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

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

June 23, 2015

Exemption No. 11859
Regulatory Docket No. FAA–2015–1060

Mr. Steve Fincher
Steve Fincher Photography
6240 N. Pinnacle Drive
Spartanburg, SC 29303

Dear Mr. Fincher:

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 April 15, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Steve Fincher Photography (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial photography and filmmaking.

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

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

**Airworthiness Certification**

The UAS proposed by the petitioner is a 3DR Iris+.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the

aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

**The Basis for Our Decision**

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

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

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

**Our Decision**

In consideration of the foregoing, I find that a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. 106(f), 40113, and 44701, delegated to me by the Administrator, Steve Fincher Photography 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, Steve Fincher Photography 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 3DR Iris+ when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are not permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed.

Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

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

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

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

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be

operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification

(N−Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

25. The UAS may not be operated by the PIC from any moving device or vehicle.

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

    The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.

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

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N−Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

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

Re: Exemption Request under Section 333 of the FAA Reform Act and Part 11 of the Federal Aviation Regulations

This application is being submitted on our own behalf without legal council or consulting services.

Dear Sir or Madam:
Pursuant to Section 333 ofthe FAA Modernization and Reform Act of2012 (the "Reform Act") and 14 C.P.R. Part 11, Steve Fincher Photography Inc. does hereby apply for an exemption from the Federal Aviation Regulations ("FAR's") identified below, to allow commercial use of small unmanned aerial systems ("sUAS") for the purpose of aerial photography and filmmaking.

Also, pursuant to 14 CPR § 11.87, we request that the FAA not publish this petition request in the Federal Register and not delay action based on the following:

1. This petition for exemption does not set precedent. Previous identical exemption requests have been approved.

2. The requested relief is identical to exemptions granted previously, specifically, Exemption(s) Nos. 11109 (Clayco, Inc.) and 11170 (Viafield)), 11310 (Colin Hinkle), and others.

3. A delay in action on this petition would adversely affect pending requests for aerial photography operations and result in lost opportunity and wages as several of my clients have been approached or have currently used Amateur photographers providing this service without FAA exemption., the competitive advantage for unapproved commercial sUAS operators exists and continues to grow every day.

Part 11, Steve Fincher Photography Inc., seeks an exemption from the Federal Aviation Regulations ("FARs") listed below:

- 14 C.F.R. Part 21
- 14 C.F.R. 45.23
- 14 C.F.R. 45.29
- 14 C.F.R. 61.23
- 14 C.F.R. 61.3
- 14 C.F.R. 61.113(a) & (b)
- 14 C.F.R. 61.133(a)
- 14 C.F.R. 91.7(a)
- 14 C.F.R. 91.9
- 14 C.F.R. 91.119
- 14 C.F.R. 91.121
- 14 C.F.R. 91.151(a)
- 14 C.F.R. 91.203
- 14 CFR Subpart E (91.401 - 91.417)

The requested exemption would authorize unmanned aircraft operations using the 3DR Iris+ for still photography and video. These operations will be subject to strict operating requirements and conditions to ensure at least an equivalent level of safety to currently authorized operations using manned aircrafts. Steve Fincher Photography Inc, has established itself as a leader in commercial and aerial photography with 35 years in business using small manned aircraft and with the use lightweight UASs would be able to operate in a much more cost effective as well as a much safer manner as the sUAS would be much safer to operate as opposed to larger heavier manned aircraft.

Steve Fincher Photography Inc, serves clients that include automotive manufacturing, industrial manufacturing, architectural clients, construction companies, law enforcment, city, county and state agencies as well as many other commercial and industrial cleints. We currently use helicopters and small manned aircraft to provide aerial photography of performance automobiles on the manufactureres closed circuit test facility, Industrial equipment in use on construction sites, monthly construction progress recording, architectural photography, road and bridge construction, sports photography for manufactures of kayaks and boating equipment, real estate, corporate manufacturing facility photography and many other uses. By permiting us to use small UAV's for these purposes it will greatly reduce the impact on the environment with less fuel consumption as well as less noise pollution. In addition the saftey factor with the use of UAV's will be much better as we often are required to fly low and in close proximity to the subject. By using a 5 pound UAV instead of a manned aircraft weighing hundreds or thousands of pounds everyone on the ground and in the air would be much safer.

