videography, and for search and rescue operations.

The reason this applicant is requesting exemptions from the listed Federal Aviation Regulations is to allow for commercial operation of a sUA to collect aerial images/video for real estate, weddings, newsgathering, and search and rescue events so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.1.

The Petitioner/Operator:

The petitioner – Gary Buzel has been a licensed pilot since 1995 currently holding an Airline Transport Pilot Certificate (#3003234) for Multi Engine Land and CE-500 (Cessna Citation II Jet) type, and Commercial Pilot Privileges for Single Engine Land and Sea Airplane. The petitioner also holds a Certified Flight Instructor Certificate (#3003234 CFI) for Airplane Single/Multi Engine and Instrument Airplane. The petitioner holds a Ground Instructor for Instrument and Advanced. The petitioner has 3990 hours total time, 3872 in airplanes, 18 in rotorcraft, and has been a past aviation safety counselor with the Bradley International (Windsor Locks, CT KBDL) flight standards district office (FSDO) under the leadership of FAA Aviation Safety/Operations Inspector James Adams.

The petitioner has 5 years experience in aerial photography from Cessna 172, 182 and PA-28-181 manned aircraft platform. The petitioner has been flying model aircraft since he was 13, and has been flying sUAS "quadcopters" for 2 years as a hobbyist and has approximately 200 hours of total sUAS time.

The petitioner has instilled safety protocols derived from his training as a manned-aircraft professional pilot in combination with working with interests on the ground to avoid and prevent an sUAS being a public hazard both in the air and on the ground. The petitioner is available to offer assistance to the FAA in developing operational and safety protocols for sUAS's to be integrated into the National Airspace System (NAS). The petitioner believes that his exemption, if granted, would provide the FAA with an analytical, expanded and diverse sUAS

experience to help establish the necessary requirements and protocols for the safe operation of such aircraft systems in numerous applications within the NAS.

Aircraft

The petitioner will operate a sUAS made by manufacturer DJI, model Inspire 1/T600. Serial number W13DCA16020308, FAA registered under tail number N774GB. The Inspire 1/T600 description and equipment is as follows:

- The Inspire 1/T600 is a sUAS quadcopter made by DJI that has a fixed camera gimbal attached to a 4K camera which sits below the aircraft fuselage. This camera allows the operator on the ground to see a 720P high resolution a view from the aircraft that can be rotated a 360 degree angle in-flight.
- Max takeoff weight is 6.47 pounds
- Downlink telemetry to allow the operator to see onboard information relating to safe operations of flight including but not limited to; battery percentage remaining, overall status of flight systems, GPS location for position hold, auto return to home, and operational failsafes.
- The Inspire 1/T600 is limited by its software to a maximum ascent rate of 984 feet per minute and an altitude of 400 feet. Its maximum forward speed is 49 statue miles per hour or 37 knots.
- The Inspire 1/T600 is powered by a 5700 mah, 22 volt battery, providing 22 minutes of flight time under standard conditions per specifications. The aircraft alerts the operator with visual and audible warnings at 35% of battery remaining. The aircraft will not be operated in the air with less than 35% of battery remaining, and 0-35% is kept as emergency reserve to power the sUAS to a safe landing location in the event of an emergency.

Ground Based Control and Communications System

- The Inspire 1/T600 is controlled using a DJI manufactured transmitter, operating on FCC authorized frequencies of the 2.4 GHz band (2.4 – 2.483 GHz) See Manual page 57 for radio transmitter specifications. The transmitter has been approved by the Federal Communications Commission and bears approval logo on the transmitter.

- The above listed transmitter has a lithium polymer battery powering the unit for approximately 4 hours time between charges according to DJI specifications.

- The Inspire 1/T600's controller will be utilized by a single operator, but will require a visual observer when necessary

- The Inspire 1/T600 when coupled with an Apple iPad Air 2 provides the operator with a moving map display showing exact aircraft position, and HD video from the aircraft camera. Also the controller has it's own GPS receiver establishing a "home point" on each take off, therefore calibrating the aircraft to return to this takeoff point in the event of a control link signal loss or interference.

