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

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

September 3, 2015

Exemption No. 12745
Regulatory Docket No. FAA–2015–2528

Ms. Terra S. Merriman
SkyLens LLC dba Film and Flight
14 Court Theophelia
Saint Augustine, FL 32084

Dear Ms. Merriman:

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 9, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of SkyLens LLC dba Film and Flight (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography and videography.

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 3 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, SkyLens LLC dba Film and 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, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

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

Conditions and Limitations

In this grant of exemption, SkyLens LLC dba Film and 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 3 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

June 9, 2015

U.S. Department of Transportation, Docket Operations M30
West Building Ground Floor, Room w12-140
1200 New Jersey Avenue, S.E.
Washington, DC 20590-0001

Petition of SkyLens LLC dba Film and Flight for Exemption Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012.

To Whom It May Concern:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 and 14 CFR Part 11, SkyLens LLC, dba Film and Flight, hereby applies for exemption from the aforementioned Federal Aviation Regulations (FARs) to allow commercial operation of its Unmanned Aircraft Systems (UASs).

This exemption is in accordance with the conditions outlined herein, the enclosed Film and Flight General Operations Manual[1], DJI UAS User's Manuals, DJI Quick Start Guides[2], and all other requirements established by the FAA pursuant to Section 333 of the Modernization and Reform Act.

This exemption would allow SkyLens LLC to perform commercial operations using DJI Phantom 3 and DJI Inspire 1 UAS for the purposes of aerial photography and videography. These operations would be operated in airspace that is 1) limited 2) predetermined 3) has controlled access and 4) would provide safety enhancements to the already safe operations in the film and television industry using conventional aircraft.

The name and address of the applicant is:

SkyLens LLC, dba Film and Flight
Attn: Terra S. Merriman
Ph: (904) 377-0036
Email: shanti.merriman@gmail.com
Address: 14 Court Theophelia • Saint Augustine, FL 32084

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[1] SkyLens LLC is submitting its General Operations Manual (GOM) as a confidential document under 14 CFR35(b), the entire content of the GOM contains confidential commercial and proprietary information that SkyLens has not and will not share with others. This manual contains operating procedures that are not available to the public and are protected from release under the Freedom of Information Act, 5 USC § 552 (b) (4).

[2] In an effort to reduce the unnecessary printing of materials, DJI User Manuals and Quick Start Guides can be downloaded from the DJI support website at: www.dji.com/support

SkyLens LLC's UAS are multi rotor aircraft, weighting less than 55 lbs. including payload. They operate, under normal conditions at a speed of no more than 100 mph and have the capability to hover, and move in the vertical and horizontal plane simultaneously. They will operate only in line of sight and will operate only within the sterile area described in the Film and Flight General Operating Manual, (hereinafter "GOM"). Such operations will insure that the UAS will "not create a hazard to users of the national airspace system or the public".

Given the small size of the UAS involved and the restricted sterile environment within which they will operate, the applicant falls squarely within that zone of safety (an equivalent level of safety) in which Congress envisioned that the FAA must, by exemption, allow commercial operations of UASs to commence immediately. Also due to the size of the UASs and the restricted areas in which the relevant UAS will operate, approval of the application presents no national security issue. Given the clear direction in Section 333 of the Reform Act, the authority contained in the Federal Aviation Act, as amended; the strong equivalent level of safety surrounding the proposed operations, and the significant public benefit, including enhanced safety, reduction in environmental impacts, including reduced emissions associated with allowing UASs aerial filming, the grant of the requested exemptions is in the public interest. Accordingly, the applicant respectfully requests that the FAA grant the requested exemption without delay.

SkyLens LLC's GOM provides procedures and limitation under which the operator will be bound by. These limitations provide for at least an equivalent or even higher level of safety to operations under the current regulatory structure because the proposed operations represent a safety enhancement to the already safe aerial filming operations conducted with conventional aircraft.