Steve Fincher is the operator of the sUAV with 40 years of RC Aircraft experience and a member of the Academy of Model Aeronautics (AMA), Mr. Fincher is extremely concerned with safety in the operation of sUAS systems and has 100's of hours flying small remote control aircraft as well as many hours flying the 3DR Iris+ which is the sUAS that will be used for both still photography and video. Steve Fincher has been operating lightweight model aircraft as a hobby for many years without incident and would like to formally request permission to fly its UASs commercially in the United States to capture aerial photography and video. Each flight is flown Line of Sight (LOS) and always below 400 feet. Predetermined, specifically marked areas of operation, cordoned off locations and corresponding current safety controls will allow Steve Fincher Photography Inc. to operate within current safety parameters. To date, Steve Fincher Photography Inc. has flown countless flights and has done so safely and successfully. Steve Fincher Photography Inc. exemption request would permit its operation of lightweight, unmanned (piloted by remote control) and comparatively inexpensive UASs in tightly controlled and limited airspace under 400 feet during daylight hours.

The 3DR Iris+ will be operated by Steve Fincher who has the following requirements:

- Is a registered member of the AMA.
- Has over 100 hours of flight time using the 3DR Iris+.
- Has studied and completed the 3DR manufacturers online video instruction for the assembly, maintenance and repair of the Iris+.
- Has studied and completed the 3DR manufacturers online video instruction for Pre-flight procedures, flight procedures including both software controlled as well as manual controlled flight and landing. Pilot has logged over 100 hour of flight time with th Iris+.
- Has studied and completed the 3DR manufacturers online video instruction for the use and pro gramming of flight patterns and flight procdures using both the Droidplanner and Mission Planner software that is used in flight planning for the Iris+. This software allows the flight to be pre-planned and programmed into the Iris+ which allow parameters to be set for maximum altitude, distance from pilot as well as many other parameters. This allows for the flight to be safely undertaked and controlled by the software but also allow with the flip of one switch return of complete control back to the pilot.
- Has held a General Class Amateur Radio Operators License for over 30 years that gives a unique understanding of electronic circuitry for maintence and repair of the circuits used in the Iris+, transmitter and antenna lobe characteristics and radio frequency characeristics that help in understanding of RF interference as well as the limitations of the technology associated with remote control aircraft.
- Has been flying model aircraft for over 40 years with 100's of hours flying remote control craft.
- Has been flying ultralight aircraft for over 20 years and has completed a certified training course including ground school for ultralight aircraft by Flight World, LLC .
- 35 years experience shooting aerial photography from helicopters as well as small fixed wing air craft is very familiar with rules and regulations reguarding altitude, flight patterns around airports as well as other aircraft and communication with air traffic contollers when needed.
- Has a valid driver's license
- Steve Fincher Photography Inc. is covered with $2,000,000 of commercial insurance.

## 1. CHARACTERISTICS OF THE AIRCRAFT

The 3DR Iris+ is a small 5 pound UAS with an on-board GPS and related flight management software that allows the operator to safely and efficiently plan a mission in 3D and monitor it in real-time using Mission Planner Software. The software has built in limitations that keep the flight to Line of Sight, limit the aircraft to altitudes of no more than 400 feet. Additionally the software provides automatic land with return to home function in case of low battery, GPS signal loss or also with the flip of a switch in case of an emergency. The 3DR Iris plus is electric powered with a flight time or no more than 20 minutes per battery so there is no flamable fuel onboard. Currently, this identical as well as similar lightweight, remote controlled UASs have been aaproved for exemption by the FAA, as well as many are legally operated by amateurs with no flight experience, safety plan or controls in place to prevent catastrophe. It is only logical to allow Steve Fincher Photography Inc. highly experienced remote control pilot, to operate similar lightweight UASs.