- Gary Buzel – the petitioner/operator while engaged in sUAS flight under this exemption will be carrying a Yaesu FTA-550, Air Band communications radio serial number #4N100614. The radio is capable of transmitting and receiving radio signals on the IACO radio aviation band of 118.000 to 136.975 MHz. The radio has a transmit power output of 5 watts AM PEP. While the sUAS is in flight in Class G and E airspace the operator, and/or observer will monitor "guard" frequency of 121.500 MHz. If operations are in controlled airspace Classes B,C,D,E, the operator will monitor and communicate directly if needed with the ATC facility in charge of that

respective airspace. Communications with ATC will be standard aviation communication etiquette/procedures utilizing the sUAS's "N" number issued by the FAA registration branch to identify this aircraft to ATC. Having real time radio communications with ATC and nearby aircraft we believe adds a significant margin of safety to our operation and the operations of other manned aircraft in the NAS. The operator also holds an FCC restricted radio telephone operator permit.

- Gary Buzel will be the sole operator of the sUAS for each flight, and when necessary will partner with a Visual Observer to assist in keeping in sight the sUAS at all times. The Visual Observer will assist the operator with obstacle clearance, people separation and navigation over terrain.

Operator's - Safety Plan

- Compliance with all FAA, state, and local municipal regulations.
- Altitude of operations less than 400 Feet AGL, although most operations will be at "tree line level" or under 200 feet.
- Preflight aircraft inspections conducted prior to each flight per DJI Inspire1/T600 operators guide.
- Postflight aircraft inspection conducted to each flight per DJI Inspire1/T600 operators guide
- Operator will conduct preflight planning, to include a weather briefing via DUATS or FSS, NOTAM/TFR/MOA checks, battery - power management calculations, and any COA requests or ATC/Airport management notifications done before flight.
- No operations directly over people or crowds.

- Operations will be only during daylight times, in VMC conditions, weather minimums include 500 feet below, 2,000 feet horizontal from clouds, and minimum 3 statue miles visibility. No Special VFR or IFR flights will be conducted.
- Any inflight emergencies will result in an immediate landing. There will be no "land when practicable" operations.
- The Inspire 1/T600 will be maintained per DJI instructions, and will follow manufacturer safety bulletins.
- If operating near an airport or in Class B,C,D airspace under a COA, operator will notify ATC via telephone prior to takeoff and notify via radio utilizing the sUAS's tail number. If radio or telephone communications cannot be established with ATC/Tower, the flight will not commence.
- When operating inflight, operator will monitor "GUARD" frequency of 121.5 MHZ and comply with any emergency requests if received.
- Operator will grant right of way to ALL other manned operations and activities at all times.

Lastly, the petitioner's safety plan is to operate the aircraft within the limitations provided by DJI – The manufacturer. This is to include, weight and balance, speed limitations, and altitude limitations.

Statutory Authority

Section 333, titled "Special Rules for Certain Unmanned Aircraft Systems," provides a mechanism for seeking expedited FAA authorization of safe civil sUAS operations in the National Airspace System (NAS). Section 333(a) states that the FAA "shall determine if certain unmanned aircraft systems may operate safely in the national airspace system before completion of the comprehensive plan and rulemaking required by section 332(b)(1) of this Act or the guidance required by section 334 of this Act." In Section 332(b)(1), Congress made it clear that Section 333 provides a mechanism for "expedited operational authorization." The FAA has

committed to complying with this mandate by granting several petitions almost identical to the one at hand. See, e.g. Exemption No. 11062, Regulatory Docket No. FAA-2014-0352 (granting regulatory exemptions to Astreus Aerial for operation of unmanned aircraft systems for the purpose of filming for the motion picture and television industry and aerial videography).

Section 333(b) identifies several factors that the FAA should consider in determining whether commercial sUAS operations should be approved. These include sUAS that, "as a result of their size, weight, and speed, operational capability, proximity to airports and populated areas, and operation 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." See section 333(b).

