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

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

May 21, 2015

Exemption No. 11643
Regulatory Docket No. FAA–2015–0606

Mr. Dennis M. Fisher
President
Rapid Mortgage Company
272 West Central Avenue
Springboro, OH 45066

Dear Mr. Fisher:

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 2, 2015, you petitioned the Federal Aviation Administration (FAA) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial photography, videography, and cinematography to enhance community awareness and to augment real estate videos.

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. However, the FAA received one comment in support of the petition made to the docket.

**Airworthiness Certification**

The UAS proposed by the petitioner is a DJI Phantom 2 Vision+.

In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

**The Basis for Our Decision**

You have requested to use a UAS for aerial data collection. 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, Mr. Dennis M. Fisher 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, Mr. Dennis M. Fisher 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 Vision+ 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

March 2, 2015

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

RE: Petition For Exemption Request Section 333 of the FAA Reform Act of the Federal Aviation Regulations from 14 C.F.R. Part 91.7(a); 91.119; 91.121; 91.151(a); 91.405(a); 91.407(a)(1); 91.409(a)(1)&(2); 91.417(a)&(b)

To whom it concerns,

I, Dennis M. Fisher, President of Rapid Mortgage Company, am writing pursuant to the FAA Modernization and Reform Act of 2012 and the procedures contained within 14 C.F.R. 11, to request that I, Dennis M. Fisher, an FAA licensed Commercial Pilot with ASEL, AMEL, Instrument Airplane and Glider ratings and Flight Instructor ratings in ASEL, Instrument Airplane and Gliders and operator of small unmanned aircraft such as the Phantom 2 Vision +, be exempted from the Federal Aviation Regulations ("FARs") listed below so that I, Dennis M. Fisher on behalf of my company Rapid Mortgage Company, may operate ultra-lightweight unmanned aircraft systems ("UAS") commercially in airspace regulated by the Federal Aviation Administration ("FAA").

As described herein I, Dennis M. Fisher, am a licensed, HUD approved mortgage lender based in the State of Ohio; experienced in flying fixed wing aircraft and gliders for commercial and recreational purposes. I intend to use a Phantom 2 Vision + with a High Definition still and video camera for aerial photography/videography/cinematography to enhance community awareness for those individuals and companies unfamiliar with or desiring a unique perspective of the geography of the community; and augmentation of real estate listing photos and videos following exemption and approval by the FAA, thereby enhancing their research for the area being reviewed.

I have flown various aircraft for over 27 years – all without incident. Additionally, while not rated in helicopters, I have flown helicopters and understand the concepts of rotary flight. Every flight I make is approached with safety in mind. I refuse to compromise my personal minimums in aircraft, and these UAS flights are no different.

My exemption request would permit operation of ultra-lightweight, unmanned (piloted by remote control) UAS(s) in a tightly controlled environment for preplanned flights in areas away from the general public, airports, heliports and vehicular traffic for community videos and within property boundaries for real estate listing videos/photos.

I, Dennis M. Fisher, have developed the appropriate safety protocols and controls to prevent hazards to the public as well as manned aircraft. If deemed appropriate, use of these safety protocols is encouraged to further the safe utilization of ultra-lightweight

UAS's specific to real estate video and photography usage as I, Dennis M. Fisher will retain recorded flight data and other information gained through permitted flight operations to share with the FAA through any reports the FAA may request to assist with safety regulation.

Granting my, Dennis M. Fisher's, request comports with the Secretary of Transportation's (FAA Administrator's) responsibilities and authority 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(c) of the Reform Act specific to the use of UAS's for real estate purposes. Further I, Dennis M. Fisher, will conduct my operations in compliance with the protocols described herein or as otherwise directed by the FAA.

For the reasons stated below I, Dennis M. Fisher, respectfully request the grant of an exemption allowing me to operate ultra-lightweight, remote controlled UAS's for community awareness to benefit/stimulate attraction to our business market area and to enhance real estate listing videos for owners who cannot afford expensive manned aircraft for the same purpose. Both of these purposes promote local economic growth through increased employment and increased tax base. Additionally, the public's safety is kept in mind by avoiding the use of heavier manned aircraft containing combustible fuel posing a potential public hazard.

**I. Contact Information:**

Dennis M. Fisher, President
Rapid Mortgage Company
272 West Central Avenue
Springboro, OH 45066
Office: (937) 748-8888, EXT 301
Mobile: (937) 474-3828
Email: DFisher@RMCBanc.com

**II. The Specific Sections of Title 14 of the Code of Federal Regulations From Which Dennis M. Fisher Requests Exemption are:**

14 C.F.R. 91.7(a)
14 C.F.R. 91.119
14 C.F.R. 91.121
14 C.F.R. 91.151(a)
14 C.F.R. 91.405(a)
14 C.F.R. 91.407(a)
14 C.F.R. 91.409(a) (1) & (2); and,
14 C.F.R. 91.417(a) & (b).

