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

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

July 28, 2015

Exemption No. 12192
Regulatory Docket No. FAA–2015–1793

Mr. Martin Lachance
696 Mendon Ionia Road
Honeoye Falls, NY 14472

Dear Mr. Lachance:

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

By letter dated May 7, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography, videography, and cinematography.

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 DJI Flamewheel F550 and 3D Robotics Iris.

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

Conditions and Limitations

In this grant of exemption, Mr. Martin Lachance is hereafter referred to as the operator.

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

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

1. Operations authorized by this grant of exemption are limited to the DJI Flamewheel F550 and 3D Robotics Iris 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 July 31, 2017, unless sooner superseded or rescinded.

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

Enclosures

May 7, 2015

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

Re: Exemption Request Section 333 of the FAA Reform Act of the Federal Aviation Regulations From 14 C.F.R. 45.23(b) Part 21; 14 C.F.R. 61.113(a)&(b); 91.7(a); 91.9(b) (2); 91.103(b); 91.109; 91.119; 91.121; 91.151(a); 91.203(a)&(b); 91.405(a); 91.407(a) (1); 91.409(a) (2); 91.417(a)&(b)

Dear Sir or Madam,

I, Martin Lachance, am writing pursuant to the FAA Modernization and Reform Act of 2012 and the procedures contained within 14 C.F.R. 11, to request that I, Martin Lachance, an owner and operator of small-unmanned aircraft, be exempted from the Federal Aviation Regulation ("FARs") listed below so that I, Martin Lachance, may operate my small unmanned aircraft system ("sUAS") commercially in airspace regulated by the Federal Aviation Administration ("FAA").

As described herein, I, Martin Lachance, am a photographer/videographer/cinematographer; experienced in flying hobby aircraft for recreational purposes. I have added a quad-copter[1] and hex-copter[2] to my inventory equipped with a self-contained camera with intent for aerial photography/videography/ cinematography; following exemption and approval by the FAA.

I have flown small RC electric multi-rotor aircraft models for over five (5) years without incident. In addition, I have held a PPL (private pilot license) single engine land and sea for fifteen (15) years, have a current FCC operator's license, and a member of Academy of Model Aeronautics (AMA). I hold a current KROC airport ramp access badge, which required vetting by TSA.

I am committed to safety with each flight. My, Martin Lachances', exemption request would permit operation of ultra-light weight, unmanned (piloted by remote control) and comparatively inexpensive sUAS in tightly controlled and limited airspace. Predetermined in areas away from general public, airports, heliports, and vehicular traffic for community videos, and within property boundaries for aerial videography/cinematography to enhance academic community awareness for individuals and companies unfamiliar with the geographical layout of the metro Rochester and surrounding areas; augmentation of real estate listing videos; and the creation of visual and topography layout videos for Search and Rescue (SAR) missions for state and local agency's, education, agricultural, and building and construction zone inspections.

Granting my, Martin Lachance' request, comports with the Secretary of Transpiration's (FAA Administrator's) responsibilities and authority to not only integrate sUASs into the nation airspace system, but to "establish requirements for the safe operation of such aircraft systems (sUASs) in the national airspace system" under Section 333 (c) of the Reform Act specific to the use of sUASs for photography and videography purposes. I, Martin Lachance, have personally installed safety protocols and controls to avoid and prevent public hazard, as well as any catastrophic manned aircraft hazard. Furthermore, it is my intent to assist future FAA safety protocols and regulations exclusive to lightweight UAS's for specific video and photography usage by sharing information with the FAA as I, Martin Lachance, record flight data and other pertinent information gained through permitted flight operations.

For the reason stated below, I Martin Lachance, respectfully request the grant of an exemption allowing me to operate ultra lightweight, remote controlled, sUAS's to aid academic community awareness, to benefit/stimulate attraction to the Rochester metro area and to enhance personal and public video feeds. A grant that will ultimately allow sUAS's to play a more positive role in our local community by increasing employment opportunities, heightening security measures and decreasing government expenditures by reducing the need for heavier manned aircraft, containing highly, combustible fuel, which is a potential

[1] Appendix A - 3D Robotics Manual
[2] Appendix B – DJI F550 Manual

public hazard in and of itself.

