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

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

August 17, 2015

Exemption No. 12479
Regulatory Docket No. FAA–2015–0860

Mr. Brett E. Lisa
CEO
ESRUAS, LLC
1889 Oak Park Drive North
Clearwater, FL 33764

Dear Mr. Lisa:

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 March 31, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of ESRUAS, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct real estate, wildlife conservation, and closed-set filming.

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

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

Airworthiness Certification

The UAS proposed by the petitioner is a DJI Phantom 2.

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, ESRUAS, 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

[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, ESRUAS, LLC is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the DJI Phantom 2 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

U.S. Department of Transportation, Docket Operations
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, SE., Washington, DC 20590

Exemption Request Pursuant to Section 333 of the FAA Reform Act of 2012

To Whom It May Concern:

We are writing pursuant to the FAA Modernization and Reform Act of 2012 and the procedures contained in 14 C.F.R. ESRUAS is a proponent of the recently released docket no.: FAA-2015-0150; Notice No. 15-01 and will abide by and assist in the development of all proposed rules but seeks relief from 14 C.F.R. until further protocols, standards and tests are established. ESRUAS, LLC is dedicated to the development of unmanned aircraft, specifically multi-rotor aircraft (aerial vehicles with a minimum of four ((4)) counter-rotating propellers) which are inherently stable with the ability to hover in place, and safety/flight procedures. Brett E. Lisa, CEO, of ESRUAS, LLC seeks relief from specific procedures contained in 14 C.F.R.

ESRUAS has received requests of high definition aerial photography from numerous entities, that pertain, but are not limited to; Real Estate, Wildlife Conservation, and closed-set filming. Brett E. Lisa, owner and operator of small unmanned multi-rotor aircraft, seeks relief, so the he may operate his small/lightweight unmanned aircraft systems commercially in airspace close to airspace regulated by the FAA as required by Section 333.

ESRUAS exemption request would permit its operation of small, lightweight, unmanned (remotely controlled within line of sight) multi-rotor aerial systems in tightly controlled and limited airspace. Predetermined, specifically marked areas of operation, private property locations that correspond or surpass current safety protocols will allow ESRUAS to operate within current safety parameters and to aid in the development of new protocols being implemented. As identified, amateurs with no flight experience, safety plan or controls in place to prevent catastrophe legally operate similar lightweight, remote controlled multi-rotors. ESRUAS is developing plans to monitor, evaluate and implement all of its UAS's safely.

The plans include but are not limited to: pre-flight visual inspection, pre-flight mechanical inspection, in-flight mechanical test, maintaining a visual of the aircraft and a flight log.

- Pre-flight visual inspection includes examination of; propellers, motors, electrical components and parts of the frame for chips, cracks, burns or any other damage.
- Pre-flight mechanical inspection is powering on the aircraft, transmitter(s) and receiver(s) – checking video feed and throttling up from 3rd person point-of-view without takeoff to ensure function of drive components (propellers, motors and speed controllers).

- In-flight mechanical test is done from 3rd person point-of-view (pilot watches the aircraft) at low altitude (eye level) – the pilot puts maximum input of pitch, roll, yaw and throttle sharply into transmitter to ensure all axis of aircraft are fully capable.
- Maintain visual of aircraft through 3rd person (pilot watches aircraft) operation or by using a spotter during 1st person (pilot sees point-of-view of aircraft) operation.
- A flight log documents the pilot in control, spotter, weather, area of operation and purpose of flight.

To date, ESRUAS has rejected all offers to work with interested parties on locations within the United States, to ensure it is in compliance with any applicable FARs. It, like other applicants, has done so despite Judge Patrick G. Geraghty's decision in the Raphael Pirker matter and his reasoning that no FARs prohibits the use of small, unmanned multi-rotor aircraft or lightweight UASs like those flown by other peer companies.