In addition to the specific authority conferred by Section 333, the FAA Administrator has general authority to grant exemptions from the FAA's safety regulations and minimum standards when the Administrator decides a requested exemption is in the public interest. See U.S.C. § 44701(f)

Requested Exemptions

14 CFR Part 21 and 14 CFR 91.203(a): Airworthiness Certificates

The petitioner seeks exemptions to apply for and maintain airworthiness certification for our sUAS. Model and serial numbers of our sUAS is provided above.

The petitioner will keep his sUAS in a safe, reliable, and airworthy condition, but it may not meet all standards set forth by part 91.203. Petitioner/operator will assume all responsibility for determining that the sUAS is in a condition safe for flight, as well as a condition that will not harm other people or property. This will be facilitated by operator using specific guidelines from the manufacturer, DJI, as well as following any guidance set for routine maintenance.

14 CFR 45.23(b): Display of Marks; general

Under this part it is required that each operator must display on that aircraft marks consisting of the Roman Capital "N" followed by the registration number of the aircraft. And near the entrance to the cabin or canopy etc., in letters between 2-6 inches in size the word "experimental."..

The Inspire 1/T600 sUAS is physically too small to place "N" numbers and "experimental" identifiers of this size specified in this section. We can comply completely with an "N" number and the "experimental" identifier but at a smaller size (around 1") is necessary to fit on the external shell of the Inspire1/T600 sUAS.

14 CFR 91.7(a): Civil aircraft airworthiness

This section states that no person may operate a civil aircraft unless it is in an airworthy condition.

Assuming no airworthiness certificate will be required due to relief requested from 14 CFR 21 (above), no regulatory standard exists for determining airworthiness. The equivalent level of safety will be achieved through the implementation of the flight manual and maintenance manual procedures, pilot training/experience, and analytical risk management for each flight.

14 CFR 91.9(b)(2): Civil Aircraft Flight Manual in the Aircraft

This section states that no person shall operate a US registered civil aircraft for which a rotorcraft flight manual is not required by §21.5 unless there is available in

the aircraft a current approved rotorcraft manual material, markings, and placards, or any combination thereof.

The Inspire 1/T600 sUAS, given its size and configuration has no ability or place to carry such a flight manual on the aircraft, not only because there is no pilot on board, but because there is no room or physical capacity capability to carry such an item on the aircraft. The equivalent level of safety will be achieved by the operator keeping the flight manual at the ground control station, immediately accessible by the operator during operations. Previous precedence is resident in Exemptions 8607, 8737, f8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, f32827, and 10700.

14 CFR 91.103: Preflight Action

This section requires each pilot in command to take certain actions before flight to insure the safety of the flight. As FAA approved rotorcraft flight manuals will not be provided for the aircraft an exemption is requested for relief. An equivalent level of safety will be obtained through the operator's use of the DJI Inspire 1 Owners manual along with the petitioner's/operator's safety plan outlined above (supra). Extensive flight planning under these practices will provide the equivalent level of safety.

14 CFR 91.109: Flight Instruction

This section states that no person shall operate a civil aircraft (except a manned free balloon) that is being used for flight instruction unless that aircraft has fully functioning dual controls.

The Inspire 1/T600 like almost all sUAS aircraft by their design do not have fully functional dial controls. Flight control is accomplished through the use of a control box that communicates with the aircraft via a 2.4 GHz radio communications link. The FAA has approved exemptions for flight training without fully functional dual controls for a number of aircraft and for flight instruction in experimental aircraft. See exemption notes 5778K and 9862A. The equivalent level of safety provided by the fact that neither pilot nor passengers will be carried in the aircraft and training would be conducted at an FAA approved training site, operating under a COA. If training would be conducted it should be noted that the petitioner holds a Certified Flight Instructors Certificate (3003234 CFI exp. 07/2017) for single and multi engine airplane, and instrument airplane.

