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

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

September 17, 2015

Exemption No. 12898
Regulatory Docket No. FAA−2015−2661

Mr. Christopher Ison
The Ison Law Group
Counsel for Image in Flight
2073 US Highway 92 West, Suite 104
Winter Haven, FL 33881

Dear Mr. Ison:

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 3, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Image in Flight (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography, videography, and mapping.

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 Phantom 2 Vision+ and DJI Inspire 1.

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

The Basis for Our Decision

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

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

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

Our Decision

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

[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.

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, Image in Flight 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 Vision+ and 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 September 30, 2017, unless sooner superseded or rescinded.

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

Enclosures

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June 3, 2015

U.S. Department of Transportation
Docket Operations
West Building Ground Floor, Room w12-140
1200 New Jersey Ave., SE
Washington, DC 20590

RE: Petition for Section 333 Exemption Under FAA Modernization and Reform Act of 2012

Petitioner	:	Image In Flight
Petitioner's UAS(s) Models	:	DJI Phantom 2 Vision+; DJI Inspire 1
Petitioner's UAS(s) Operations	:	Aerial Photography; Aerial Videography; Aerial Mapping Services
Regulations Requiring Exemption	:	14 CFR §§ 61.23(a) and (c); 14 C.F.R. §§ 61.101(e)(4) and (5) 14 C.F.R. § 61.113(a); 14 C.F.R. §61.315(a) 14 C.F.R. § 91.7(a); 14 C.F.R. § 91.119(c) 14 C.F.R. §91.121; 14 C.F.R. §91.151(a)(1) 14 C.F.R. §91.405(a); 14 C.F.R. §91.407(a)(1) 14 C.F.R. §§ 91.409(a)(1) and (2); and 14 C.F.R. 91.417(a) and (b)

To whom it may concern,

On behalf of Image In Flight (IIF), a Rancho Cordova, California, company specializing in aerial photography, aerial videography, and aerial mapping services through the use of Small Unmanned Aircraft Systems (sUAS), the undersigned counsel for IIF hereby applies for Section 333 exemption pursuant to the FAA Modernization and Reform Act of 2012, Public Law 112-95 (P.L. 112-95), and 14 C.F.R. Part 11.

The owner and operator of IIF, Thomas Michael Bartlett, holds a commercial pilot, rotorcraft-helicopter rating, with over 185 flight hours in rotorcraft-helicopters. Consequently, Mr. Bartlett understands the importance of safe flight operations and is acutely aware of the importance of complying with all Federal Aviation Regulations (F.A.R.s). As such, IIF, through the careful oversight and tutelage of Mr. Bartlett, will conduct all sUAS flight operations in the safest possible manner. To that end, IIF will comply with any flight operation or atmospheric condition limitations imposed upon the commercial operation of IIF's sUAS models.

The following petition outlines IIF's sUAS models – DJI Phantom 2 Vision+ and DJI Inspire 1 – for which IIF seeks exemption, IIF's sUAS flight operations and conditions, privacy concerns, public interest and safety concerns, and the above specified F.A.R.s requiring exemption. Under Section 333(b)(1), IIF's petition will give the FAA good cause to issue a Certificate Of Waiver or Authorization (COA) by showing that the size, weight, speed, operational capacity, proximity to airports and populated areas, and operations within the Visual Line of Sight of the Pilot in Command and Visual Observer of IIF's sUAS models do not create a hazard to users of the National Airspace System (NAS) or public or pose a threat to national security.

IIF's petition will prove that IIF's flight operations and conditions for commercial usage of the DJI Phantom 2 Vision+ and DJI Inspire 1 for aerial photography, videography and mapping services provides an equivalent level of safety when compared to the F.A.R.s requiring exemption. To that end, the FAA has already granted Section 333 exemption to other commercial UAS operators with similar UAS make and models for similar commercial flight operations in Exemption Numbers 11699, 11693, 11062, 11109, 11112, 11213, and 11656.

Please refer to the Table of Contents beginning on page three (3) to assist your review of IIF's petition for Section 333 exemption. If we may provide additional insight or information regarding IIF's petition, please do not hesitate to contact The Ison Law Group at 863-712-9475 or Christopher@thepilotlawyer.com.

Sincerely,

THE ISON LAW GROUP

Christopher Ison, Esq.

