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

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

May 22, 2015

Exemption No. 11668
Regulatory Docket No. FAA–2015–0622

Mr. Jarrett C Speith
President/CEO
Sky-Forge Robotics LLC
950 Lincoln Street
Suite 201
Bellingham, WA 98229

Dear Mr. Speith:

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 March 1, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Sky-Forge Robotics LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial imaging for safety, monitoring, training, and remote sensing.

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

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

Airworthiness Certification

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

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. 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, Sky-Forge Robotics 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, Sky-Forge Robotics 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 Inspire 1 and DJI Phantom 2 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 5 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 May 31, 2017, unless sooner superseded or rescinded.

Sincerely,

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

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U.S. Department of Transportation
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Dear Sir or Madam:

Sky-Forge Robotics LLC (SFR) located at the corner of 10th St. and Mill Ave., South Bay Suites Bellingham, WA 98229, and Pursuant to Section 333 of the FAA Modernization and Reform Act of 2012 ("FAA Reform Act") and 14 C.F.R. Part 11, hereby respectfully requests exemptions from several provisions of the Federal Aviation Regulations ("FAR"), to allow commercial operations of its Small Unmanned Aircraft System (UAS) for aerial imaging for safety, monitoring, training, and remote sensing of secured controlled environment sites, so long as such operations are conducted within the conditions outlined herein or as established by the FAA as required by Section 333.

Specifically Section 333 which authorizes the FAA to determine:

1. If certain unmanned aircraft systems, if any, 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 system or the public or pose a threat to national security; and

2. Whether a certificate of waiver, certificate of authorization, or airworthiness certification under section 44704 of title 49, United States Code, is required for the operation of unmanned aircraft systems identified under paragraph (1).

As detailed in the document we and the attached Flight Manual and Operating Instructions, we are writing to request that SFR, LLC, an owner and operator of small unmanned aircraft, be exempted from the Federal Aviation Regulations ("FARs") listed below so that SFR, may operate

its small unmanned aircraft systems ("UAS") commercially in airspace regulated by the Federal Aviation Administration ("FAA"); as 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.

14 C.F.R. Part 21
14 C.F.R. 45.23 (b)
14 C.F.R. 61.113 (a) & (b)
14 C.F.R. 91.7 (a)
14 C.F.R. 91.9 (b)(2)
14 C.F.R. 91.103
14 C.F.R. 91.109
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 (a) & (b)
14 C.F.R. 91.405 (a)
14 C.F.R. 407 (a)(1)
14 C.F.R. 409 (a)(2)
14 C.F.R. 417 (a) & (b)

SFR has been and is actively involved in the education, awareness, training, research, and technical development of UAS/ UAV service applications to provide high definition aerial imagery and remote sensing capabilities with small, unmanned aircraft and lightweight UAS's.

The substance of this request is essentially the same as that granted to ASTRAEUS AERIAL Regulatory Docket No. FAA-2014-0352 and VIKING UNMANNED AERIEL SYSTEMS, INC Regulatory Docket No. FAA–2014–0850 in that SFR is engaged in training, aerial photograph and imaging, and 3d mapping of agriculture and structures using similar lightweight, remote controlled UAS's in remote areas to minimize the need to climb such structures and other high risk activities.

SFR has fully equipped each of its small unmanned aircraft for aerial imaging, primarily for use in the inspection of towers and structures that would otherwise require climbing at great risk to the personnel involved, though given the stability and maneuverability, they may be used by law enforcement personnel, search and rescue and by other first responders for other aerial photography including video and remote sensing.

SFR exemption request would permit its operation of lightweight, unmanned (remotely controlled in line of sight) UAS's in tightly controlled and limited airspace. Predetermined, specifically marked areas of operation, sectioned off locations will allow SFR to operate within

current safety parameters as well as new ones being implemented. As identified, similar lightweight, remote controlled UAS's are legally operated by amateurs with no flight experience, safety plan or controls in place to prevent catastrophe. SFR will dictate precise and repeatable preflight planning, decision making, and operator risk mitigation procedures to mitigate risk to personnel and property.