I Contact Information

Martin Lachance
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Honeoye Falls, New York 14472
Mobile – (585) 698-8652
Email – mrlbristol@gmail.com

II. The Specific Sections of Title 14 of the Code of Federal Regulations from which Martin Lachance Requests Exemption are:

14 CRE 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)

III. The Extent of Relief Martin Lachance Seeks and the Reason he Seeks Such Relief:

I, Martin Lachance, submit this application in accordance with the Reform Act, 112 P.L. 95§§ 331-334, Seeking relief from any currently applicable FARs operating to prevent me, Martin Lachance, contemplated commercial cinematic, academic 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. My, Martin Lachance', sUAS meets the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of my ultra-lightweight sUASs is expressly contemplated by the Reform Act. I would like to operate my sUASs prior to the time period by which the Reform Act requires the FAA to promulgate rules governing such craft. Thereby, providing direct experience and valuable information for formal regulation that can be administered uniformly to all related sUAS aerial photography and videography. The Reform Act guides the Secretary in determining the types of sUASs that may operate safely in our national airspace system. Considerations include: The weight, size, speed, and overall capabilities of the sUASs; whether the sUAS will be operated near airports or heavily populated areas; and whether the sUAS will be operated by VLOS (visual line of sight).. 112 P.L 95 § 333 (a).

Each of these items reflects in favor of an exemption for me, Martin Lachance. My sUAS's utilize four (4) or six (6) rotating propellers for sustained flight. Accelerometers and gyros for balance, control, and stability. My sUAS's are equipped with the following via video and data telemetry:

. Altimeter, AGL
. Attitude Indicator
. Auto Landing Technology
. Auto Safety or RTL (Return To Launch)
. Course Deviation Indicator
. Direction "Home"
. Fuel Consumption and Fuel Remaining with Approximate Time
. Heading Indicator
. GPS Location
. Ground Speed Indicator
. Magnetic Compass
. Loiter and Circle Mode
. Radio Magnetic Indicator
. RSSI (Received Signal Strength Indicator)
. UA Distance From "Home"
. Vertical Speed Indicator

Each sUAS weighing less than six (6) pounds, which is far below the maximum 55 pound limit; including Camera(s) with or without gimbal (a camera stabilizer).

I, Martin Lachance, consider safety as foremost with each flight. My small sUASs are designed to hover in place, circle in a specific place or loiter via GPS and can be operated in winds up to 17 knots (20 mph). For safety, stability, and fear of financial loss I will not fly in winds exceeding 13 knots (15 mph). Built-in safety systems include a GPS mode that allows my UAS to hover/circle in place or land when radio controls are released. With six (6) modes to choose from, I will fly with the modes safest to complete the videos for aerial videography/photography and have the ability to choose the safest, most reliable and stable mode to prevent accident and hazard. If pilot communication, the "Link" is lost, UAS is designed to slowly descend to point of takeoff or land at point of launch. With an onboard flight controller – 3D Robotics Pixhawk and DJI Naza M V2 flight controllers, it has the capabilities of geofencing, which will prevent the craft from exceeding a set altitude or distance. No matter what causes the craft to breach those boundaries – the craft is forced back within boundary limits via the onboard controller and will take over the craft to keep it within those boundaries.

I, Martin Lachance, will not operate my UAS near airports, hospitals, or police heliports, and do not operate near areas where general public is within fifty to one hundred (50-100) yards, depending on location, conditions, and weather. I am constantly on alert for any manned aircraft (police/medical helicopters, etc.) and prepared to land/abort immediately to the nearest and safest ground point should a manned aircraft approach my location or I suspect manned aircraft may approach near my location. My UAS's are capable of vertical and horizontal operations, and is flown only within my line of sight, VLOS, as the remote control pilot. Utilizing battery power rather than combustible fuels, flights generally last between five (5) to fifteen (15) minutes, with an altitude under three hundred (300) feet. Six (6) Smart Mode includes safe circle for operation, position hold, self-leveling, altitude command, GPS, return home feature, and safety control to return home or land in the event of communication interruption between RC transmitter and sUAS.

I, Martin Lachance, utilize a fully charged battery with each flight as a safety precaution; full flight time limit for each battery is eight (8) to twenty (20) minutes as tested. I do not operate my UAS at or below manufacturer recommended minimum charge levels for operation; preferring to remain well within a safe operating range to insure adequate communication between radio control and UAS to eliminate potential auto activation of "Return Home", loss of control, or hazard. Reserve batteries are at hand with each exercise to insure replacement for sufficient safe level of operation. I do not believe in taking risks that may create a hazard to the public/property/manned aircraft, and have no desire to lose an investment. I have clocked numerous practice flights in remote areas as a hobbyist, simulating flights for future commercial use to gain familiarization with the characteristics of this specific UAS's performance under different temperature and weather conditions. I also practice computerized simulated flights to maintain adequate skills and response reflex time. All for the sake of safety. I, Martin Lachance, am extremely cautious when operating my sUAS and 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 my sUAS it falls well within Congress's contemplated safety zone when it promulgated the Reform Act and the corresponding directive to integrate UAS's into the nation airspace system. I, Martin Lachance's sUAS, used in hobby flight, has a demonstrable safety record and does not pose any threat to the general public or national security.

