



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

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

July 28, 2015

Exemption No. 12198
Regulatory Docket No. FAA-2015-1760

Mr. Willis Chung
Sclera Digital, Inc.
1100 Wilshire Boulevard #1803
Los Angeles, CA 90017

Dear Mr. Chung:

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

By letter dated May 5, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Sclera Digital, Inc. (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct closed-set filming for the motion picture and television industry.

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

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

Airworthiness Certification

The UAS proposed by the petitioner is a DJI Inspire 1.

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 closed set motion picture and filming. 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, Sclera Digital, Inc. 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 closed set motion picture and filming. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Sclera Digital, Inc. 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 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 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.nts.gov.

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

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.
30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day

notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:

- a. Dates and times for all flights;
- b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
- c. Name and phone number of the person responsible for the on-scene operation of the UAS;
- d. Make, model, and serial or N-Number of UAS to be used;
- e. Name and certificate number of UAS PICs involved in the aerial filming;
- f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
- g. Signature of exemption holder or representative; and
- h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

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

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

This exemption terminates on July 31, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/

John S. Duncan

Director, Flight Standards Service

Enclosures

Willis Chung
Sclera Digital, Inc.
1100 Wilshire Blvd., #1803
Los Angeles, CA 90017
(818) 835-3128
willisxchung@gmail.com

**Petition for Exemption
Federal Aviation Administration**

Re: Unmanned Aircraft System use in NAS for compensation

Petitioner, Sclera Digital, Inc. (“Sclera”), hereby petitions the Federal Aviation Administration (“FAA”) for an exemption from Part 21; §§ 45.23(b); 61.113(a) and (b); 91.7(a); 91.9(b)(2); 91.103; 91.109; 91.119; 91.121; 91.151(a); 91.203(a) and (b); 91.405(a); 91.407(a)(1); 91.409(a)(2); and 91.417(a) and (b) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would allow operation of unmanned aircraft systems (UAS) for the purpose of closed-set filming for the motion picture and television industry.

The terms and conditions of Grant of Exemption No. 11062 (Petition of Astraeus Aerial, Regulatory Docket No. FAA-2014-0352) are hereby incorporated by this reference as if fully set for herein with the exception of the mandatory Class 3 medical certificate.

Petitioner hereby proposes the following terms and conditions for the grant of the exemption requested herein:

The UAS proposed by the petitioner, the **Inspire 1** is an unmanned four-rotor, four-motor “quadcopter” manufactured by DJI. The UAS is under 45 pounds, will be flown at all times under 300 feet AGL as measured by the UAS’ on-board GPS system, will be kept within line of sight of the Pilot in Command (“PIC”), will have a separate safety Visual Observer (“VO”) at all times in communication with and within 5 feet of the PIC, will be flown at all times at speeds of 40 miles per hour or less, will be flown at all times during daylight hours, always using Visual Flight Rules (“VFR”) and within visual line of sight (“VLOS”), and never using first person view by the PIC. The PIC will be able to use human vision unaided by any device other than corrective lenses as specified by a current state-issued driver’s license. The PIC will provide the local Flight Standards District Office (“FSDO”) with notice of all of flight operations no less than 72 hours in advance of any intended flight. Each PIC will have over 400 hours of logged flight experience in the same UAS type or model, including 10 take offs and landings within the prior 30 days. The PIC will conduct a full and complete inspection of aircraft prior to the initial takeoff of each flight.

Public Benefit

Regular helicopters are, except as provided in Section 91.119, not allowed to fly less than 500 feet AGL. UAS on the other hand are best when flown between 50 and 300 feet AGL and in fact the best video quality is 50 to 100 feet. A large manned helicopter could also cause very serious damage to persons or property on the ground and even to pilots and passengers inside a manned helicopter. A UAS weighing in at approximately six pounds would not be nearly as hazardous. Additionally, a regular helicopter is normally larger than a standard automobile whereas the UAS is smaller than a basketball. It is substantially safer for the public to have a UAS accomplish the job of aerial photography than a manned helicopter just based on size alone.

In addition, the UAS can be operated for substantially less costs than a regular manned helicopter. The public is significantly served by reducing the cost of videography via UAS aircraft.

Proposed Operational Parameters

The PIC will follow the manufacturer's UAS aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements. When unavailable, aircraft maintenance/component/overhaul, replacement, and inspection/maintenance requirements will be established and identified in the operator's manual. At a minimum, the following will be included in the operator's manual:

1. Actuators / Servos
2. Transmission (single rotor)
3. Powerplant (motors)
4. Propellers
5. Electronic speed controller
6. Batteries
7. Mechanical dynamic components (single rotor)
8. Remote command and control
9. Ground control station (if used)
10. Any other components as determined by the operator

Prior to each flight the PIC will inspect the UAS to ensure it is in a condition for safe flight. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft will be prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight. The Ground Control Station, if utilized, will be included in the preflight inspection. All maintenance and alterations will be properly documented in the aircraft records.

Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics (e.g. replacement of a flight critical component) will undergo a functional test flight in accordance with the operator's manual. The PIC who conducts the functional test flight will make an entry in the UAS aircraft records of the flight. The requirements and procedures for a functional test flight and aircraft record entry must be added to the operator's manual.

Prior to operations conducted for the purpose of motion picture filming (or similar operations), the PIC must have accumulated and logged, in a manner consistent with 14 CFR § 61.51 (b), a minimum of five hours as a UAS pilot operating the make and model of UAS to be utilized for operations under the exemption and three take-offs and three landings in the preceding 90 days. Training, proficiency, experience-building, and take-off and landing currency flights can be conducted under this grant of exemption to accomplish the required flight time and 90 day currency. During training, proficiency, experience-building, and take-off and landing currency flights all persons not essential for flight operations are considered non-participants, and the PIC must operate the UA with appropriate distance from non-participants in accordance with 14 CFR § 91.119.