The limitations and conditions to which SkyLens LLC agrees to be bound when conducting commercial operations under an FAA issued exemption include:

1. Minimum crew will consist of a PIC and a Visual Observer (VO).

2. All operations will be conducted under daytime VFR conditions.

3. Flights will be operated within Visual Line Of Sight (VLOS) of the PIC and VO.

4. If the PIC or VO lose sight of the UAS, the PIC will immediately active the "return to home" function of the aircraft.

5. Pilot in Command and Visual Observer will at all times be able to communicate by voice.

6. Prior to flight the PIC will insure there is enough available power for the UAS to conduct the intended operation and to operate thereafter for at least five minutes or the reserve power recommended by the manufacturer whichever is if greater.

7. Flights will be operated at an altitude of no more than 400 feet AGL.

8. All Flight operations will 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 UAS and/or debris in the event of an accident. The operator 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 UA, flight operations will 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.

9. The UAS will operate only within a confined "Sterile Area" as defined in the GOM.

10. In accordance with the GOM a briefing will be conducted in regard to the planned UAS operations prior to each day's missions. It will be mandatory that all personnel who will be performing duties within the boundaries of the sterile area be present for this briefing.

11. In the event of an accident involving a Film and Flight UAS, the PIC will immediately cease operations and report the accident to the NTSB and AFS-80.

12. All required permissions and permits will be obtained from territorial, state, county or city jurisdictions, including local law enforcement, fire or other appropriate governmental agencies.

13. Contingency plans will be in place to safely terminate flight if there is a loss of communication between the PIC, the VO, or the UAS.

14. Procedures have been established in Film and Flight's GOM to contact ATC prior to operating in the National Airspace System (NAS).

SkyLens LLC. Is requesting exemption from the following FARs:

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)
91.417(a) and (b)

SkyLens LLC operates UASs in a manner consistent with prior section 333 exemptions. Many previous cases have set precedent in which the FAA has granted relief from the listed FARs (See: Nos 11062, Nos 11109, Nos 11112, and Nos 11213). Since SkyLens LLC falls squarely within the already established zone for exemption, and would not set a precedent for exemption from the listed FARs, they will forgo elaboration of the FAR definitions and necessary reasons for exemption.

Regards,

Terra S. Merriman, Manager
SkyLens LLC. dba Film and Flight
Cell Phone: (904) 377-0036
filmandflight@gmail.com

FILM FLIGHT

GENERAL OPERATIONS MANUAL

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1. Introduction

The General Operations Manual (GOM) has been developed by SKYLENS LLC dba FILM AND FLIGHT in conjunction with an application for exemption under section 333 of the FAA Modernization and Reform Act of 2012 for the purpose of aerial filming. The policies, procedures, and conditions contained within this manual shall be followed at all times during operations that require a section 333 exemption.

2. Aircraft

Film and Flight utilizes DJI Phantom 3 and DJI Inspire 1 UAS for aerial filming and photography.

2.1. DJI Phantom 3

2.1.1. Description

The Phantom 3 (P3) is a Small Unmanned Aircraft System (sUAS). The aircraft's weight including battery is 1280g (2.82lbs). The dimensions of the P3 are 28.9cmX28.9cmX18.5cm (LxWxH). The P3 is a multirotor aircraft consisting of four propellers driven by four independent brushless electrical motors. Electrical power is provided by an interchangeable Intelligent Flight Battery (PH3-4480), which powers the motors, camera, onboard flight controller and all other electric components. The P3 has the capability to move along the vertical and horizontal planes as well as hover in position. The P3 contains a Ground Positioning System (GPS) receiver as well as Visual Positioning technology that allows it to follow precise tracks both indoors (via visual positioning) as well as outdoors (via GPS). Attached to the bottom of the P3 is a 3-Axis gimbal containing a small High Definition (HD) camera. The camera is capable of recording 4K video as well as taking still images. In addition, the camera transmits a live video feed back to sUAS operator. The P3 is controlled by a hand held Remote Controller. The Remote Control operates in the frequency range between 2.400 GHz and 2.483 GHz, and has a maximum transmission distance of 2km (outdoors and unobstructed). In addition to the remote controller, advanced settings and controls can be accessed via the DJI pilot app on a connected tablet. In the event the P3 loses communication or its GPS signal, it has the ability to return to a predetermined position within the Area of Operation. Both the P3 as well as the Remote Controller have been certified in compliance with part 15 or the FCC Rules.