IV How Martin Lachance's Request Will Benefit the Public As A Whole

Aerial videography for geographical awareness, education, search and rescue, land management, structure inspections and for real estate marketing, historically, has been achieved by manned fixed wing aircraft and helicopters. For small budget companies, average homeowners and property owners, the expense of such aerial videography is cost prohibitive. Only large companies and upscale realtors or luxury homeowners can afford to absorb such expense. SARs (Search and Rescue) is often a time-critical event. We may find a reduction in the logistics time required, to deploy a sUAS, than conventional aircraft, to fly the mission.

Manned aircrafts pose a threat to the public through potential catastrophic crash with combustible fuels. My, Martin Lachance's sUAS, poses no such threat since size and lack of combustible fuel alleviates any potential threat to the public. Congress has already proclaimed that it is in the public's interest to integrate commercially flown UAS's into the national airspace system, hence the passing of the Reform Act. Granting my, Martin Lachance's, exemption request furthers the public interest through academic/visual awareness of the geographical benefits in and around the Rochester metro area. My sUAS is battery powered and creates

no emissions that can harm the environment. The consequence of my sUAS crashing is far less than a full size helicopter or fixed wing aircraft, which are heavy, contain combustible fuel and can cause catastrophic devastation to the public. The public's interest is furthered by minimizing ecological and crash threat by permitting aerial video/photo capture through my battery operated sUAS's. Permitting me, Martin Lachance, to immediately fly within national air space furthers economic growth. Granting my exemption request substantially furthers the economic impact for the Rochester metro and surrounding community for companies looking to build around the Rochester metro area as well as individuals looking to relocate for career advancement through academic and geographical awareness. Both of which serve as a stimulus to the community.

V. Reasons Why Martin Lachance's Exemption Will Not Adversely Affect Safety and How the Exemption Will Provide a Level of Safety at Least Equal to Existing Rule:

My, Martin Lachance's exemption will not adversely affect safety. Quite the contrary, for the reasons stated permitting me, Martin Lachance, to log more flight time in FAA controlled airspace, with communication with the FAA, will allow me to contribute to the innovation and implementation of new and novel, as of yet undiscovered safety protocols, for realtors, land and structure owners and for the development in cooperation with the FAA. In addition, I, Martin Lachance, submit the following representation of enhancements to current aerial videography and photography:

. My sUAS weighs less than 6 pounds complete with a small camera;
. I only operate my sUAS below 300 feet (within the 400 feet permissible ceiling set by the FAA Modernization and Reform Act of 2012);
. My sUAS only operates for five (5) to fifteen (15) minutes per flight;
. I land my sUAS prior to manufacturer recommended minimum level of battery power;
. I pilot my sUAS through remote control only by VLOS (Visual Line of Sight);
. My sUAS has a flight safety feature whereby in the event of "lost communication" with the sUAS, it returns to "Launch Point" which, in effect, brings the sUAS closer to pilot/RC controller, where the "Link" can be re-established. If "Link" is not re-established", sUAS "Auto Lands".
. I actively analyze flight data and other sources of information to constantly update and enhance safety protocols;
. I only operate in reasonably safe environment that are strictly controlled, are away from power lines, elevated lights, airport, and actively populated areas;
. I conduct extensive pre-flight inspections and protocol, during which safety carries primary importance;
. I always obtain all necessary permissions prior to operation; and,
. I have procedures in place to abort flights in the event of safety breaches or potential danger.

My, Martin Lachance', safety protocols provide a level of safety equal to or exceeding existing rules. It is important to note that absent the integration of commercial sUAS into our national airspace system, helicopters and fixed wing aircrafts are the primary means of aerial photography and videography. While the safety record of such aircrafts is remarkably astounding, there has been incidents involving loss of life as well as extensive property damage; it is far safer to operate a battery powered ultra-lightweight sUAS.

. First, the potential loss of life is diminished because sUASs carry no people on board and I only operate my sUAS in specific areas away from mass populations;
. Second, there is no fuel on board a sUAS and thus the potential for fire or explosions is greatly reduced;
. Third, the small size and extreme maneuverability of my sUAS allows me to remotely pilot away from and avoid hazards quickly and safely.

Accordingly, my sUAS has been experimentally operated for familiarization/competency and will continue to operate at and above current safety levels.

VI A Summary: The FAA May Publish in the Federal Register:

A. 14 C.F.R. 21 and C.F.R. 91: Airworthiness Certificates, Manual and the Like.

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(a)(1). The size, weight and enclosed operation area of my, Martin Lachance', sUAS permits exemption from Part 21 because my sUAS meets (and exceeds) 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 sUASs from the Airworthiness Certificate requirement in consideration of the weight, size, speed, maneuverability, and proximity to areas such as airports and dense populations. My, Martin Lachance', current and projected sUASs meets or exceeds each of the elements.

14 C.F.R. 91.7 (a) prohibits the operation of an aircraft without an Airworthiness Certificate. As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable.