Granting SFR's request comports with the Secretary of Transportation's (FAA Administrator's) responsibilities to not only integrate UAS's into the national airspace system, but to" ... establish requirements for the safe operation of such aircraft systems [UAS's] in the national airspace system" under Section 333 of the Reform Act. Further, SFR will conduct its operations in compliance with the protocols described herein or as otherwise established by the FAA.

The Extent of Relief SFR Seeks and the Reason It Seeks Such Relief:

SFR submits this application in accordance with the Reform Act, 112 P.L. 95 §§ 331-334, seeking relief from any currently applicable FAR's operating to prevent SFR contemplated commercial inspections, research and other flight operations within the national airspace system. The Reform Act in Section 332 provides for such integration of civil unmanned aircraft systems into our national airspace system as it is in the public's interest to do so. SFR lightweight UAS's meet the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of SFR lightweight UAS's are expressly contemplated by the Reform Act. SFR would like to operate its lightweight UAS's prior to the time period by which the Reform Act requires the FAA to promulgate rules governing such craft. The Reform Act guides the Secretary in determining the types of UAS's that may operate safely in our national airspace system. Considerations include:

The weight, size, speed and overall capabilities of the UAS; Whether the UAS will be operated near airports or populated areas; and, Whether the UAS will be operated by line of sight.

112 P.L. 95 § 333 (a). Each of these items mitigates in favor of an exemption for SFR.

SFR UAS's uses primarily multi counter-rotating propellers for extreme balance, control and stability. They each typically weigh less than 55 pounds, including camera or other equipment. Each of SFR's small unmanned aircraft is designed to primarily hover in place and operate at less than a 50 knot maximum speed. They are capable of vertical and horizontal operations but operate only within the line of sight of the remote control pilot. In addition to the remote control pilot, SFR uses a camera operator, such that, at minimum, two SFR personnel govern the safe flight of an SFR aircraft at all times.

Utilizing battery power and no combustible fuels, flights generally last between five and twenty minutes. SFR does not operate its UAS's with less than twenty five percent battery capacity. Safety systems in place include a GPS mode that allows SFR UAS's to hover in place if

communication with the radio control pilot is lost and then slowly descend the UAS at twenty five percent battery capacity. Further, SFR fleet is programmed, in some instances, to slowly follow a predetermined set of waypoints to return to a safety point if communications are lost or battery drops below twenty five percent.

SFR does not operate its UAS's near airports and generally does not operate them near populated areas when conducting training, inspections, or imaging activities.

SFR operation of its fleet of small unmanned aircraft will not "create a hazard to users of the national airspace system or the public." 112 P. L. 95 § 3 3 3 (b). Given the small size and weight of SFR UAS's, combined with their operation in cordoned off and well-controlled areas, SFR fleet falls within Congress's contemplated safety zone when it promulgated the Reform Act and the corresponding directive to integrate UAS's into the national airspace system. Indeed, SFR UAS's have a demonstrable safety record and do not pose any threat to the general public or national security. The FAA has the authority to issue the exemption to SFR pursuant to the Federal Aviation Act, 85 P.L. 726 (1958), as amended (the "Act").

Commercial and Public Benefits Granting SFR exemption request furthers the public interest. First, Congress has already pronounced that it is in the public's interest to integrate commercially flown UAS's into the national airspace system, hence the passing of the Reform Act. Second, SFR conducts research into safe UAS operations every time it flies one of its UAS's. Flight data, visual inspections, recorded observations and flight analyses are compiled to further enhance current safety protocols. Allowing SFR to log more flight time directly relates to its research and its ability to further enhance current safety measures. Third, the public has an interest in reducing the danger associated with current aerial inspection methods, namely, resorting to physically climbing high or compromised structures to inspect.