2.1.2. Specifications and Limitations

Weight (including battery).....1280 g
Max Ascent Speed.....5 m/s
Max Descent Speed.....3 m/s
Max Speed.....16 m/s (ATTI mode, no wind)
Max Flight Altitude.....6000 m
Max Flight Time.....Approximately 23 minutes
Operating Temperature Range.....0°C to 40°C
GPS.....GPS/GLONASS

P3 Intelligent Flight Battery (PH3-4480 mAh-15.2V):

Capacity.....4480 mAh
Voltage.....15.2 V
Battery Type.....LiPo 4s
Energy.....68 Wh
Net Weight.....365 g
Operating Temperature.....-10°C to 40°C
Max Charging Power.....100W
Phantom 3 Remote Controller:
Operating Frequency.....2.400 GHz – 2.483 GHz
Max Transmission Distance.....2 km (outdoors and unobstructed)
Operating Temperature.....0°C to 40°C
Battery.....6000 mAh LiPo 2S
Transmitter Power (EIRP).....FCC: 20 dbm; CE: 16 dbm
Working Voltage.....1.2 A @ 7.4 V

A comprehensive list of specifications and limitations can be found in the DJI Phantom 3 Quick Start Guide and DJI Phantom 3 User Manual.

2.2. DJI Inspire 1

2.2.1. Description

The Phantom Inspire 1 (Inspire1) is a Small Unmanned Aircraft System (sUAS). The aircraft's weight including battery is 1935g (6.47lbs) and has a maximum weight including payload of 3400g (7.49lbs). The dimensions of the Inspire1 are 43.8cmX45.1cmX30.1cm (LxWxH). The Inspire1 is a multirotor aircraft consisting of four propellers driven by four independent brushless electrical motors. Electrical power is provided by an interchangeable Intelligent Flight Battery (TB47 or TB48), which powers the motors, camera, onboard flight controller and all other electric components. The Inspire1 features retractable landing gear that can be raised in flight to provide unobstructed visibility of the onboard camera. The Inspire1 has the capability to move along the vertical and horizontal planes as well as hover in position. The Inspire1 contains a Ground Positioning System (GPS) receiver as well as Visual Positioning technology that allows it to follow precise tracks both indoors (via visual positioning) as well as outdoors (via GPS). Attached to the bottom of the Inspire1 is a ZENMUSE X3, 3-Axis gimbal, containing a small High Definition (HD) camera. The camera is capable of recording 4K video as well as taking still images. In addition, the camera transmits a live video feed back to sUAS operator. The Inspire1 is controlled by a hand held remote controller, and additionally a second remote controller can be used to operate the camera gimbal. The Remote Control operates in the frequency range between 2.400 GHz and 2.483 GHz, and has a maximum transmission distance of 2km (outdoors and unobstructed). In addition to the remote controller, advanced settings and controls can be accessed via the DJI pilot app on a connected tablet. In the event the Inspire 1 loses communication or its GPS signal, it has the ability to return to a predetermined position within the Area of Operation. Both the Inspire1 sUAS as well as the Remote Controller have been certified in compliance with part 15 or the FCC Rules.