14 C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no on-board pilots or passengers, and given the size of the sUASs, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a safety flight manual delineating areas of where safety can be defined. The FAA has previously issued exemptions to this Regulation in Exemption Nos. 8607, 8738, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700, 32827, 11371, and 11381.

14 C.F.R. § 91. 121 regarding altimeter settings are inapplicable insofar as my sUAS utilized electronic global positioning systems with a barometric sensor or controlled GPS "(geofencing)".

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. The equivalent level of safety will be achieved by maintaining any such required certifications and registrations by me, Martin Lachance.

B. 14 C.F.R. § 45.23: Marking of the Aircraft.

Applicable Codes of Federal Regulation require aircraft to be marked according to certain specifications. My sUAS are, by definition, 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 with dimensions smaller than minimal lettering requirement. Regardless, I will mark the sUASs in the largest possible lettering by placing the word "EXPERIMENTAL" on its fuselage, as required by 14 C.F.R. § 45.29 (f) so that I the pilot, or anyone assisting me as a spotter with the sUAS will see the markings. The FAA has previously issued exemptions to this regulation through Exemptions Nos. 8738, 10167, 10167, 10167A and 10700.

C. 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. I, Martin Lachance, can achieve an equivalent level of safety as achieved by current Regulations because my sAUS does not carry any pilots or passengers. Further, while helpful, a pilot license will not ensure remote control piloting skills. The risks attended to the operation of my sUAS is far less than the risk levels inherent in the commercial activities outlined in 14 C.F.R. § 61, et seq.. Thus, allowing me, Martin Lachance, to operate my sUAS and meet and exceed current safety levels in relation to 14 C.F.R. § 61.113 (a) & (b).

D. 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. My UAS will never operate at an altitude greater than 300 AGL. I, Martin Lachance, will however operate my sUAS in safe areas away from public and traffic, providing a level of safety at least equivalent to or below those in relation to minimum safe altitudes. Given the size, weight, maneuverability and speed of my sUAS, an equivalent or higher level of safety will be achieved.

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

The above-cited Regulations require 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 my, Martin Lachance', sUAS. However, as a safety precaution, I inspect my sUAS before and after each flight.

A Summary The FAA May Publish in the Federal Register: A. 14 C.F.R. 21 and 14 C.F.R. 91: Airworthiness Certificates, Manuals and the Like

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 (a) (1). The size, weight, and enclosed operational area of my UAS permits exemption from Part 21 because my, Martin Lanchance's, sUAS meets 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 UAS's from the Airworthiness Certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. My sUAS meets or exceeds each of the elements. 14 C.F.R. 91.7 (a) prohibits the operation of an aircraft without an Airworthiness Certificate. As no such certificate will be applicable in the form contemplated by the FARs, 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 UAS's, this regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a manual. The FAA has previously issued exemptions to this Regulation in Exemption Nos 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, maintenance program that involves regular software updates and curative measures for any damaged hardware. Therefore, an equivalent level of safety will be achieved.

In summary, Martin Lachance, 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); 14 C.F.R. §91.9 (b) (2); 14 C.F.R. § 91.103 (b); 14 C.F.R. § 91.109; 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 my, Martin Lachance's, small-unmanned vehicle/lightweight unmanned aircraft vehicle in community awareness, education, structural inspection, land management, search and rescue, real estate operations, and to develop economic platforms for the aforementioned to enhance the experience of those seeking to find, relocate, repair, rebuild, and evaluate in the metro Rochester area.

Currently, the aforementioned aerial videography/photography relies primarily on the use of larger aircraft operating on combustible fuel, which poses potential risk to the public. Granting my, Martin Lanchance's, request for exemption will reduce current risk levels and thereby enhance safety. My sUASs do not contain potentially explosive fuel, is smaller, lighter, and more maneuverable than conventional video and photographic aircrafts.

Further, I operate at lower altitudes and in controlled airspace eliminating potential public risk flying to and from established airfields. I, Martin Lachance, have been informally analyzing and recording flight information and will compile safety protocols and the implementation of a flight operation manual for usage that exceeds currently accepted means and methods for safe flight. Formal collection of information shared with the FAA will enhance the FAA's internal efforts to establish protocols for complying with the FAA Modernization and Reform Act of 2012. There are no personnel on board my, Martin Lachance's sUAS, and therefore the likelihood of death or serious bodily injury is significantly diminished. My, Martin Lachance, operation of my sUAS, weighing less than six (6) pounds and traveling at lower speeds within limited areas will provide an equivalent level of safety as that achieved under current FARs. Accordingly, I Martin Lachance, respectfully request that the FAA grant my exemption request and am willing to cooperate in sharing information to benefit the FAA, safety of manned aircraft, and the general public at large.

Respectfully Submitted,

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