Prior to any flight operations authorized by this grant of exemption, the PIC and VO must have successfully completed a qualification process, as outlined in the operator's manual. As this is a requirement stipulated by the operator, the test must be developed and implemented by a qualified person designated at the sole discretion of the operator. A record of completion of this qualification process must be documented and made available to the Administrator of the FAA (the "Administrator") upon request.

Prior to operations conducted for the purpose of motion picture filming (or similar operations), a flight demonstration, administered by an operator-approved and qualified pilot must be successfully completed and documented. This documentation must be available for review upon request by the Administrator. Because the knowledge and airmanship test qualifications have been developed by the operator, and there are no established practical test standards that support a jurisdictional FAA FSDO evaluation and approval of company designated examiners, the petitioner will conduct these tests in accordance with the operator's manual.

The UAS will not be operated directly over any person, except authorized and consenting production personnel, below an altitude that is hazardous to persons or property on the surface in the event of a UAS failure or emergency.

Regarding the distance from participating persons, the operator's manual has safety mitigations for authorized and consenting production personnel. At all times, those persons must be essential to the closed-set film operations. Because these procedures are specific to participating persons, no further FSDO or Aviation Safety Inspector ("ASI") approval is necessary for reductions to the distances specified in the petitioner's manuals. This is consistent with the manned aircraft procedures described in FAA Order 8900.1, Volume 3, Chapter 8, Section 1 *Issue a Certificate of Waiver for Motion Picture and Television Filming* (the "Order").

Regarding distance from non-participating persons, the operator will ensure that no persons are allowed within 500 feet of the area except those consenting to be involved and necessary for the filming production. This provision may be reduced to no less than 200 feet if it would not adversely affect safety and the Administrator has approved it. For example, an equivalent level of safety may be determined by an aviation safety inspector's evaluation of the filming production area to note terrain features, obstructions, buildings, safety barriers, etc. Such

barriers may protect non-participating persons (e.g. observers, the public, news media) from debris in the event of an accident. This is also consistent with the Order.

If the UAS loses communications or loses its GPS signal, the UAS must return to a pre-determined location within the security perimeter and land or be recovered in accordance with the operator's manual. The proposed UAS, the DJI Inspire 1, is designed to increase altitude 20 meters or 60 feet upon loss of signal between the ground controller held by the pilot and the aircraft itself. Upon reaching the higher altitude (a safety feature to avoid people, trees and buildings), the UAS will return to its original take-off point of origin and slowly land. It is critically important for the pilot to calibrate the aircraft prior to its flight. The calibration procedure sets the compass and lets the aircraft's onboard computer know where it is located on Earth. The UAS also has a Flytrex black box system installed which tracks every flight so if a loss of link to the aircraft from the controller ever occurs, then the pilot can follow and retrieve the UAS when it lands. Additional details concerning lost-link failsafes can be found in the Operator's Manual.

The PIC will abort the flight in the event of unpredicted obstacles or emergencies in accordance with the operator's manual.

Each UAS operation must be completed within 30 minutes flight time or with 25% battery power remaining, whichever occurs first.

The PIC will request a Notice to Airmen ("NOTAM") not more than 72 and not less than 48 hours prior to the operation.

The operator will develop procedures to document and maintain a record of the UAS maintenance, preventative maintenance, alterations, status of replacement/overhaul component parts, and the total time in service of the UAS. These procedures will be added to the operator's manual.

Each UAS operated under this exemption will comply with all manufacturer Safety Bulletins.

The operator must develop UAS technician qualification criteria. These criteria must be added to the operator's manual.

The preflight inspection section in the operator's manual must be amended to include the following requirement: The preflight inspection must account for all discrepancies, i.e. inoperable components, items, or equipment, not covered in the relevant preflight inspection sections of the operator's manual.

Before conducting operations, the radio frequency spectrum used for operation and control of the UAS must comply with the Federal Communications Commission ("FCC") or other appropriate government oversight agency requirements.

At least three days before scheduled filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local 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 filming production 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 filming production event
- 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

The documents required under 14 CFR § 91.9 and § 91.203 will 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.

The UAS will remain clear and yield the right of way to all other manned operations and activities at all times (including, but not limited to, ultralight vehicles, parachute activities, parasailing activities, hang gliders, etc.).

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

The UAS will be operated by the PIC from any moving device or vehicle.

The UA will 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.

The UA will not operate in Class B, C, or D airspace without written approval from the FAA. The UA will not operate within 5 nautical miles of the geographic center of a non-towered airport as denoted on a current FAA-published aeronautical chart unless a letter of agreement with that airport’s management is obtained, and the operation is conducted in accordance with a NOTAM as required by the operator’s COA. The letter of agreement with the airport management must be made available to the Administrator upon request.

Any 1) incident, 2) accident, or 3) 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 UAS Integration Office (AFS-80) within 24 hours. Such accidents must be reported to the National Transportation Safety Board (“NTSB”) per instructions contained on the NTSB Web site: www.nts.gov. Further flight operations may not be conducted until the incident, accident, or transgression is reviewed by AFS-80 and authorization to resume operations is provided.

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

The Federal Aviation Administration by and through its authorized representative is requested to approve this petition based on the above terms and conditions for a certificate of authority and certificate of exemption to operate within the above parameters for compensation or hire within the United States National Air Space.

Respectfully submitted:

Willis Chung