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

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

CORRECTED COPY

The FAA is reissuing the April 8, 2015, grant of exemption of Exemption No. 11301. A correction was made to clarify the aircraft that the operator is authorized to use under this exemption. Below is the amended Exemption No. 11301that includes the aforementioned change. We made the correction in our records as of June 11, 2015.

April 8, 2015

Exemption No. 11301
Regulatory Docket No. FAA−2014−1024

Mr. Clayton L. Mounger
Gulf Coast Unmanned Aerial Services, LLC
4490 Blanche Noyes
Baton Rouge Metropolitan Airport
Baton Rouge, LA 70807

Dear Mr. Mounger:

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.

The Basis for Our Decision

By letter dated December 8, 2014, you petitioned the Federal Aviation Administration (FAA) on behalf of Gulf Coast Unmanned Aerial Services, LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial photography and videography for agricultural inspections and flight training.

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 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. However, the FAA received one comment opposing the petition. In granting this exemption, the FAA has determined that the proposed operations can safely be conducted under the conditions and limitations of this exemption. As with exemptions issued to Aeryon Lab, Astraeus Aerial, Clayco, Inc., and VDOS Global, LLC, failure to comply with the document's conditions and limitations is grounds for immediate suspension or rescission of the exemption.

Airworthiness Certification

The UAS proposed by the petitioner are the DJI Phantom 2 and DJI Inspire 1.

The petitioner requested relief from 14 CFR part 21, C*ertification 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, 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. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption No. 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 Lab, 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, Gulf Coast Unmanned Aerial Services, LLC is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Gulf Coast Unmanned Aerial Services, LLC is hereafter referred to as the operator.

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

1. Operations authorized by this grant of exemption are limited to the DJI Phantom 2 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 April 30, 2017, unless sooner superseded or rescinded.

Sincerely,

/s/
John Barbagallo
Acting Deputy Director, Flight Standards Service

GULF COAST UAS
UNMANNED AERIAL SERVICES

December 8, 2014

U. S. Department of Transportation
Docket Operations
West Building Ground Floor, Room W12-140
1200 New Jersey Ave., SE
Washington, DC 20590

Electronically Submitted via www.regulations.gov

Regarding:

Exemption Request Pursuant To Section 333 of the FAA Reform Act of 2012 and Part 11 of the Federal Aviation Regulations from 14 CFR Part 21; 61.113(a) and (b); 91.103; 91.109(c); 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).

Dear Sir or Madam:

Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 (Reform Act) and 14 CFR Part 11, Gulf Coast Unmanned Aerial Services, LLC (GCUAS) which is an owner and operator of Small Unmanned Aircraft Systems (sUAS) equipped to conduct commercial aerial photography and videography for specific Agricultural Inspection and sUAS Aircraft Flight Training hereby applies for an exemption from the listed Federal Aviation Regulations (FAR) to allow commercial operation of its sUAS, so long as such operations are conducted within and under the conditions outlined herein or as may be established by the FAA as required by Section 333.

The Reform Act gives the Secretary of Transportation the authority to determine if certain sUAS may operate safely in the national airspace system (NAS) before completion of the FAA's plan and rulemaking to integrate sUAS into the NAS. The Reform Act directs the Secretary to consider which types of sUAS as a result of their size, weight, speed, operational capability, proximity to airports and populated areas, and operation within visual line of sight do not create a hazard to users of the national airspace or a threat to national security. If the Secretary determines that such vehicles may operate safely in the NAS, the Secretary "shall establish requirements for the safe operation of such aircraft."

The granting of this exemption request will provide immediate benefit to both the agricultural and aircraft flight training industries by authorizing highly controlled sUAS operations within Class G airspace, at or below 400 feet above ground level (AGL), in line of sight of an FAA Certificated Private Pilot during daylight hours and above controlled privately owned and operated property.

GCUAS's sUAS shall weigh less than 10 pounds including the payload. They will operate at no more than 50 knots and have the capability to hover, and move vertically and horizontally simultaneously.