Granting ESRUAS's request unites with the Secretary of Transportation's responsibilities to not only integrate UASs into the national airspace system, but to " ... establish requirements for the safe operation of such aircraft systems [UASs] in the national airspace system" under Section 333(c) of the Reform Act. Further, ESRUAS will conduct its operations in compliance with the protocols described herein or as otherwise established by the FAA.

Granting ESRUAS exemption would benefit the public in that Congress has already pronounced that it is in the public's interest to integrate commercially flown UASs into the national airspace system, hence the passing of the Reform Act. ESRUAS will conduct research into safe UAS operations for every flight of its UASs. Flight data, visual inspections, recorded observations and flight analyses will be compiled to further enhance current safety protocols. Allowing ESRUAS to log more flight time directly relates to its research and its ability to further enhance current safety measures. The public has critical interest in reducing the danger and emission associated with current aerial cinematic capture methods, namely, full size helicopters.

ESRUAS respectfully requests the grant of an exemption allowing it to operate small, lightweight, remote controlled multi-rotor UASs in Class G airspace.

The specific sections of Title 14 of the Code of Federal Regulations, ESRUAS requests exemption from:

14 CFR 21; 14 C.F.R. 45.23(b); 14 CFR 61.113 (a) & (b); 14 C.F.R. 91, et seq.; 14 CFR 407 (a)(1); 14 CFR 409 (a)(2); and, 14 CFR 417 (a) & (b).

Exemption Request Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations from 14 C.F.R. 45.23(b);14 CFR Part 21;14 CFR 61.113 (a) & (b); 91.7 (a);91.9 (b) (2);91.103(b); 91.119; 91.121; 91.203(a) & (b); 91.405 (a); 91.407(a) (1); 91.409 (a) (2); 91.417 (a) & (b).

The Extent of ESRUAS Seeks and the Reason It Seeks Such Relief:

ESRUAS submits this application in accordance with the Reform Act, 112 P.L. 95 §§ 331-334, seeking relief from any currently applicable FARs operating to prevent ESRUAS contemplated commercial photography, research and other flight operations within the national airspace system. The Reform Act in Section 332 provides for such integration of civil unmanned aircraft systems into our national airspace system as it is in the public's interest to do so. ESRUAS lightweight UASs meet the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of ESRUAS lightweight UASs are expressly contemplated by the Reform Act. ESRUAS would like to operate its lightweight UASs prior to the time period by which the Reform Act requires the FAA to promulgate rules governing such craft.

The Reform Act guides the Secretary in determining the types of UASs that may operate safely in our national airspace system. Considerations include:

The weight, size, speed and overall capabilities of the UAS; Whether the UAS will be operated near airports or populated areas; and, Whether the UAS will be operated by line of sight.

112 P.L. 95 § 333 (a). Each of these items militates in favor of an exemption for ESRUAS.

ESRUAS UASs utilizes four counter-rotating propellers for precise control and stability. They each weigh less than 25 pounds, including photography or other equipment. Each of ESRUAS small unmanned aircraft are designed to primarily hover in place and operate at less than a 40 knot maximum speed. They are capable of vertical and horizontal operations but operate only within the line of sight of the remote control pilot. In addition to the remote control pilot, ESRUAS uses a spotter and a technician, such that, at minimum, two ESRUAS personnel govern the safe flight of an ESRUAS aircraft at all times.

Utilizing battery power and not combustible fuels, flights generally last between two and twenty minutes. ESRUAS does not operate its UASs with less than twenty five percent battery capacity. Safety systems in place include a GPS mode that allows ESRUAS UASs to hover in place if communication with the radio control pilot is lost and then slowly descend the aircraft until landing. Further, ESRUAS aircraft are programmed to slowly descend when twenty five percent battery capacity has been reached.

ESRUAS does not operate its UASs near airports and generally does not operate them near populated areas. ESRUAS only operates its UASs in predetermined areas and only in compliance with FAA regulations.