14 CFR 91.119: Minimum Safe Altitudes

This section establishes safe altitudes for operation of civil aircraft. Section 91.119(d) allows rotorcraft to be operated at less than the minimums prescribed, provided the person operating the helicopter to be operated at less than the minimums prescribed, provided the person operating the helicopter complies with any route or altitudes prescribed for rotorcraft by the FAA. As this exemption is for a sUAS, that is a rotorcraft and the exemption requests authority to operate at altitudes from the surface to 400' AGL, an exemption may be needed to allow such operations. As set forth herein, except for the limited conditions stated in the DJI Inspire 1/T600 manual, the sUAS will never operate at an altitude higher than 400' AGL. It will however be operated in a restricted area with a bounded security perimeter where buildings and individuals will not be exposed to operations without their pre-obtained consent. This level of safety will be achieved utilizing telemetry from the Inspire 1/T600 sent back to the operator's console. Telemetry includes the following flight data: altitude (AGL), vertical and horizontal speed, direction and distance from operator.

The equivalent level of safety will be achieved given the size, weight, speed, of the sUAS as well as the location where it will be operated over. No flight will be taken without the permission of the property owner or local authorities. Because of this advance notice to the property owner, and participants, all affected individuals will be aware of the flight operations. Compared to flight operations with rotorcraft or fixed wing aircraft weighing more far more than the maximum 55 pounds proposed in this exemption herein and the lack of flammable fuel, the risks involved we believe are far less than those presently presented with conventional aircraft used for our stated purposes. In addition, a level of safety to aircraft operating in the NAS will be achieved through our flights being at the lowest altitude possible below 400' AGL, and offering full right of way to approaching aircraft.

14 CFR 91.121: Altimeter Settings

This section 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 have a barometric altimeter, but instead a GPS altitude readout, an exemption may be needed. An equivalent level of safety will be obtained by the operator, operating the aUAS pursuant to the manual and safety checklist, confirming the altitude of the takeoff site shown on the GPS altitude indicator before each flight.

14 CFR 91.151(a): Fuel Requirements for Flight in VFR Conditions

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

The battery power system in the DJI Inspire 1/T600 sUAS provides the aircraft with approximately 25 minutes of total flight time. When the Inspire 1/T600 battery is at 25% approx. 10 minutes of flight time is left. As stated in our safety plan above, the sUAS will not be operated with less than 35% or approx. 12 minutes of flight time remaining. The operator needs relief from the 30 minute requirement stated in this section as that time is longer than the useful flight time of the aircraft altogether.

14 CFR 91.203(a) and (b): Carrying Civil Aircraft Certification and Registration

This section requires that a person carry an appropriate airworthiness certificate that is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew. The sUAS has no onboard pilot or passenger, and no area to stow these required papers.

An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot flying the sUAS will have immediate access to them, to the extent they are applicable to the sUAS. The FAA has issued numerous exemptions to this regulation. A representative sample of other exceptions includes Exemption numbers: 9565, 9665, 9789, 9789A, 9797, 9797A, 9816A, and 10700.

14 CFR 91.405(a), 91.407(a)(1), 91.409(a)(2), 91.417(a)(b): Maintenance Inspections

These sections require that an aircraft operator or owner "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…..," and other shall inspect or maintain the aircraft in compliance with Part 43. Given that these sections and Part

43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the petitioner. Maintenance will be accomplished by the operator pursuant to the DJI flight manual and operating handbook.

An equivalent level of safety will be achieved because these physically small and lightweight small sUAS's are very limited in size and will carry a very small payload operating only in restricted operational areas for limited periods of time. If mechanical issues arise, the sUAS will land immediately and will be no higher than 400' AGL. As provided in the flight manual, the operator will ensure that the sUAS is in working order prior to starting a flight, performing any required maintenance beforehand. Moreover, the operator is the person most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition to provide the equivalent level of safety.

Closing

Gary Buzel is committed to safe flight practices, while integrating safe sUAS operations to the National Airspace System (NAS). We are confident in executing commercial sUAS operations that are safe, and provide a service to the public.

Gary Buzel is prepared to respond to any concerns and I look forward to working with the FAA on this important exemption. Please contact us with any follow-up questions or concerns.

Respectfully Submitted,

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Gary Buzel
ATP Pilot Cert # 3003234