Operations would be conducted above privately owned and operated properties, with the consent of the owner/operator. GCUAS operations will be performed by professional pilots; this will insure that the sUAS will **"*not create a hazard to users of the national airspace system or the public.*"**

The grant of this exemption request is in the public interest, does not create a hazard to users of the NAS or the public, or pose a threat to national security.

In the following pages GCUAS addresses all areas of concern to include;

- Equivalent levels of safety
- Exemptions requested

The name and address of the applicant is:

Gulf Coast Unmanned Aerial Services, LLC (GCUAS)
Attention: Clayton L. Mounger
Phone: (989) 859-6737
Email: info@gulfcoastuas.com
Address: 4490 Blanche Noyes
Baton Rouge Metropolitan Airport
Baton Rouge, LA 70807

GCUAS appreciates your consideration in this matter.

Best Regards,

Clayton L. Mounger

Clayton L. Mounger
President
Gulf Coast Unmanned Aerial Services

Included in this Exemption Letter - Exhibit A

- Regulations for which exemptions are requested

To follow this Exemption Letter and/or on request:

- GCUAS Operating Manual
  - GCUAS Aircraft Inspection Program
  - GCUAS Training Syllabus
- GCUAS Civil COA
- Aircraft Manufacturer's Users Guide's

Agricultural Inspection by sUAS serves the Public Interest

- SUAS inspection is of higher quality, more reliable, and can be reviewed in real time. SUAS inspections allow for the collection, dissemination and permanent storage of photos and videos of agricultural inspections.
- SUAS inspection is more efficient and less costly.
- SUAS inspection is safer than traditional manned commercial aircraft. SUAS's are less likely to cause damage to property or life in the event of an accident.

Professional Flight Training by sUAS serves the Public Interest

- SUAS integration into the NAS without proper flight training is inherently dangerous.
- SUAS pilot flight training and experience can only be obtained as a "hobbyist." There is no professional mechanism where FAA pilots can receive sUAS aircraft flight training and compensation within the United States under the current rules and regulations.
- Providing an avenue of professional flight training for sUAS aircraft in a controlled environment, by professional flight instructors is crucial to the safe integration of sUAS into the NAS.
- Training in rural areas, within Class G airspace, at or below 400 feet AGL, away from any non-participating personnel provides for an increased level of safety.

Gulf Coast Unmanned Aerial Services (GSUAS, LLC.)

- Gulf Coast Unmanned Aerial Services is led by Clayton L. Mounger a graduate of Louisiana State University. The GCUAS's team has extensive experience in the areas of Agriculture and Aircraft Flight Training.
- The GCUAS team's expertise consists of two Airline Transport Pilots, one Commercial Pilot, a Certified Flight Instructor, an Aeronautical Engineer, greater than 30,000 flight hours, and 35 years of aviation management experience.
- GCUAS has extensive knowledge and experience in Commercial Aviation and Remote Controlled (RC) aircraft operations.
- GCUAS sUAS are outfitted for aerial photography and videography for use in Agricultural Inspection and sUAS Aircraft Flight Training.

GCUAS Experience

As professional pilots, GCUAS understands safety is paramount and will always hold **Safety** ahead of any commercial endeavor.

- Individuals within GCUAS have only operated sUAS as hobbyists. To date, GCUAS members have not engaged in any commercial activity to ensure it is in compliance with any applicable FARs or local, state, and federal laws.

- GCUAS has a detailed sUAS Operating Manual which includes a Safety Management System (SMS), Aircraft Inspection Program and Training Syllabus that it shall follow, should this exemption be approved.

GCUAS sUAS Description

GCUAS intendeds to operate DJI sUAS multirotor aircraft for the purpose of obtaining photographs and video for agricultural inspection and sUAS aircraft flight training.

These aircraft have fail safe features to include geo fencing and lost link return home capability. DJI is the manufacturer of multirotors weighing less than 25 pounds and has developed technology that will enhance safe sUAS operations within the NAS.