ESRUAS operation of its fleet of small, unmanned aircraft will not "create a hazard to users of the national airspace system or the public." 112 P.L. 95 § 333 (b). Given the small size and weight of ESRUAS UASs, combined with their superior maneuverability and operation in well-controlled areas, ESRUAS's aircraft lay within Congress's contemplated safety zone when it promulgated the Reform Act and the corresponding directive to integrate UASs into the

national airspace system. ESRUAS aircraft do not pose any threat to the general public or national security.

The FAA has the authority to issue the exemption to ESRUAS pursuant to the Federal Aviation Act, 85 P.L. 726 (1958), as amended (the "Act").

Commercial and Public Benefits

Granting ESRUAS exemption request furthers the public interest. First, Congress has already pronounced that it is in the public's interest to integrate commercially flown UASs into the national airspace system, hence the passing of the Reform Act. Second, ESRUAS conducts research into safe UAS operations every time it flies one of its UASs. Flight data, visual inspections, recorded observations and flight analyses are compiled to further enhance current safety protocols. Allowing ESRUAS to log more flight time directly relates to its research and its ability to further enhance current safety measures. Third, the public has an interest in reducing the danger and emission associated with current aerial cinematic capture methods, namely, full size helicopters. ESRUAS's UASs are battery powered and create no emissions. If an ESRUAS UAS crashes there is no fuel to ignite and explode. The impact of ESRUAS"s lightweight UASs is far less than a full size helicopter, despite the statistically noteworthy safety record of full size helicopters used in aerial picture capture. The public's interest is furthered by minimizing ecological and crash impacts by permitting aerial photography capture through ESRUAS's lightweight UASs.

Progression of the arts and sciences has been fundamental to our society since its inclusion in the United States Constitution. Indeed, Congress mandated the integration of UASs into our national airspace system, in part, to achieve progression in this noteworthy, and inevitable, field. Permitting ESRUAS to immediately fly within the United States furthers these objectives. Whether it is the combination of scientific discoveries applicable to societal advancement (including those drawing upon architecture, physics, engineering and cultural inclusiveness) to advancements in publicly usable technologies or advancements in equipment available to law enforcement personnel/first responders that does not cost millions of dollars, granting ESRUAS exemption request substantially furthers the public's interest in ways known and currently unknown.

Reasons Why ESRUAS Exemption Will Not Adversely Affect Safety Or How The Exemption Will Provide a Level of Safety At Least Equal To Existing Rule:

ESRUAS exemption will not adversely affect safety. Quite the contrary, for the reasons stated, supra, permitting ESRUAS to log more flight time in FAA airspace will allow ESRUAS to innovate and implement new and as of yet undiscovered safety protocols. In addition, ESRUAS submits the following representations of its flight standards:

- ESRUAS UASs weigh less than 25 pounds complete with small, high-definition cameras like the GoPro or Canon T3i;
- ESRUAS only operates its UASs below 400 feet;
- ESRUAS UASs only operate for 2-25 minutes per flight;

• ESRUAS lands its UASs before they reach 25% battery power;
• ESRUAS remote control pilots operate ESRUAS UASs by line of sight;
• ESRUAS remote control pilots have video backup and nearest airfield(s) contact information should they somehow lose sight of the UAS;
• ESRUAS staffs each flight with a remote control pilot, technician and spotter with communication systems enabling real time communication between them;
• ESRUAS UASs have GPS flight modes whereby they hover and then slowly land if communication with the remote control pilot is lost or battery power is below 25%;
• ESRUAS actively analyses electronic flight data and other sources of information to constantly update and enhance safety protocols;
• ESRUAS only operates in secured areas that are controlled, are away from airports and highly populated areas;
• ESRUAS only operates during daylight hours;
• ESRUAS conducts extensive pre-flight checks, boundaries and awareness prior to flight, during which safety carries primary importance;
• ESRUAS always obtains all necessary permissions prior to operation; and, ESRUAS has procedures in place to abort flights in the event of safety breaches or potential danger.