Granting SFR exemption request substantially furthers the public's interest in ways known and currently unknown. Permitting SFR to immediately fly within the United States furthers advancements in publicly usable technologies or advancements in equipment available to law enforcement personnel and first responders with state of the art equipment that does not cost millions of dollars.

Reasons Why SFR Exemption Will Not Adversely Affect Safety Or How The Exemption Will Provide a Level of Safety At Least Equal To Existing Rule:

SFR exemption will not adversely affect safety. Quite the contrary, for the various reasons stated, permitting SFR to log more flight time will allow SFR to innovate and implement new and as of yet undiscovered safety protocols.

SFR UAS's weigh less than 55 pounds complete with cameras and sensors

SFR only operates its UAS's below 400 feet;

SFR UAS's only operate for 5-45 minutes per flight;

SFR lands its UAS's when they reach 25% battery power;

SFR remote control pilots operate SFR UAS's by Visual Line of Sight (VSOL)

SFR remote control pilots have video backup should they somehow lose sight of the UAS; SFR staffs each flight with a remote control pilot and camera operator;

SFR UAS's have GPS flight modes whereby they hover and then slowly land if communication with the remote control pilot is lost or battery power is below25%;

SFR actively analyses electronic flight data and other sources of information to constantly update and enhance safety protocols;

SFR only operates in secured areas that are strictly controlled, are away from airports and populated areas;

SFR conducts extensive briefings prior to flight, during which safety carries primary importance;

SFR always obtains all necessary permissions and permits prior to operation;

SFR provides a level of safety at least equal to existing rules, and in nearly every instance, greater than existing rules. It is important to note that absent the integration of commercial UAS's into our national airspace system, helicopters are the primary means of aerial photography. While the safety record of such helicopters is remarkably astounding, it is far safer to operate a battery powered lightweight UAS.

First, the potential loss of life is diminished because UAS's carry no people on board and SFR only operates in specific areas away from mass populations. Second, there is no fuel on board a UAS and thus the potential for fire or explosions is greatly diminished. Third, the small size and extreme maneuverability of SFR UAS's allow our remote control pilots to avoid hazards. Fourth the SFR UAS will allow the replacement of helicopters or other small aircraft to conduct similar work in a safer more affordable and environmentally friendly manner. Finally, given their small size and weight, even when close enough to structures or property to capture required images, SFR UAS's present a marked increase in safety over traditional larger aircraft. Accordingly, SFR UAS's have operated and will continue to operate at and above current safety levels.

Equivalent level of safety

14 CFR Part 21, Subpart H: Airworthiness Certificates 14 CFR ₴ 91.203 (a) (1)

14 C.F.R. 45.23 (b) Display of marks; general.

Due to the size and nature of the UAS, it would be impossible to comply with the marking requirements. The equivalent level of safety will be provided to mark the UAS as "Experimental" that is clearly visible to the operator, pilot, or observer. The FAA has issued the following exemptions to this regulation: Exemption No's 10700, 8738, 10167, and 10167A.

14 CFR 61.113(a) & (b): Private pilot privileges and limitations: Pilot in command

Sections 61.113 (a) & (b) limit private pilots to non-commercial operations. Because the UAS will not carry a pilot or passengers, the proposed operations can achieve the equivalent level of safety of current operations by requiring the pilot operating the aircraft to have completed a UAS flight training course specific to SFR operations before flying a UAS. In substitute the FAA approved Private Pilot Ground School or equivalent may be completed as a further equivalent level of safety to this rule. A minimum of 40 hours instructional ground and 10 hours of supervised flight time will be required of any operator prior to commercial application or use. Unlike a conventional aircraft that carries a pilot and passenger the UAS is a remotely controlled with no living occupant or cargo. They are of operation is controlled and restricted, and all flights are planned and coordinated in advance. the risks associated with the operations of the UAS are so diminished from the level of risk associated with the commercial operations contemplated by part 61, that allowing operations of the UAS as requietrsdte with a pilot who has met the minimum requirements exceeds the present level achieved by 14 CFR 61.113 (a) & (b).