DJI Phantom

Model		Phantom	
Weight (Battery Included)		1242 g	43.8 ounces
			2.7 pounds
Hovering Accuracy	**Vertical:**	0.5 m	1.6 feet
	Horizontal:	2.5 m	8.2 feet
Max Angular Velocity	**Yaw:**	200°/s	
Max Tilt Angle		35°	
Max Ascent Speed		6 m/s	19.7 feet/s
Max Descent Speed		2 m/s	6.7 feet/s
Max Speed		22 m/s	49.2 feet/s
Max Flight Time		25 minutes	
Operating Temperature Range		-10° to 40° C	
Dimensions		350x350 mm	14x14 inches

DJI Inspire

Model		T600	
Weight (Battery Included)		2935 g	103.5 ounces
			6.5 pounds
Hovering Accuracy	**Vertical:**	0.5 m	1.6 feet
	Horizontal:	2.5 m	8.2 feet
Max Angular Velocity	**Yaw:**	150°/s	
Max Tilt Angle		35°	
Max Ascent Speed		5 m/s	16.4 feet/s
Max Descent Speed		4 m/s	13.1 feet/s
Max Speed		22 m/s	72.2 feet/s
Max Flight Time		18 minutes	
Operating Temperature Range		-10° to 40° C	
Dimensions		438x451x301 mm	18x18x12 inches

Aircraft and an Equivalent Level of Safety

GCUAS proposes that the exemption requested applies to civil aircraft that have the characteristics and that operate with the limitations listed herein.

These limitations provide for at least an equivalent or higher level of safety to operations under the current regulatory structure because the proposed operations represent a safety enhancement to the already safe operations conducted with conventional aircraft.

This Exemption Request is for Use of sUAS subject to Extensive Operational and Safety Requirements

These limitations and conditions to which GCUAS agrees to be bound when conducting commercial operations under an FAA issued exemption at a minimum include:

Safety

A. The sUAS Pilot in Command (PIC) shall possess at a minimum, a private pilot certificate and current third-class medical certificate.

   i. The PIC shall also meet the flight review requirements specified in 14 CFR §61.56 in an aircraft in which the PIC is rated on their pilot certificate.

ii. The PIC shall be trained in the operation of the specific make and model of the sUAS being piloted and successfully completed all training required.

iii. The PIC shall have accumulated and logged, in a manner consistent with 14 CFR §61.51 (b), a minimum of 200 flight cycles and 25 hours of total time as a sUAS rotorcraft pilot and at least five hours logged as a sUAS pilot with a similar sUAS type (multirotor or helicopter). Prior documented flight experience that was obtained in compliance with applicable regulations may satisfy this requirement.

iv. The PIC shall have accumulated and logged, in a manner consistent with 14 CFR §61.51 (b), a minimum of five hours as sUAS pilot operating the make and model of sUAS to be utilized for operations under the exemption and three take-offs and three landings in the preceding 90 days.

v. Training, proficiency, and experience-building flights can also be conducted under this grant of exemption to accomplish the required flight cycles and flight time.

1. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered non-participants, and the PIC must operate the sUAS with appropriate distance from non-participants in accordance with 14 CFR §91.119.

B. The sUAS Safety Observer (SO) shall meet all training requirements and be responsible for all of his/her duties as set forth by GCUAS sUAS Operating Manual.

C. The PIC and SO will be designated before each flight

i. Minimum crew for each flight operation will consist of the sUAS PIC and SO.

D. The PIC and SO shall always be within visual line of sight (VLOS) of each other and in direct verbal communication at all times.

E. Safety Briefings shall be conducted before each day's activities to include, but not limited to:

i. Designated roles of PIC and SO

ii. Risk Management and Mitigation

SUAS Specifications and Design:

A. All sUAS flown under this exemption shall be less than 10 pounds including aircraft and payload. This exemption requests permission only with respect to the specific use of the DJI Phantom and Inspire, which weigh less than 10 pounds including payload.