Enclosures

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EXHIBIT LIST

GLOSSARY OF TERMS

Aircraft: any contrivance invented, used, or designed to navigate, or fly in, the air (Title 49, United States Code (49 USC) § 40102).

National Airspace System (NAS): the common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures, technical information, and manpower and material.

Operational Control: with respect to a flight, means the exercise of authority over initiating, conducting or terminating a flight (14 CFR § 1.1).

Pilot in Command (PIC): the person who has final authority and responsibility for the operation and safety of the flight; has been designated as PIC before or during the flight; and holds the appropriate category class and type-rating, if appropriate, for the conduct of the flight (14 CFR § 1.1).

Small Unmanned Aircraft System (sUAS): an unmanned aircraft and associated elements, including communication links and the components that control the unmanned aircraft, that are required for the pilot in command to operate safely and efficiently in the national airspace system (P.L. 112-95, Section 331), weighing less than 55 pounds, including payload.

UAS Certificate of Waiver or Authorization (COA): an authorization issued by the Air Traffic Organization to an operator for a specific unmanned aircraft activity.

Visual Line of Sight (VLOS): unaided (corrective lenses and/or sunglasses excepted) visual contact between a pilot in command and an unmanned aircraft sufficient to maintain safe operational control of the aircraft, know its location, and be able to scan the airspace in which it is operating to see and avoid other air traffic or objects aloft or on the ground.

PUBLISHABLE SUMMARY

Pursuant to 14 C.F.R §11.81(f), should the FAA require a publishable summary for the *Federal Register*, Image In Flight (IIF) submits the following information regarding the rules from which IIF seeks exemption and a brief description of the nature of the exemptions sought.

IIF seeks exemption from the following Federal Aviation Regulations (F.A.R.s):

> 14 CFR §§ 61.23(a) and (c); 14 C.F.R. §§ 61.101(e)(4) and (5); 14 C.F.R. § 61.113(a); 14 C.F.R. §61.315(a); 14 C.F.R. § 91.7(a); 14 C.F.R. § 91.119(c); 14 C.F.R. §91.121; 14 C.F.R. §91.151(a)(1); 14 C.F.R. §91.405(a); 14 C.F.R. §91.407(a)(1); 14 C.F.R. §§ 91.409(a)(1) and (2); and 14 C.F.R. 91.417(a) and (b).

IIF seeks exemption from the above listed F.A.R.s for the purpose of commercially operating Small Unmanned Aircraft Systems (sUAS), to wit: DJI Phantom 2 Vision+ and DJI Inspire 1. IIF will commercially operate these sUAS models to conduct aerial photography, aerial videography, and aerial mapping services for website and social media outlets within the United States of America. IIF seeks exemptions equivalent to exemptions that the FAA has already granted to other commercial UAS operators with similar UAS make and models for similar commercial flight operations in Exemption Numbers 11699, 11693, 11062, 11109, 11112, 11213, and 11656. Under Section 333(b)(1) of the FAA Modernization and Reform Act of 2012, IIF's petition will give the FAA good cause to issue a Certificate Of Authorization by showing that the size, weight, speed, operational capacity, proximity to airports and populated areas, and operations within the Visual Line of Sight of the Pilot in Command and Visual Observer of IIF's sUAS models do not create a hazard to users of the National Airspace System (NAS) or public or pose a threat to national security. To that end, IIF seeks exemption from the specified F.A.R.s as IIF's flight operations and conditions provide an equivalent level of safety when compared to the F.A.R.s to be exempted. IIF will adhere to any flight operation or atmospheric condition limitation imposed by the FAA.

PETITIONER'S CONTACT INFORMATION

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Counsel for Petitioner

IMAGE IN FLIGHT OPERATIONS

sUAS Models and Specifications

IIF's requested exemption from the above specified F.A.R.s will allow for IIF's use of the DJI Phantom 2 Vision+ and DJI Inspire 1 for commercial operations pertaining to aerial photography, aerial videography, and aerial mapping services within the United States of America. These sUAS models are either similar to, or the same as, sUAS models that the FAA has already granted exemption for similar commercial flight operations in Exemption Numbers 11699, 11693, 11062, 11109, 11112, 11213, and 11656.