ESRUAS provides a level of safety at least equal to existing rules, and in nearly every instance, greater than existing rules. It is important to note that absent the integration of commercial UASs into our national airspace system, helicopters are the primary means of aerial photography. While the safety record of such helicopters is great, it is far safer to operate a battery powered lightweight UAS. First, the potential loss of life is diminished because UASs carry no people on board and ESRUAS only operates them in specific areas away from mass populations. Second, there is no fuel on board a UAS and thus the potential for fire or explosions is greatly diminished. Third, the small size and extreme maneuverability of ESRUAS UASs allow remote control pilots to avoid hazards. Also, ESRUAS UASs noise emissions, compared to today's helicopters, are drastically lower. Lastly, given their small size and weight, even when close enough to capture images, ESRUAS UASs need not be so close to the objects they are focused on. Accordingly, ESRUAS UASs will operate at and above current safety levels.

Summary The FAA May Publish in the Federal Register

Part 21 prescribes the procedural requirements for issuing and changing design approvals, productions approvals, airworthiness certificates, and airworthiness approvals.

14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR § 91.203(2)(b, c, & d) & 91.317(f)(2), (g), (j)(1 & 2). The size, weight, speeds, flight maneuvers and controlled operational area of ESRUAS UASs permits exemption from Part 21 because ESRUAS's UASs meet an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UASs from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense

populations. ESRUAS multi-rotor UASs do not carry passengers nor crewmembers, therefor, are not designed with a cabin or a cockpit. Furthermore, ESRUAS UASs will not be operating in or out of airports and in view of the fact that ESRUAS multi-rotor UASs are electrically powered by small lithium-polymer (LiPo) batteries and emit no known emissions -- fuel regulations for aircraft do not apply. Therefore ESRUAS's UASs meet or exceed each of these elements and elements proposed in Docket No.: FAA-2015-0150; Notice No. 15-01. Part 107.

14 C.F.R. 91.7 (a) prohibits the operation of an aircraft without an airworthiness certificate. No such certificate will be applicable in the form contemplated by the FARs. With proposed Docket No.: FAA-2015-0150; Notice No. 15-1 as no such certificate will be applicable, this Regulation is inapplicable.

14 C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no pilots or passengers, and given the size of the UASs, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a manual at ESRUAS's flight operations center. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.

14 C.F.R. § 91.121 regarding altimeter settings is inapplicable insofar as ESRUAS UASs utilize electronic global positioning systems and internal gyroscopes and altimeters to provide spatial coordination.

14 C.F.R. § 91.203 (a) and (b) provides for the carrying of civil aircraft certifications and registrations. They are inapplicable for the same reasons described above – with recently proposed Docket No.; FAA-2015-0150; Notice No. 15-1. The equivalent level of safety will be achieved by maintaining such quality assurance and registrations reports at the ESRUAS flight operations center.

14 C.F.R. § 45.23: Marking of The Aircraft.

Applicable Codes of Federal Regulation require aircraft to be marked according to certain specifications. ESRUAS UASs are unmanned -- they, therefore, do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is difficult to place on such a small aircraft. Regardless, ESRUAS will mark its UASs in the largest possible lettering by placing identification marks on its frame as required by 14 C.F.R. § 45.29 (f) so that the pilot, technician, spotter and others working with the UAV will be identifiable and will see the markings. The FAA has previously issued exemptions to this regulation through Exemptions Nos. 8738, 10167, 10167A and 10700.

14 C.F.R. § 61.113: Private Pilot Privileges and Limitations: PIC.

Pursuant to 14 C.F.R. §§ 61.113 (a) & (b), private pilots are limited to non-commercial operations. ESRUAS can achieve an equivalent or superior level of safety as achieved by current Regulations because ESRUAS UASs do not carry any pilots or passengers – the operators will maintain visual line of site of UA and given the size, weight, speed, maneuverability and

operating parameters of ESRUAS UAS's risk to people and property is reduced. Further, while helpful, a pilot license will not ensure remote control piloting skills, though ESRUAS pilot vetting and training programs will. Further, private pilot licensees require 60-70 hours of flight time – with hundreds of hours of computer simulation and remote control aircraft [50+ hours of multi-rotor UAS] experience the person in control of the UA will operate ESRUAS UASs with the same or more skill. Further, the risks attendant to the operation of ESRUAS UASs is far less than the risk levels inherent in the commercial activities outlined in 14 C.F.R. § 61, et seq – ESRUAS maintains visual of UA via a spotter, altitude of UA will never exceed 400ft AGL. Thus, allowing ESRUAS to operate its multi-rotor UASs with it's current experience and standards meets the minimum safety requirements of 14 C.F.R. §61.113 (a) & (b).