B. The radio frequency spectrum used for operation and control of the sUAS shall comply with the Federal Communications Commission (FCC) or other appropriate government oversight agency requirements.

C. Maximum speed shall be less than 50 knots.

D. The sUAS shall be equipped with Inertial Navigation Sensor(s) and Gyroscopes (IRS/IRU/Accelerometer/MEMS Gyroscopes).

E. The sUAS shall be equipped with a Compass (Magnetometer/Heading Source).

F. The sUAS shall be equipped with a Global Positioning System (GPS) guidance system.

G. The sUAS shall be designed, should it lose communications or lose its GPS signal, to return to a pre-determined location within the Operations Area and land or be recovered in accordance with GCUAS's sUAS Operating Manual.

SUAS Maintenance

A. SUAS shall be maintained in accordance with the manufacturer's recommendations and GCUAS sUAS Operating Manual and Inspection Program.

B. GCUAS will document and maintain a record of the sUAS maintenance, preventative maintenance, alterations, and status of replacement, overhaul component parts, and the total time in service of the sUAS. These records will be maintained at the principle base for operation for the life of the aircraft or as required by Federal Aviation Regulations. See GCUAS sUAS Operating Manual and Inspection Program.

C. GCUAS shall comply with all manufacturer Safety / Service Bulletins or equivalent pertaining to the sUAS aircraft.

D. The PIC shall perform a preflight inspection of the sUAS, controller, and ground control station prior to each flight to ensure it is operational with no discrepancies. If the preflight inspection reveals discrepancies, repairs or maintenance shall be performed prior to flight. The sUAS will only be operated if all systems are operating per manufacture's specifications an in a discrepancies free condition.

E. Maintenance or repairs that may affect the sUAS operation or flight characteristics shall undergo a functional test flight when required in accordance with manufactures recommendations and GCUAS's sUAS Operating Manual. This functional test flight shall be recorded in the sUAS's records. If the functional test flight is completed successfully, the sUAS can be returned to service by the PIC.

F. GCUAS shall follow the manufacturer's sUAS maintenance, overhaul, replacement, inspection, and life limit requirements. When not provided by the manufacturer aircraft maintenance, component, overhaul, replacement, and inspection maintenance requirements shall be established and included in GCUAS's sUAS Operating Manual and Inspection Program.

    i. At a minimum the following will be meet:
        1. Actuators / Servos
        2. Powerplant(s) (motors)
        3. Propellers
        4. Electronic speed controller(s)
        5. Batteries
        6. Remote controllers and Ground control station

G. All sUAS shall 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, except with respect to the size of the markings. Markings shall be as large as practicable.

Permissions and Permitting

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

B. At least three days before a scheduled operational flight, GCUAS shall submit a written plan of activities to the local flight standards district office (FSDO) with jurisdiction over the area of the proposed flight. The 3-day notification may be waived with the concurrence of the FSDO.

    i. The plan of activities shall include at least the following:

        1. Dates and times for all requested flights
        2. Name and phone number of GCUAS sUAS Flight Operations
        3. Name, certificate, phone number of the PIC responsible
        4. Make, model, and serial and N-number of sUAS to be used

5. Statement from GCUAS that it will be operating on approved privately owned and operated property; the list of those who gave permission shall be made available to the inspector upon request.
6. Description of the flight activity, including maps or diagrams of any area over which flights will be conducted, the relationship of that area to any nearby city, town, etc., and the altitudes essential to accomplish the operation
7. Signature of exemption-holder or representative

C. Documents required under 14 CFR §91.9 and §91.203 shall be readily available to the PIC any time the aircraft is in operation. These documents shall be made available to the Administrator or any law enforcement official upon request.

D. GCUAS shall obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under this grant of exemption.

E. GCUAS shall also request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation.

F. GCUAS shall obtain the consent of all persons involved in the operation and ensure that only consenting persons be allowed within 500 feet of the Operations Area.

Operations

A. The sUAS shall not operate within 5 nautical miles of the geographic center of any airport as denoted on the 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. This letter of agreement with the airport management shall be made available to the Administrator upon request.