2. APPLICATIONS AND ADDED VALUE

Steve Fincher Photography intents to use the Iris+ to augment our exsiting photography service and feel that the savings on impact to the environment on fuel usage, noise factor and the safety of a small 5 pound aircraft as opposed to aircraft weighing hundreds of pounds will benefit all invloved. This will also allow us to get a much desired lower angle photograph than is currently possible to acheive with manned aircraft while still operating in a much safer manner.

3. APPLICABLE LEGAL STANDARD UNDER SECTION 333

a. Airworthiness assessment of the Iris+

Steve Fincher Photography notes that the airworthiness of the Iris+ has already been approved for exemption in many cases by the FAA.

b. Operating Conditions

Grant of the exemption to Steve Fincher Photography for use of the Iris+ will be subject to the following operating conditions, based on the operating conditions set forth by the Academy of Model Aeronautics). The main restrictions are summarized below:

- Operations to be conducted over private, controlled-access, or public property where approved
- Permission from the land owner/authority required before commencing any flight
- Operations over congested areas shall be avoided;
- Operations must not interfere with manned aircraft operations, must yield the right of way to manned aircraft, and operators must See & Avoid other aircraft and obstacles at all times
- Operations limited to Visual Flight Rules Meteorological Conditions (VMC) and daylight hours
- Aircraft operations must remain within Visual Line of Sight (VLOS) and will be visually moni tored at all times;
- Visual Line of Sight operations guaranteed with a GPS geo-fence around operator of 0.15 miles
- Flight ceiling pre-programed at 400 feet;
- All operations conducted within 5 miles from an airport shall only be initiated after verbal coordination with the airport authority, or air traffic control when a control tower is present at the airport;
- All operations shall comply with required permissions and permits established by territorial, state, county or city jurisdictions; including local law enforcement, fire, or other appropriate governmental agencies.
- The Iris+ operations will be compliant with existing safety procedures inherent to the activities of the related company.

EXEMPTION REQUEST AND EQUIVALENT LEVEL OF SAFETY SHOWINGS UNDER APPLICABLE RULES SUBJECT TO EXEMPTION

Steve Fincher Photography requests an exemption from the following regulations as well as any additional regulations that may technically apply to the operation of the 3DR Iris+:

14 C.F.R. Part 21, Subpart H: Airworthiness Certificates
14 CFR § 91.203(a)(1)

Section 91.203 requires all civil aircraft to have a certificate of airworthiness. Part 21, Subpart H, entitled Airworthiness Certificates, establishes the procedural requirements for the issuance of airworthiness certificates as required by FAR § 91.203(a). Given the size of the Iris+, its very light weight (the maximum take-off weight is less than 5 pounds) and the limited operating area associated with its utilization, it is unnecessary to go through the certificate of airworthiness process under Part 21 Subpart H in order to achieve or exceed current safety levels. The FAA has determined that no exemption is required of this section if a finding is made under the Reform Act that the sUAS selected provides an equivalent level of safety when compared to aircraft normally used for the same application. As the aircraft specified in this exemption request meet the size, weight, speed and other characteristics of sUAS aircraft specified in previously approved exemption requests as noted, no exemption is believed to be needed.

An equivalent or greater level of safety is obtained when sUAS physical and operating characteristics, safety systems, maintenance requirements and other operating procedures as set forth by the manufacturer (3D Robotics) are followed.

14 C.F.R. § 45.23 & 14 C.F.R. § 45.29: Display of marks; size of marks

These regulations provide that each aircraft must display "N" and the aircraft's registration number in letters at least 3 inches high. Additionally, the aircraft must display the word "EXPERIMENTAL" in letters at least 2 inches high near the entrance to the cabin, cockpit, or pilot station.

Given the size of the Iris+, this requirement is impossible to match.

The equivalent level of safety will be achieved by having the upper part of the Iris+ provided with a decal with a copy of the AMA membership as well as the address and phone number of the operator in charge.