2.2.2. Specifications and Limitations

Weight (including battery).....2935 g (3400 g max)
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 Flight Time.....Approximately 18 minutes
Operating Temperature Range.....-10°C to 40°C
GPS.....GPS/GLONASS

Inspire1 Intelligent Flight Battery (Model:TB47):
Capacity.....4500 mAh
Voltage.....22.2 V
Battery Type.....LiPo 6s High voltage Battery
Energy.....99.9 Wh
Net Weight.....570 g
Operating Temperature.....-10°C to 40°C
Max Charging Power.....180W

Inspire1 Intelligent Flight Battery (Model:TB48, Optional):
Capacity.....5700 mAh
Voltage.....22.8 V
Battery Type.....LiPo 6s High voltage Battery
Energy.....129.6 Wh
Net Weight.....670 g
Operating Temperature.....-10°C to 40°C
Max Charging Power.....180W

Inspire 1 Remote Controller:
Operating Frequency.....2.400 GHz – 2.483 GHz
Max Transmission Distance.....2 km (outdoors and unobstructed)
Operating Temperature.....0°C to 40°C
Battery.....6000 mAh LiPo 2S
Transmitter Power (EIRP).....FCC: 20 dbm; CE: 16 dbm
Working Voltage.....1.2 A @ 7.4 V

A comprehensive list of specifications and limitations can be found in the DJI Inspire 1 Quick Start Guide and DJI Inspire 1 User Manual.

3. Pilot In Command

3.1. Responsibilities

The Pilot in Command (PIC) has full Operational Control over the flight mission. The PIC has the ability to initiate as well as terminate a flight and must do so in the event of unpredicted obstacles or emergencies. Each PIC must meet all qualifications experience requirements described in sections 3.2 and 3.3 of this GOM. Additionally the PIC is

responsible for being familiar with and following all procedures, guidelines, and safety bulletins established by the UAS Manufacturer. The PIC will adhere to all applicable FARs, and requirements set forth in all FAA exemption documents.

3.2. Qualifications

Each 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.

3.3. Experience

All PICs must meet the following minimum level of flight experience:

1. The PIC must have accumulated and logged a minimum of 100 flight cycles and 25 hours of total time as a UAS pilot with at least 10 hours logged as a UAS pilot with a similar UAS type (single-blade or multi-rotor) and 5 hours in the make and model of UAS aircraft to be flown.

2. Within the preceding 90 days, the PIC must have accumulated and logged a minimum of five Flight Cycles (as defined in the glossary) as UAS pilot with the make and model of UAS to be utilized as well as performed three takeoffs and landings.

The PIC must also meet the flight review requirements specified in 14 CFR Part 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

3.4. Training

Flight training for the purposes of experience building and proficiency will be conducted during dedicated training sessions. During such training sessions, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UAS with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

4. Visual Observer

4.1. Responsibilities

All persons serving as a Visual Observer (VO) will meet the qualifications and experience requirements of sections 4.2 and 4.3 of this GOM. The visual observer (VO) is responsible for assisting the PIC in the duties associated with collision avoidance. The VO serves as a second set of eyes and will supply their total and undivided attention to the UAS and its surroundings. The VO will remain near the PIC and will use voice to communicate. The VO will exercise Crew Resource Management (CRM) and aid to insure the safety of the operation and its participants. Additionally the VO will help the

PIC insure that:

1. The UAS remains within Visual Line of Sight range (VLOS).
2. The Area Of Operation remains sterile.
3. The following are identified and avoided: Non-participating aircraft, clouds, obstructions and terrain.

4.2. Qualifications

Each VO must hold at a minimum a drivers license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or a Federal government. This license requirement will serve to insure that the VO possesses adequate health and vision to perform the functions required.

4.3. Experience

Prior to acting as a VO during a Flight Mission, each VO will be required to read the Visual Observer Briefing Guide in Appendix A to insure they understand their role and posses the required qualifications.

5. Maintenance

The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

5.1. Pre-Flight Inspection

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.

The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

5.2. Functional Test Flights

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. 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.

6. Operations

7.1. Overview

The operator uses UAS to conduct aerial filming and photography. When engaging in commercial operations, these flights will be referred to as Flight Missions.