B. The sUAS will only operate within the lateral boundaries of approved privately owned and operated property. An Operations Area within those boundaries will be established for each flight. These areas will be free of unnecessary hazards or risks and non-participating personnel.

    i. The sUAS shall only operate within a pre-defined Operations Area that shall be thoroughly inspected by the PIC for buildings, overhangs, obstacles, wires, poles, people, vehicles, sun angle, shadows, glare, reflective surfaces, clouds, smoke, and terrain among other potential hazards.

C. Flights shall be conducted under day visual meteorological conditions (VMC).

   i. In addition, the sUAS shall 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.

   ii. SUAS operations shall **not** be conducted during night, as defined in 14 CFR §1.1.

   iii. Flights shall **not** be conducted under special visual flight rules (SVFR).

D. Flights shall be operated at an altitude at or below 400 feet AGL, as indicated by the procedures specified in GCUAS's sUAS Operating Manual.

E. The PIC shall be prohibited from operating the sUAS from any moving device or vehicle.

F. The sUAS shall be operated within VLOS of the PIC.

   i. The PIC shall maintain VLOS without the aid of telescopes, cameras or other devices.

   ii. The PIC will maintain VLOS with their own vision, which includes the use of eyeglasses or corrective lenses as specified on the PIC's medical certificate.

G. The sUAS shall remain clear and yield the right of way to manned operations and activities at all times including, but not limited to, ultralight vehicles, parachute activities, parasailing activities, hang gliders, etc.

H. GCUAS will require the PIC and SO to have successfully completed a qualification process which will include ground and flight training, as outlined in the GCUAS sUAS Operating Manual.

I. The PIC's primary responsibility while in flight is the safe operation of the sUAS.

SUAS Flight Time and Flight Durations

A. DJI Phantom operations shall be completed within 25 minutes flight time or with 25% battery power remaining whichever occurs first.

B. DJI Inspire operations shall be completed within 18 minutes flight time or with 25% battery power remaining whichever occurs first.

Exhibit A

Regulations for Which Exemptions are Requested

Unless otherwise requesting an exemption, GCUAS, the PIC, the SO, and the sUAS shall comply with all applicable parts of 14 CFR including, but not limited to, Parts 45, 47, 61, and 91.

GCUAS is requesting exemptions from the following Federal Aviation Regulations to the extent necessary to enable the requested sUAS operations for the reasons detailed below.

Relief sought from 14 CFR	GCUAS Statement
21	Stated Below
61.113(a) and (b)	Stated Below
91.103	Stated Below
91.119(c)	Stated Below
91.121	Stated Below
91.151(a)(1)	Stated Below
91.405(a)	Stated Below
91.407(a)(1)	Stated Below
91.409(a)(1) and (2)	Stated Below
91.417(a) and (b)	Stated Below

14 CFR 21 – Requirements to Secure Airworthiness Certificates

1. Certificate exemptions should be given because size, weight, and operation areas of the sUAS meet the level of safety necessary for exemption under Section 333 of the Reform Act.

2. FAA has the authority to exempt aircraft from airworthiness certificate requirements under the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act.

14 CFR 61.113 (a) and (b) – Private Pilot Privileges and Limitations; Pilot in Command

1. Due to the fact that there are no standards for private or commercial sUAS operations, GCUAS requests to utilize at least private pilots with a third class medical in support of its own operations.

2. Knowledge of flight characteristics and the Federal Aviation Regulations (FARs), along with the ability to physically manipulate the controls of the sUAS are the critical aspects of the requested operation. GCUAS feels this can be accomplished by a private pilot that has specific training on the sUAS aircraft and operates in accordance with the GCUAS sUAS Operating Manual, Federal Aviation Regulations, local, state and federal laws.

3. The risks associated with the operation of a sUAS are so diminished from the level of risk associated with commercial aviation operations contemplated by Part 61 when drafted, that allowing operations of the sUAS as requested with a private pilot as the PIC exceeds the present level of safety achieved by 14 C.F.R. §61.113 (a) & (b).