The DJI Phantom 2 Vision+ and DJI Inspire 1 are quad-copter sUAS models, capable of providing hover flight in both the vertical and horizontal planes. As such, both sUAS models provide excellent maneuverability and ease of control for the PIC. The ease with which a PIC can control these sUAS models is evidenced by the fact that both sUAS models are commercially available for RC hobbyists, requiring no training or experience prior to flight.

Both the DJI Phantom 2 Vision+ and DJI Inspire 1 additionally provide excellent situational awareness for the PIC. Both sUAS models allow the PIC to determine the exact altitude of the sUAS via GPS technology and monitoring. In addition, both sUAS models provide the PIC with the ability to monitor the available remaining battery life, allowing the PIC to make informed, safe decisions regarding the duration and continuation of a particular flight.

IIF's primary objective with each commercial flight is the safe return of the sUAS without injury to property or person. Both the DJI Phantom 2 Vision+ and DJI Inspire 1 incorporate unique operating modes that provide for the safe return of the sUAS should the PIC experience a loss of signal connectivity between the sUAS model's transmitter and receiver. The DJI Inspire 1 incorporates three safe modes in such a situation: Failsafe, Return to Home, and Dynamic Home Point. Likewise, the DJI Phantom 2 Vision+ incorporates a failsafe function should the sUAS experience loss of signal connectivity. Both models will guide the sUAS back to a predetermined, safe landing zone should the model experience issues. Please see the User Manuals for both the DJI Phantom 2 Vision+ and DJI Inspire 1 for more information regarding these safe modes.

Given the nature of these particular sUAS models, IIF's requested exemption from various F.A.R.s will neither adversely affect the public's safety nor create a hazard to users of the National Airspace System (NAS) or pose a threat to national security. Moreover, IIF's use of these sUAS models for aerial photography, aerial videography, and aerial mapping services, will replace the need for fixed winged or rotorcraft aircraft with regards to these services.

By replacing fixed winged or rotorcraft aircraft with sUAS models, the public will benefit in several ways. For example, the use of these sUAS models provides significant reductions in the risk of injury to property or person should the sUAS require an emergency landing. Both the DJI Phantom 2 Vision+ and DJI Inspire 1 are lightweight, powered by batteries, and carry no passengers. By comparison, fixed winged or rotorcraft aircraft, which weigh thousands of pounds, carry flammable fuels, and passengers, have been known to cause serious injury or death to passengers and bystanders during emergency landings. The use of these particular sUAS models

for aerial photography, aerial videography, and aerial mapping services will substantially benefit the public from a safety standpoint.

Below are the specifications of each sUAS model.

DJI Phantom 2 Vision+

Aircraft Specifications:

Supported Battery:	DJI 5200mAh Li-Po Battery
Weight (Battery & Propellers included):	1242 grams
Recommended Payload:	≤1300 grams
Maximum Payload:	1350 grams
Hovering Accuracy (Ready to Fly):	Vertical: 0.8m; Horizontal: 2.5m
Max Yaw Angular Velocity:	200°/second
Max Tiltable Angle:	35°
Max Ascent/Descent Speed:	Ascent: 6 m/s; Descent: 2 m/s
Max Flight Speed:	15 m/s
Motor Diagonal Length	350 mm

3-axial Stabilized Gimbal Specifications:

Working Current:	Static: 750mA; Dynamic: 900mA
Control Accuracy:	±0.03°
Controllable Range:	Pitch: -90° - 0°
Maximum Angular Speed:	Pitch: 90°/second

Camera

Operating Environment Temperature:	0°C - 40°C
Sensor Size:	1/2.3”
Effective Pixels:	14 Megapixels
Resolution:	4384x3288
HD Recording:	1080p30/1080i60
Recording FOV:	110°/85°

Remote Controller

Operating Frequency:	5.728 GHz – 5.85 GHz
Communication Distance (open area):	CE Compliance: 400m; FCC Compliance: 800m
Receiver Sensitivity (1%PER):	-93dBm
Transmitting Power (EIRP):	CE Compliance: 25mW; FCC Compliance: 100mW
Working Current/Voltage:	120mA@3.7V
Battery:	2000mAh rechargeable LiPo battery

Range Extender

Operating Frequency:	2412MHz-2462MHz
Communication Distance (open area):	500m-700m
Transmitting Power:	20dBm
Power Consumption:	2W

For further information regarding the DJI Phantom 2 Vision+, please refer to the attached exhibits.