6.2. Area of Operations

Prior to each flight mission an area of operations must be established. The PIC will designate both a lateral area over the ground as well as a vertical area in which the UAS will be operated. Prominent landmarks should be picked in advance to mark the lateral boundaries, and a height above ground level should be used to mark the vertical boundaries. Prior to each flight mission, the PIC will insure that the designated area of operation meets the following requirements:

- The area falls within the approved Certificate of Operation (COA).
- Permission has been obtained from all appropriate entities including territorial, state, county or city jurisdictions, local law enforcement, fire or other appropriate governmental agencies.
- And finally that the area is, and will remain a sterile area.

6.3. Preflight Briefing

Prior to each flight mission, the PIC will conduct a preflight briefing. All pilots, VOs, and other participants are required to attend the preflight briefing. The following items are mandatory briefing items. To insure FAA and GOM compliance, the PIC will use the preflight checklist below.

PREFLIGHT BRIEFING:
-Flight Mission objective: Define the mission for the day's operation.
-Assign/verify roles of all participants:
-Weather: Insure the Mission is in compliance with section 7 of the GOM.
-Area of Operation: Insure compliance with COA as well as any local rules and regulations. Verify all permission forms, as well as required permits are complete. Additionally insure that the Area of Operation is sterile.
-Review contingency plans in case of the need to abort the mission.
-Verify the UAS meets all maintenance requirements of section 5 of the GOM.
-Questions?

6.4. UAS Checklist

In addition to the preflight briefing, the following UAS checklist must be referenced prior to flight.

UAS PREFLIGHT CHECKLIST:

1. Transmitter firmware up to date
2. UAS firmware up to date
3. Inspect UAS for obvious defects
4. Batteries fully charged

5. Propellers tightened and/or locked
6. ND Filter needed? Yes/No
7. SD card in camera, SD card formatted if needed
8. Monitor brightness set to high and hood installed
9. Transmitter antenna up
10. Transmitter turned on
11. UAS turned on
12. UAS calibrated
13. UAS placed in safe launce and recovery position
14. Area clear of non participants

FLIGHT:

1. Hit record on camera?
2. Warn bystanders of imminent takeoff
3. Hover close for 20 seconds. Look/Listen for defects
4. Confirm expected stick operation
5. Monitor battery power
6. Keep visual line of sight with UAS
7. Monitor signal strength

6.5. RESTRICTIONS

All operations conducted by the operator will adhere to the following restrictions:

1. Minimum crew will consist of a PIC and a Visual Observer (VO).

2. All operations will be conducted under daytime VFR conditions.

3. Flights will be operated within Visual Line Of Sight (VLOS) of the PIC and VO.

4. If the PIC or VO lose sight of the UAS, the PIC will immediately active the "return to home" function of the aircraft.

5. Pilot in Command and Visual Observer will at all times be able to communicate by voice.

6. Prior to flight the PIC will insure there is enough available power for the UAS to conduct the intended operation and to operate thereafter for at least five minutes or the reserve power recommended by the manufacturer whichever is if greater.

7. Flights will be operated at an altitude of no more than 400 feet AGL.

8. All Flight operations will 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 UAS and/or debris in the event of an accident. The operator 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 UA, flight operations will 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.

9. The UAS will operate only within a confined "Sterile Area" as defined in the GOM.

10. In accordance with the GOM a briefing will be conducted in regard to the planned UAS operations prior to each day's missions. It will be mandatory that all personnel who will be performing duties within the boundaries of the sterile area be present for this briefing.

11. In the event of an accident involving a Film and Flight UAS, the PIC will immediately cease operations and report the accident to the NTSB and AFS-80.

12. All required permissions and permits will be obtained from territorial, state, county or city jurisdictions, including local law enforcement, fire or other appropriate governmental agencies.

13. Contingency plans will be in place to safely terminate flight if there is a loss of communication between the PIC, the VO, or the UAS.

14. Procedures have been established in Film and Flight's GOM to contact ATC prior to operating in the National Airspace System (NAS).