4. Equivalent or better safety levels will be achieved as there will be no human beings on board the sUAS aircraft.

5. FAA has authority to waive pilot requirements for commercial operations under 49 U.S.C §44701(f).

14 CFR 91.103 – Preflight Action

1. The PIC shall perform a preflight inspection in accordance with the manufacturer's recommendations and the GCUAS sUAS Operating Manual of the controller, ground control station and associated equipment prior to each flight to ensure it is free of all discrepancies.

2. Equivalent safety levels will be met through preparation and compliance according to GCUAS's sUAS Operating Manual; including but not limited to, weather reports, forecasts, wind, temperature, battery requirements and other information, relating to aircraft performance, gross weight, shall be considered.

14 CFR 91.119(c) – Requirements for Minimum Safe Altitudes for Civil Aircraft Operation

1. The sUAS will be operated at or below 400 feet AGL.

2. GCUAS shall obtain the consent of all persons involved in the operation and ensure that only consenting persons be allowed within 500 feet of the Operations Area.

3. The sUAS will only operate within the lateral boundaries of approved privately owned and operated property. An Operations Area within those boundaries will be established for each flight. These areas will be free of unnecessary hazards or risks and non-participating personnel.

4. Given the size, weight, speed, material, and operation of the sUAS aircraft, equivalent levels of safety will be achieved.

14 CFR 91.121 – Altimeter Settings

1. SUAS will not have a barometric altimeter, and may use a GPS altitude read out indication instead, so an exemption may be needed.

2. An equivalent level of safety will be achieved by the operator as the sUAS uses AGL height from its initialization/takeoff point.

14 CFR 91.151 (a) (1) – Fuel Requirements for Flights in VFR Conditions

1. The FAA has previously issued exemptions for fuel requirements in VFR conditions including Exemptions 2689F, 5745, 10673, and 10808.

2. GCUAS feels an equivalent level of safety can be obtained by terminating the flight prior to the following.

Aircraft Fuel (Battery) Requirements

DJI Phantom - 25 minutes or 25% whichever occurs first which allows for 6.2 minutes reserve

DJI Inspire - 18 minutes or 25% whichever occurs first which allows for 4.5 minutes reserve

1. The DJI Phantom and Inspire have a second level of safety that is achieved through the use of an aircraft battery monitoring system. The aircraft system will alert the operator of low battery voltage and return the aircraft to its take off location before battery capacity is depleted.

2. GCUAS will not operate sUAS at night in accordance with 14 CFR 1.1

3. An equivalent level of safety will be achieved because these sUAS are limited in size, operational purposes of the sUAS, and shall only fly above approved privately owned and operated property at or below 400 feet AGL, it does not bear the same risks associated with this section's requirements.

14 CFR 91.405 (a) – Maintenance Required

This section and Part 43 apply only to aircraft with an airworthiness certificate; therefore these sections will not apply.

In the absence of regulatory provisions dealing with sUAS operation for maintenance required. See GCUAS sUAS Operating Manual, Inspection Program and Manufactures Maintenance Recommendations for maintenance required.

1. Maintenance will be accomplished by GCUAS pursuant to the manufacturer's recommendations and GCUAS's sUAS Operating Manual and Inspection Program.

2. Maintenance, preventive maintenance, rebuilding, and alteration will be successfully accomplished by trained personnel only.

3. The GCUAS sUAS Operating Manual and Inspection Program details how to enter worked preformed in the maintenance log for scheduled, unscheduled maintenance or functional test flights that are performed.

4. GCUAS shall only operate its sUAS with all systems functioning per manufactures specification in a discrepancy free condition.

5. These records will be maintained at the principle base for operation for the life of the aircraft or as required by Federal Aviation Regulations.

GCUAS and the Aircraft Manufacturer (DJI) are the most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition. This maintenance process allows for an equivalent level of safety to be achieved due to the limited size, scope and area of operations.