DJI Inspire 1

Aircraft

Weight (Battery Included):	2935 grams
Hovering Accuracy (P Mode):	Vertical: 0.5m; Horizontal: 2.5m
Max Angular Velocity:	Pitch: 300°/s; Yaw: 150°/s
Max Tilt Angle:	35°
Max Ascent Speed:	5 m/s
Max Descent Speed:	4 m/s
Max Speed:	22 m/s (ATTI mode, no wind)
Max Flight Altitude:	4500 m
Max Wind Speed Resistance:	10 m/s
Max Flight Time:	Approximately 18 minutes
Motor Model:	DJI 3510
Propeller Model:	DJI 1345
Indoor Hovering:	Enabled by default
Operating Temperature Range:	-10° C to 40°C
Diagonal Distance:	559 to 581 mm
Dimensions:	438x451x301mm

Gimbal

Model:	ZENMUSE X3
Output Power (with Camera):	Static: 9W; In Motion: 11W
Operating Current:	Station: 750mA; Motion: 900mA
Angular Vibration Range:	±0.03°
Mounting:	Detachable
Controllable Range:	Pitch: -90° to +30°; Pan: ±320°
Mechanical Range:	Pitch: -125° to +45°; Pan: ±330°
Max Controllable Speed:	Pitch: 120°/s; Pan: 180°/s

Camera

Name:	X3
Model:	FC350
Total Pixels:	12.76M
Effective Pixels:	12.4M
Image Max Size:	4000x3000
ISO Range:	100-3200 (video) 100-1600 (photo)

Remote Controller

Name:	C1
Operating Frequency:	5.725~5.825GHz; 2.400~2.483GHZ
Transmitting Distance:	2km (Outdoor and Unobstructed)
EIRP:	10dBM@900, 12dBm@5.8G, 20dBm@2.4G
Video Output Port:	USB, Mini-HDMI

Power Supply:	Built-in battery
Charging:	DJI Charger
Dual User Capability:	Host-and Slave connection
Mobile Devise Holder:	Tablet or Smart Phone
Output Power:	9W
Operating Temperature Range:	-10°C to 45°C
Charging Temperature Range:	0-40°C
Battery:	6000 mAh LiPo 2S

Charger

Model:	A11-100P1A
Voltage:	26.3V
Rated Power:	100W

Battery (Standard)

Name:	Intelligent Flight Battery
Model:	TB47
Capacity:	4500mAh
Voltage:	22.2V
Battery Type:	LiPo 6S High voltage battery
Energy:	99.9Wh
Net Weight:	570g
Operating Temperature Range:	-10°C to 40°C
Charging Temperature Range:	0-40°C
Max Charging Power:	180W

For further information regarding the DJI Inspire 1, please refer to the attached exhibits.

Flight Conditions and Operating Procedures

IIF's primary objective with every flight is the safe return of the sUAS model without injury to property or person. In order to obtain this desired objective, IIF will abide by the following operating and atmospheric conditions limitations when performing flight operations with the DJI Phantom 2 Vision+ and DJI Inspire 1 sUAS models:

1. IIF will not operate the above described sUAS models when weighing more than 55 pounds, including payload.

2. IIF will not operate the above described sUAS models at a speed exceeding 87 knots (100 miles per hour). IIF will use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. IIF prohibits operation of the sUAS models at airspeeds greater than the maximum sUAS operating airspeed recommended by the aircraft manufacturer.

3. IIF will not operate the above described sUAS models at an altitude of more than 400 feet above ground level (AGL). IIF will monitor altitude in feet AGL via GPS technology and monitoring.

4. IIF will only operate the above described sUAS models within VLOS of the PIC at all times. IIF will require 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.

5. IIF requires the utilization of a visual observer (VO) on all commercial sUAS flights. The sUAS will be operated within 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. IIF requires that the VO and PIC be able to communicate verbally at all times. IIF does not permit electronic messaging or texting during flight operations. IIF requires the sUAS PIC to be designated before the flight and does not allow transfer his or her designation during the flight. The PIC must ensure that the VO can perform the duties required of the VO.