14 C.F.R. 91.119: Minimum Safe Altitudes.

14 C.F.R. § 91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. As proposed in Docket No.: FAA-2015-0150; Notice No. 15-01, ESRUAS UASs never operates at an altitude greater than 400 AGL. ESRUAS will, however, operate its UASs at a much lower altitude than proposed in Docket No.: FAA-2015-0150; Notice No. 15-01, a level of safety exceeding those in relation to minimum safe altitudes. Given the size, weight, maneuverability and speed of ESRUAS UASs, an equivalent level of safety will be achieved.

14 C.F.R. 91.405 (a); 407 (a) (1); 409 (a) (2); 417(a) & (b): Maintenance Inspections.

The above-cited Regulations require, amongst other things, aircraft owners and operators to "have [the] 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." These Regulations only apply to aircraft with an airworthiness certificate. They will not, therefore, apply to ESRUAS should its requested exemption be granted. ESRUAS conducts an extensive maintenance program that involves regular software updates and constant mechanical inspection for assessment of any damaged hardware. Therefore, an equivalent or greater level of safety will be achieved. ESRUAS has researched its designs.

Summary

ESRUAS seeks an exemption from the following Regulations: 14 C.F.R. 21, subpart H; 14 C.F.R. 45.23(b); 14 C.F.R. §§ 61.113 (a) & (b); 14 C.F.R. § 91.7 (a) & (b); 14 C.F.R. § 91.9 (b)(2); 14 C.F.R. § 91.119; 14 C.F.R. § 91.121; 14 C.F.R. §§ 91.203(a) and (b); 14 C.F.R. § 91.405 (a); 14 C.F.R. § 91.407 (a)(1); 14 C.F.R. § 91.409 (a)(2); and, 14 C.F.R. §§ 91.417 (a) & (b) to commercially operate small lightweight unmanned aerial vehicles in aerial photography and research operations, to conduct its own fieldwork and to assist in the development of platforms for photographers, first responders, law enforcement, and search & rescue.

Granting ESRUAS's request for exemption will enhance safety protocols thereby reducing risk of incident. Aerial photography relies primarily on the use of larger aircraft, housing a crew and running on combustible fuel. ESRUAS aircraft do not house a crew of pilots nor do they contain combustible

fuel -- they are smaller, lighter and more maneuverable than conventional aircraft. Additionally, ESRUAS aircraft operate at lower altitudes and will not interfere with conventional aircraft. ESRUAS has been analyzing flight data, flight film and other information to compile above-standard safety protocols and the implementation of flight operations that exceeds current procedures of safe flight.

There are no people on board ESRUAS aircraft therefore the likelihood of death or serious bodily injury is significantly limited. ESRUAS will ensure positive growth of it's safety and flight protocols with multi-rotors ESRUAS operation of its UASs, weighting less than 25 pounds and traveling at speeds lower than 40 knots in exclusive areas will provide at least an equivalent level of safety as that achieved under current FARs.

With current knowledge and experience and until operator certifications become clearer ESRUAS respectfully requests that the FAA grant its exemption request without delay. The FAA has the authority to issue the exemption sought by ESRUAS pursuant to the Federal Aviation Act, 85 P.L. 726 (1958), as amended (the "Act").

Respectfully,

Brett E. Lisa, CEO
ESRUAS, LLC.
1889 Oak Park Drive N.
Clearwater, FL. 33764