14 CFR 91.7 (a): Civil aircraft airworthiness

The regulation requires that no person may operate a civil aircraft unless it is in airworthy condition. As there are no airworthiness certificates issued for the UAS aircraft, should this exemption be granted, no FAA regulatory standard will exist for determining airworthiness. Given the size, of the UAS and requirements contained in the operation manual for use, safety, and maintenance, as well as the use of safety checklists prior to each flight, as set forth, an equivalent level of safety will be provided.

14 CFR 91.9 (b) (2): Civil aircraft Flight manual, marking and placards.

Given the UAS size and configuration, there is no ability to place or carry a flight manual on the aircraft.

The equivalent level of safety will be maintend by keeping the flight manual that the ground control point where the pilot flying the UAS will have immediate access to it. The FAA has issued the following exemptions to this regulation: Exemption No's 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 32827, and 10700.

14 CFR 91.103 Preflight Actions

This regulation requires each pilot in command take certain actions before flight to insure safety of flight. An exemption is needed form this requirement as the pilot will take a separate list of preflight actions, including checking for wheatear conditions flight batter, take of ad and landing clearances, and other actions specified in the SFR preflight checklist. These actions will profcie an equivalent level of safety.

14 CFR 91.109: Flight Instruction

Section 91.103 provides that no person may operate a civil aircraft that is being used for flight instruction unless that aircraft has fully function dual controls.

By design the UAS and remotely piloted aircraft of this configuration do not have fully functional dual controls flight control is accomplished through the use of a control box that communicates with the aircraft via radio communications. The FAA has previolsyul approved exemptions for aircraft without fully funcitonlinal dual controls. See exemption No's 5778K and 9862A. The equivalent level of safety provided by the fact that neither a pilot more passenger will be carried in the aircraft, the ability to control the UAS via radio signal from the control, and by the size and speed of the aircraft.

14 CFR 91.121 Altimeter Settings

An equivalent level of safety will be achieved by the operator by using a GPS altitude readout and proper safety checklist and preflight planning confirming the altitude of launch site prior to flight

14 CFR 91.151 (a) VFR Fuel requirements for flight in VFR

An equivalent level of safety will be achieved by limity flights to 30 minutes or enough battery reserve to ensure the UAS lands at the ground control point with at least 20% battery power remaining (as determined by on board monitoring system and the pilot). Furthermore the UAS can be programed to safety descend and land automatically in the event of loss of communications or battery level is exceeded. Similar exemptions have been granted to other operations, including exemptions 2689F, 5745, 10673, and 10808.

14 CFR 91.203(a) and (b): Carrying civil aircraft certification and registration

The UAS fully loaded weighs no more than 10lbs and is operated without an onboard pilot. Therefore the is no ability to place or carry the certification and registration documents or display them on the UAS.

An equivalent level of safety will be achieved by keeping these documents at the ground control point where the pilot of the UAS will have immediate access to them, the extent they are applicatnle to the UAS. The FAA has issued numerous exemptions to this regulation such as Exemption No's 9565, 9665, 9789, 9789A, 9797, 9797A, 9816A, and 10700.

14 CFR 91.405 (a): 407 (a) (1); 409 (a) (2); 417 (a) & (b): Maintenance Inspections

Given that these sections and Part 43 apply only to aircraft with an airworthiness certificate, these sections will not apply to the SFR UAS. Mainteneatn will be accomplished hty eh operator pursuant to the flight manual and operating handbook. An equivalent level of safety will be achievedbecasue these small UAS are limited in sizes, complexity, and will carry only a small payuleo to operate for specific limited time. If mechanical issues arise the UAS can land safely immediately and will be operating no higher than 400 feet AGL. Preflight inspection will ensure the UAS is in working order and requiremed maintenance will be performer. A flight and maintenance log will be kept with the operator and maintain the aircraft in an airworthy condition to provide the equivalent level of safety.

Respectfully,

Jarrett C Speith
President/CEO Sky-Forge Robotics