6. IIF requires that all operating documents (defined as the granted exemption and all documents needed to operate the UAS model and conduct its operations in accordance with all grants conditions and limitations) must be accessible during sUAS operations and made available to the Administrator upon request.

7. IIF will require a functional test should any sUAS model undergo maintenance or alterations that affect that sUAS's 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. IIF requires that all function flights be conducted by a PIC with a VO and remain at least 500 feet from other people. IIF further requires that the functional test flight be conducted in such a manner so as to not pose an undue hazard to persons and property.

8. IIF will be responsible for maintaining and inspecting the above referenced sUAS models to ensure that the sUAS models are in a condition for safe operation.

9. IIF requires that, prior to each flight, the PIC conduct a pre-flight inspection and determine whether the above referenced sUAS models are in a condition for safe flight. IIF requires that the pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. Should the inspection reveal a condition that affects the safe operation of the sUAS, IIF prohibits the aircraft from operating until the necessary maintenance has been performed and the sUAS is found to be in a condition for safe flight.

10. IIF requires compliance with the above referenced sUAS models manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

11. IIF requires compliance with all manufacture safety bulletins for each above referenced sUAS model.

12. IIF requires all sUAS PICs to hold either an airline transport, commercial, private, recreational, or sport pilot certificate. Further, IIF requires the PIC to 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.

13. IIF prohibits any PIC to operate a sUAS unless the PIC demonstrates the ability to safely operate the above referenced sUAS models in a manner consistent with how the sUAS model will be operated under this petition for exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. To that end, IIF requires PIC qualification flight hours and currency to be logged in a manner consistent with 14 CFR § 61.51(b).

14. IIF prohibits flight operations of the above referenced sUAS models during night, as defined in 14 CFR § 1.1. All flight operations will be conducted under visual meteorological conditions (VMC). IIF will not allow the above referenced sUAS models to be flown during special visual flight rules (SVFR).

15. IIF will not operate the above referenced sUAS models 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. IIF will make the letter of agreement with the airport management available to the Administrator or any law enforcement official upon request.

16. IIF will operate the above referenced sUAS models at least 500 feet below and/or no more than 2,000 feet horizontally from a cloud. IIF will not operate the above referenced sUAS models when visibility is less than 3 statute miles.

17. Should the sUAS lose communications or lose its GPS signal, IIF requires the sUAS to return to a pre-determined location within the private or controlled-access property.

18. IIF requires the sUAS PIC to abort the flight in the event of unpredicted obstacles or emergencies.

19. IIF prohibits the sUAS PIC from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the above referenced sUAS models to conduct the intended operation and to operate after that for at least 5 minutes or with the reserve power recommended by the manufacturer if greater.

20. IIF requires that all documents used to ensure safe operation and flight of the above referenced sUAS models and any documents required under 14 CFR §§ 91.9 and 91.203 to be available to the PIC at the Ground Control Station of the sUAS any time the aircraft is operating. IIF will make these documents available to the Administrator or any law enforcement official upon request.

21. IIF requires that during sUAS flights, the sUAS PIC remain clear and give way to all manned aviation operations and activities at all times.

22. IIF prohibits sUAS operation by the PIC from any moving device or vehicle.

23. IIF requires all sUAS flight operations to 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 sUAS and/or debris in the event of an accident. IIF will 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 sUAS, IIF requires flight operations to 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.

24. IIF will operate all sUAS flights over private or controlled-access property with permission from the property owner/controller or authorized representative. IIF will obtain permission from the property owner/controller or authorized representative prior to each flight to be conducted.

PRIVACY

IIF's use of the above referenced sUAS models for aerial photography, aerial videography, and aerial mapping services will not implicate any privacy concerns. Since IIF will only operate the sUAS models at the request of the property and/or business owner(s), IIF will have the express consent and permission of the property and/or business owner(s) prior to flying over private property. The use of these sUAS models for aerial photography, aerial videography, and aerial mapping services poses no greater privacy concerns than the use of traditional fixed winged or rotorcraft aircraft for similar activities. Images taken will be of individuals who have consented to being filmed or otherwise have agreed to be in the area where aerial imagery will take place

PUBLIC INTEREST AND SAFETY

Unlike traditional fixed winged or rotorcraft aircraft, the use of the above referenced sUAS models for aerial photography, aerial videography and aerial mapping services promotes public interest

and safety. Whereas traditional fixed winged or rotorcraft aircraft are large, heavy, noisy, require manned operators (placing the pilot's life in jeopardy should there be an emergency) and are flammable, these sUAS models are small, light, quite, unmanned (i.e. not risking human life for the purpose of operation), and do not require flammable fuel as a means of propulsion.