14 CFR 91.407 (a) (1) – Operation after Maintenance, Preventive Maintenance, Rebuilding or Alteration

This section and Part 43 apply only to aircraft with an airworthiness certificate; therefore these sections will not apply.

In the absence of regulatory provisions dealing with sUAS operation after maintenance, preventive maintenance, rebuilding, alteration or functional test flights, GCUAS has developed requirements to address these topics. See GCUAS sUAS Operating Manual, Inspection Program and Manufactures User Guides.

1. Maintenance will be accomplished by GCUAS pursuant to the manufacturer's recommendations and GCUAS's sUAS Operating Manual and Inspection Program.

2. Maintenance, preventive maintenance, rebuilding, and alteration will be successfully accomplished by trained personnel only.

3. Functional test flights will be performed by the PIC when required, the sUAS shall only be returned to service when this functional test flight is successfully completed. If a mechanical issue arises the sUAS can land safely or be recovered within the Operations Area.

4. The GCUAS sUAS Operating Manual details how to enter in the maintenance log scheduled and unscheduled maintenance or functional test flights that are performed.

5. GCUAS shall only operate its sUAS with all systems functioning per manufactures specification in a discrepancy free condition.

6. These records will be maintained at the principle base for operation for the life of the aircraft or as required by Federal Aviation Regulations.

GCUAS and the Aircraft Manufacturer (DJI) are the most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition. These maintenance procedures allow for an equivalent level of safety to be achieved due to the limited size, scope and area of operations.

14 CFR 91.409 (a) (1) and (2) – Inspections

This section and Part 43 apply only to aircraft with an airworthiness certificate; therefore these sections will not apply.

In the absence of regulatory provisions dealing with sUAS inspections, GCUAS has developed requirements to address this topic. See GCUAS sUAS Operating Manual, Inspection Program and the Manufactures User Guides.

1. Maintenance will be accomplished by GCUAS pursuant to the manufacturer's recommendations and GCUAS's sUAS Operating Manual and Inspection Program.

2. Maintenance, preventive maintenance, rebuilding, and alteration will be successfully accomplished by trained personnel only.

3. The GCUAS sUAS Operating Manual details how to enter into the maintenance log all inspections that are performed.

4. Functional test flight will be performed by the PIC when required after inspections, the sUAS shall be returned to service when the flight is successfully completed. If a mechanical issue arises the sUAS can land safely or be recovered within the Operations Area.

5. GCUAS shall only operate its sUAS with all systems functioning per manufactures specification in a discrepancy free condition.

6. These records will be maintained at the principle base for operation for the life of the aircraft or as required by Federal Aviation Regulations.

GCUAS and the Aircraft Manufacturer (DJI) are the most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition. These maintenance inspections allow for an equivalent level of safety to be achieved due to the limited size, scope and area of operations.

14 CFR 91.417(a) and (b) – Maintenance Records

This section and Part 43 apply only to aircraft with an airworthiness certificate; therefore these sections will not apply.

In the absence of regulatory provisions dealing with sUAS maintenance records, GCUAS has developed requirements to address this topic. See GCUAS sUAS Operating Manual and Inspection Program.

1. Maintenance will be accomplished by GCUAS pursuant to the manufacturer's recommendations and GCUAS's sUAS Operating Manual.

2. Maintenance, preventive maintenance, rebuilding, and alteration maintenance recording keeping will be performed by trained personnel and entered in the respective aircraft maintenance log at completion of each event. The GCUAS sUAS Operating Manual details how entries are to be made in the aircraft maintenance log for scheduled and unscheduled maintenance or functional test flights that are performed.

3. These records will be maintained at the principle base for operation for the life of the aircraft or as required by Federal Aviation Regulations.

GCUAS and the Aircraft Manufacturer (DJI) are the most familiar with the aircraft and best suited to maintain the aircraft in an airworthy condition. These maintenance records allow for an equivalent level of safety to be achieved due to the limited size, scope and area of operations.