14. CFR §61.23 Medical certificates: Requirement and duration

Regulations provide that a person:

(1) Must hold a first-class medical certificate:

- When exercising the pilot-in-command privileges of an airline transport pilot certificate;
- When exercising the second-in-command privileges of an airline transport pilot certificate in a flag or supplemental operation in part 121 of this chapter that requires three or more pilots; or
- When serving as a required pilot flight crew member in an operation conducted under part 121 of this chapter if the pilot has reached his or her 60th birthday.

(2) Must hold at least a second class medical certificate when exercising:

- Second-in-command privileges of an airline transport pilot certificate in part 121 of this chapter (other than operations specified in paragraph (a)(1)(ii) of this section); or
- Privileges of a commercial pilot certificate

Given the size of the Iris+, its structure, the limited flight area, and the safety features integrated in the autopilot (among others the Flight Termination System), FAA has previously detrmined that an Equivalent Level of Safety can be reached if the operator has a valid driver's license.

4 C.F.R. § 61.3: Requirements for certificates, ratings and authorizations
14 C.F.R. § 61.113(a) & (b); 61.133(a): Private Pilot Privileges and Limitations; Pilot in Command; Commercial Pilot Privileges and Limitations

The regulation provide that no person may serve as a required pilot flight crewmember of a civil aircraft of the United States, unless that person:

(1) Has a pilot certificate or special purpose pilot authorization issued under this part in that person's physical possession or readily accessible in the aircraft when exercising the privileges of that pilot certificate or authorization. However, when the aircraft is operated within a foreign country, a pilot license issued by that country may be used.

The regulation provides also that no person that holds a private pilot certificate may act as pilot in command of an aircraft for compensation or hire. Subparagraph (b) allows a private pilot to act as pilot in command of an aircraft in connection with any business or employment if:

(1) The flight is only incidental to that business or employment;
(2) The aircraft does not carry passengers or property for compensation or hire.

Because the Iris+ will not carry a pilot or passengers, the proposed operations can be achieved using the safety features of the Iris+ and the fact that the missions are pre-programmed and monitored in real-time with a specific flight management software, Steve Fincher Photography proposes that operators of the Iris+ should not be required to hold a commercial or private pilot certification. The equivalent level of safety will be achieved by having an operator with many years of remote control aircraft experience, over 100 hours of flight time with the Iris+, Pilot has completed the 3DR manufactureres training videos on assembly, maintainence, pre-flight, flight and landing procedures and Mission Planner software training for programming of the Iris+. 35 years of experience in manned aerial photography, over 20 years of experience as an ultralight pilot having completed a course in ultralight flight school.

14 C.F.R. § 91.7(a): Civil aircraft airworthiness

This regulation requires that no person may operate a civil aircraft unless it is in airworthy condition. Should the exemption be granted allowing operation of the Iris+ without an airworthiness certificate, no standard will exist for airworthiness of the Iris+ although the Iris+ has been given airworthiness exemptions already in many cases. An equivalent level of safety will be achieved by insuring compliance with the Iris+ user manual prior to each flight.

14 C.F.R. § 91.9: Civil aircraft flight manual, marking, and placard requirements.

This regulation provides that no person may operate an aircraft unless a current, approved flight manual is in the aircraft. We assume that the intent of this requirement is to ensure that flight manual information is available to the aircrew while operating the aircraft. We request an exemption to this requirement since the aircraft is not only too small to carry documentation, but the documentation would not be available to the crew, as there is no flight crew on board.

The equivalent level of safety will be achieved by keeping a hard copy of the Iris+ user manual in the transport box that will be within reach of the operator at all times.

14 CFR § 91.119: Minimum Safe Altitudes

The regulation provides that over sparsely populated areas, the aircraft cannot be operated closer than 500 feet to any person, vessel, vehicle, or structure. Since the Iris+ will be operating at a maximum of 400 feet AGL, We cannot comply with this requirement.