The use of IIF's sUAS models also benefits the public from a safety perspective since these sUAS models do not run on fossil fuels. Since both of IIF's sUAS models are battery powered, the use of these sUAS models over the traditional fixed wing or rotorcraft aircraft will be more environmentally and ecologically friendly. In addition, given the extremely light weight of these sUAS models, should an emergency result in a forced landing, injury to property or persons would be negligible compared to the catastrophic injury to property or persons that would result in an emergency landing of a traditional fixed winged or rotorcraft aircraft.

Apart from the added safety benefits of sUAS flight operations, the use of sUAS for aerial photography, aerial videography, and aerial mapping services creates new economic opportunities that could fuel the continued growth of aviation and aviation related interests. Consequently, the public will benefit from the use of sUAS models for commercial purposes as companies like IIF will provide new jobs and economic opportunities, fueling innovation and creativity.

REGULATIONS FROM WHICH EXEMPTION IS REQUESTED

14 CFR §§ 61.23(a) and (c): Medical Certificates Requirement and Duration

IIF requests exemption from 14 CFR §§ 61.23(a) and (c) which provides for certain flight operations requiring medical certificates. IIF's petition for exemption provides an equivalent level of safety in that IIF would require a sUAS PIC to hold either a current medical certificate, of any class, or a valid U.S. Driver's License. IIF's petition for exemption provides an equivalent level of safety as provided in 14 C.F.R. §§61.23(a) and (c).

14 C.F.R. §§ 61.101(e)(4) and (5): Recreational Pilot Privileges and Limitations; 14 C.F.R. § 61.113(a): Private Pilot Privileges and Limitations: Pilot in Command; and 14 C.F.R. §61.315(a): What Are The Privileges and Limits of My Sport Pilot Certificate?

IIF requests exemption from 14 C.F.R. §§ 61.101(e)(4) and (5) which prohibits recreational pilots from receiving compensation for hire or providing flight services in furtherance of a business, respectively. In addition, IIF requests exemption from 14 C.F.R. §61.113(a), which prohibits a certificated private pilot from receiving compensation or flying for hire when acting as PIC, and from 14 C.F.R. §61.315(a), which provides the holder of a sport pilot certificate may only act as pilot in command of a light-sport aircraft.

IIF's petition for exemption provides an equivalent level of safety in that IIF requires the PIC of a sUAS model, at the bare minimum, to hold the privileges of a sport pilot certificate under 14 C.F.R. §61 Subpart J, hold either a medical certificate or valid U.S. Driver's License, and to demonstrate proficiency in the PIC's ability to safely operate the sUAS models in a manner consistent with how the sUAS model will be operated under this petition for exemption.

Distinct comparisons between the commercial activities of IIF and other business operating traditional fixed wing or rotorcraft aircraft expose the unnecessary limitations placed upon sport, recreational and private certificated pilots when considering PIC privileges of commercial sUAS flight operations. Whereas requiring pilots of traditional fixed wing and rotorcraft aircraft to hold commercial and Airline Transport Pilot (ATP) ratings ensures that the pilots possess the necessary skills, training and experience to safely transport persons and/or cargo from the point of departure to the intended point of destination, the same correlation for sUAS pilots does not apply to the flight operations of IIF.

In the case of IIF's sUAS flight operations, no persons or cargo will be carried by the sUAS during IIF's aerial photography, aerial videography, or aerial mapping. Unlike traditional fixed wing or rotorcraft aircraft, which must traverse over a greater distance, greater amount of property, and a greater amount of people in order to get from the point of departure to the intended point of destination, IIF's sUAS will only fly over property authorized by IIF's clients. In other words, the sUAS's flight will not have to originate from a different location and traverse over the properties of disinterested parties in order to fulfill the purpose IIF's flight operations. As such, the risk of injury to disinterested parties is substantially decreased by the use of a sUAS for aerial photography, aerial videography, and aerial mapping.