7. Weather

Prior to each flight, the PIC will check the weather to insure that current and forecast conditions will allow for the safe operation of the UAS. Approved sources of weather include aviationweather.gov, WSI Pilotbrief, and any other source that would provide an equivalent level of weather information. The following conditions present a danger to operations and prohibit the initiation of a flight mission:

- Wind gusts that exceed the UAS's recommended limits.
- Rain
- Snow
- Fog (or other atmospheric condition lowering the visibility below 3sm).

Additionally the PIC will insure that the proposed operation will allow the UAS to remain 500 below and 2000 feet horizontally from all clouds.

At any time during operation if the weather deteriorates, the PIC will land the UAS in an expeditious manner while keeping in mind the safety of persons and property.

8. Accident/Incident Reporting:

Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA will be reported to the FAA's UAS Integration Office (AFS-80) within 24 hours. Accidents will be reported to the National Transportation Safety Board (NTSB) IAW procedures contained on the NTSB website: www.ntsb.gov.

9. Glossary

Area of Operation: The designated area in which the flight mission will take place. This includes the lateral as well as vertical space in which the planned flight is to take place.

Flight Cycle: A flight beginning with a fully charged battery and ending when the flight reserve power has been reached.

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.

Non-Participants: Persons and property that have agreed to participate in the flight mission.

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

Participants: Persons and property that have agreed to participate in a flight mission.

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).

Sterile Area: An area that is clear and free from all nonparticipants. An area of operation will only be considered sterile when it is determined that the UAS operation will be able to comply with restrictions listed under section 6.5.8 of this GOM.

Unmanned Aircraft System (UAS): 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).

UAS Certificate of Waiver or Authorization (COA): An authorization issued by the Air Traffic Organization to an operator for a specific unmanned aircraft activity. A COA is required prior to each flight in the NAS and must be obtained for the Area of Operation to be utilized.

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.

Appendix A

A.1 Film and Flight Permission Acquisition Form

In signing this form, I am giving the pilots of Film and Flight permission to operate their UAS at less than 500 feet from property, or in some jurisdiction in which I am responsible for or affiliated with, for the purpose of aerial filming.

Name:

Title:

Basis of Authority to Grant Permission:

Location:

Date of Operation:

Signature _____ Date _____

Film and Flight Representative Receiving Permission

_____

A.2 Visual Observer Briefing Guide

Film and Flight is pleased to have you serving as a Visual Observer on todays flight mission. This guide will serve as your Visual Observer familiarization and briefing guide, so please read it carefully. We are happy to provide additional information should you have any questions.

As a Visual Observer, your responsibility is to assist the PIC (Pilot In Command) in their duties associated with collision avoidance. In other words, you are going to serve as a second set of eyes and make sure the pilot doesn't hit anything! This includes, but is not limited to, avoidance of other traffic (aircraft), clouds, obstructions and terrain.

The only requirement to serve as a Visual Observer is that you possess a current driver's license and have the ability to visually observe the unmanned aircraft in flight (Prescription glasses or contacts must be warn if required). Additionally during operations in bright sunlight we highly recommend that sunglasses are warn.

All we ask of you during the operation is that you provide your full and undivided attention to watching the unmanned aircraft. Your participation is very important so we ask that you refrain from all unrelated distractions during the flight mission.

If during the operation you see any obstacles (other aircraft, clouds, buildings, terrain, etc.), immediately inform the pilot using the following format:

a) Obstacle description
b) Obstacles position in relation to the unmanned aircraft (ahead, to the left, to the right, behind.)

Example: If you see a tall tree that the unmanned aircraft is headed towards, call out:

"Tall tree (obstacle description), straight ahead (obstacle position)!"

Please feel free to speak up at any time if you have any questions or concerns regarding the operation. You are part of the team, and there is no such thing as a silly question.

We hope you enjoy the experience, and thank you for your participation in todays flight mission!

A.3 Revision Letter

Rev#	Section	Page	Action	Remarks	Initials

R • Remove and Replace D • Delete and Destroy N • Insert New Page

Manual Serial# _____ Issued To _____

Revised By _____

Date _____

This form must be returned to the Chief Pilot no later than _____