The equivalent level of safety will be achieved because the Iris+ will only fly over private property with the permission of the landowner. Before every flight, the operator will define a working area radius and a flight area ceiling, preventing the Iris+ to go beyond the flight area. The landowner and the persons who may be on the ground in the flight area will be briefed of the expected route of flight and the associated risks to persons and property on the ground. Due to the small size of the Iris+, the material with which it is built and its specific safety procedures (among others ground detection), the hazard to persons, vessels, vehicles, and structures is not comparable to manned aircraft and should be considered in granting the exemption. Moreover, the aircraft will not be operated over congested areas or over any open-air assembly of persons.

14 CFR 91.121 – Altimeter settings

This section requires that each person operating an aircraft shall maintain the cruising altitude or flight level of that aircraft, as the case may be, by reference to an altimeter that is set, when operating below 18,000 feet MSL to:

- The current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft;
- If there is no station within the area prescribed in paragraph (a)(1)(i) of this section, the current reported altimeter setting of an appropriate available station;
- In the case of an aircraft not equipped with a radio, the elevation of the departure airport or an appropriate altimeter setting available before departure.

To provide an equivalent level of safety, the Iris+ autopilot calculates the reference altitude (ground level) with the on-board GPS during the pre-flight tests. The GPS and barometer data are then used to calculate the altitude in-flight.

14 C.F.R. § 91.151(a): Fuel Requirements for Flight in VFR Conditions

The regulation provides that no person may begin a flight in an airplane under day-VFR conditions unless there is enough fuel to fly to the first point of intended landing and to fly after that for at least 30 minutes.

Given the area of operation for the Iris+, Steve Fincher Photography believes that an equivalent level of safety is already achieved with the specific procedure preventing the Iris+to accept a take-off order if the battery level is below a given value. Moreover, 3DR has integrated "low" and "critical" battery level warnings and implemented a "return to Home" (and "Go Land") actions in these situations.

14 C.F.R. § 91.203 (a) & (b): Carrying Civil Aircraft Certification and Registration

This regulation provides as follows:

- No person may operate a civil aircraft unless it has an appropriate and current airworthiness certificate.
- No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under §91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

The Iris+ weighs only 5 pounds. As such, there is no ability or place to carry certification and registration documents or to display them on the UAS.

To obtain an equivalent level of safety and meet the intent of 91.203, we also propose that documents deemed appropriate for this aircraft by the FAA will be co-located with the operator at the ground control station in the flight box and available for inspection upon request. In order to identify the aircraft, we propose that a copy of the AMA membership of the operator will be permanently affixed to the Iris+ on the upper side of the body.

14 CFR Subpart E (91.401 - 91.417) - Maintenance, Preventive Maintenance, and Alterations

The regulation provides that the operator is primarily responsible for maintaining the aircraft in an airworthy condition, including compliance with Parts 39 and 43. Paragraphs 91.407 and 91.409 require the aircraft to be "approved for return to service by a person authorized under 43.7" after maintenance and inspection. Section 91.409 requires an annual inspection for the issuance of an airworthiness certificate. Section 91.417 requires the owner or operator to keep records showing certain maintenance work that has been accomplished by certificated mechanics, under Part 43, or licensed pilots and records of approval of the aircraft for return to service.

3DR proposes that the maintenance of the Iris+ will be accomplished by the owner or the operator according to the user manual. An equivalent level of safety will be achieved because the Iris+ is small in size, it is not a complex mechanical device and does carry any external payload. Moreover, the operator is the person most familiar with the aircraft and is best suited to maintain the aircraft in an airworthy condition and to ensure an equivalent level of safety. Finally, before every flight, the Iris+ automatically runs a sequence of pre-flight tests to make sure that every sensor and every critical part is operating properly. If a problem is detected, the Iris+ will not be able to be switched-on and a message error is displayed on the main screen. The owner or the operator can then refer to the user manual to troubleshoot this issue. Several parts of the Iris+ are easily interchangeable (propellers, wings), which allows the operator to make sure the wings and propulsion system are always airworthy when a mission is initiated.

Satisfaction of the criteria provided in Section 333 of the Reform Act of 2012--size, weight, speed, operating capabilities, proximity to airports and populated areas and operation within visual line of sight and national security – provide more than adequate justification for the grant of the requested exemptions allowing commercial operation of applicant's sUAS in the commercial photography industry.

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