Consequently, IIF's requirement that the sUAS PIC hold, at least, a sport pilot certificate provides an equivalent level of safety to the requirement that a commercial or ATP rated pilot transport persons and/or cargo for hire in manned aircraft.

14 C.F.R. § 91.7(a): Civil Aircraft Airworthiness

IIF requests an exemption from 14 C.F.R. §91.7(a) which prohibits the operation of civil aircraft unless it is in airworthy condition. As there will be no airworthiness certificate issued for IIF's sUAS models, no standard will exist for determining airworthiness. In any event, IIF's proposed Flight Conditions and Operating Procedure will ensure and equivalent level of safety with 14 C.F.R. §91.7(a).

14 C.F.R. § 91.119(c): Minimum Safe Altitude: General

IIF requests an exemption from 14 C.F.R §91.119(c) which provides that except when necessary for takeoff or landing, no person may operate an aircraft below an altitude of 500 feet above the surface. Furthermore, this section provides that an aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. IIF's petition requests that the sUAS models be flown at an altitude no higher than 400 feet AGL and, when complying with the conditions set forth in section 23(b) of IIF's Flight Conditions and Operating Procedures, at distances closer than 500 feet from any person, vessel, vehicle, or structure.

IIF's Flight Conditions and Operating Procedures provide for an equivalent level of safety. In any event, IIF's sUAS are extremely lightweight, small, and would cause negligible injury to property or damage, when compared to the catastrophic damage that a traditional fixed wing or rotorcraft aircraft would inflict due to a forced landing. Moreover, the size, speed, and weight of IIF's sUAS models dictate that the PIC and VO maintain VLOS, which will also promote signal connectivity between the sUAS's transmitter and receivers.

14 C.F.R. §91.121: Altimeter Settings

IIF requests exemption from 14 C.F.R. §91.121 which provides guidelines for the use of altimeter settings while operating an aircraft. IIF's petition for exemption provides an equivalent level of safety such that the sUAS model's PIC will be able to determine the AGL height of the sUAS due to GPS technology. The AGL height of the sUAS will be displayed for the PIC during all flight operations. As such, the PIC will be able to maintain the requirement that the sUAS be no more than 400 feet AGL during all flight operations.

14 C.F.R. §91.151(a)(1): Fuel Requirements For Flight In VFR Conditions

IIF requests exemption from 14 C.F.R. §91.151(a)(1) which provides that no person may begin a flight in an airplane under VFR conditions with less than 30 minutes of reserve fuel. IIF's petition for exemption provides an equivalent level of safety due to IIF's prohibition against the PIC from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the sUAS to conduct the intended operation and to operate after that for at least 5 minutes or with the reserve power recommended by the manufacturer if greater.

Given the design and technology of the sUAS models that IIF intends to operate, IIF's PIC will have access to all relevant information concerning the sUAS's battery life. The PIC will be able to make an accurate determination as to whether the PIC can comply with IIF's "fuel" requirements for each flight.

14 C.F.R. §91.405(a): Maintenance Required; 14 C.F.R. §91.407(a)(1): Operation After Maintenance, Preventative Maintenance, Rebuilding, Or Alteration; 14 C.F.R. §§ 91.409(a)(1) and (2): Inspections; 14 C.F.R. 91.417(a) and (b): Maintenance Records

IIF requests exemption from the following F.A.Rs: 14 C.F.R. §91.405(a) which provides the owner or operator of aircraft shall have the aircraft inspected pursuant to Subpart E of 14 C.F.R; 14 C.F.R. §91.407(a)(1) which provides that no person may operate any aircraft having undergone preventive maintenance unless approved for return to service by a person authorized under §43.7; 14 C.F.R. §§91.409(a)(1) and (2) which provides that no person may operate an aircraft within the preceding 12 calendar months unless an annual inspection has been performed; and 14 C.F.R. §§91.417(a) and (b) which provides for the recording of an aircraft's maintenance if the aircraft holds an airworthiness certificate.

IIF's petition for exemption provides an equivalent level of safety since IIF requires compliance with the sUAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components. Due to the nature of a sUAS, compliance with certain maintenance requirements under Subpart E of 14 C.F.R. are either impossible or cost prohibitive to implement when applied to a sUAS. As such, IIF should be exempt from these regulations.