**III. The Extent of Relief Dennis M. Fisher Seeks and the Reason He Seeks Such Relief:**

I, Dennis M. Fisher, submit this application in accordance with the Reform Act, 112 P.L. 95 §§ 331-334, seeking relief from the applicable FARs prohibiting me, Dennis M. Fisher, from performing commercial photographic, cinematic, 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. My, Dennis M. Fisher's, ultra-lightweight UAS meets the definition of "small unmanned aircraft" as defined in Section 331 and therefore the integration of my ultra-lightweight UAS is expressly contemplated by the Reform Act.

I am requesting this exemption to permit the operation of an ultra-lightweight UAS prior to the time period which the Reform Act requires the FAA to promulgate rules governing such craft. Approval of my request will provide direct experience and valuable data for implementation of regulations administered uniformly to all real estate related UAS aerial video and photography.

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's; whether the UAS will be operated near airports or heavily populated areas; and, whether the UAS will be operated by line of sight. 112 P.L. 95 § 333 (a). Each of these items aligns with my, Dennis M. Fisher's request for Exemption. The Phantom 2 Vision + utilizes four (4) counter-rotating propellers for balance, control and stability. The Phantom 2 Vision + UAS is equipped with GPS and auto return safety technology. Weighing less than six (6) pounds (far below the maximum 55 pound limit), including camera and gimbal mount.

I, Dennis M. Fisher, consider safety foremost with each flight. The Phantom 2 Vision + UAS is designed to hover in place via GPS and operate in relatively calm wind conditions. For safety and stability flight operations will not be conducted when winds exceed 10 knots. Built-in safety systems include a GPS mode allowing the Phantom 2 Vision + UAS to hover in place when remote controls are released.

Flight operations will utilize the "Ready To Fly" mode for aerial videography/photography. "Ready To Fly" restricts flight to programmed Special Area Limits, Max Height and Max Radius, further enhancing safety of operations and stability while preventing accidents and hazards. When pilot communication is lost the Phantom 2 Vision + UAS is designed to return to the point of takeoff.

My Exemption request would allow flight operations up to 200' AGL outside of a 2 mile radius from towered airports and 1 mile from non-towered airports; outside of a 3 mile radius from any airport, maximum flight operating altitude will be 400' AGL. I recognize previous exemptions have been granted prohibiting flight operations within 5 nautical

miles of an airport. Given the petitioner's extensive experience as a commercial pilot (in excess of 2,500 hours of flight time) and thorough understanding of traffic patterns and instrument approach minimums, I believe this is a reasonable request that will prevent hazards to aircraft and property while serving the community.

Flight operations will not be conducted over densely populated or congested areas, and at least 500' from non-participating people, vessels, vehicles and structures. Constant vigilance will be maintained for any manned aircraft and the petitioner will be prepared to land/abort immediately to the nearest and safest ground point should a manned aircraft approach, or appear to approach the area of flight operations.

The Phantom 2 Vision + UAS is capable of vertical and horizontal operations, and will be flown only within a visual line of sight. Utilizing battery power rather than combustible fuels, flights are generally expected to last no more than 10-15 minutes, utilizing 40-60% of the Phantom 2 Vision +'s battery capacity. Each flight will utilize a fresh, fully charged battery for each flight; full flight time limit for each battery is 25 minutes as tested. The UAS will not be operated below 40% of battery charge levels to maintain a safe operating reserve, ensuring adequate communication between the PIC remote control and the UAS. Reserve batteries are on hand for each flight to ensure an adequate source of power is available to safely complete each operation.

I, Dennis M. Fisher, am extremely cautious when operating ANY aircraft and have no intention of creating a hazard to other aircraft, property or persons when operating the Phantom 2 Vision + UAS/ultra-lightweight unmanned aircraft. My flight operations will not "create a hazard to users of the national airspace system or the public." 112 P.L. 95 § 333 (b). Given the small size and weight of the Phantom 2 Vision + UAS, it falls well 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.

**IV. How Dennis M. Fisher's Request Will Benefit the Public As A Whole:**

Aerial videography for geographical awareness and real estate marketing has been around for decades through manned fixed wing aircraft and helicopters. For small real estate companies and average homeowners the expense of such aerial videography is cost prohibitive. Typically upscale Realtors or luxury homeowners are in a position to afford such an expense. As a result, the expense of manned aerial photography deprives many homeowners and smaller Realtors of a valuable marketing tool.

Congress has already proclaimed 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. Granting my, Dennis M. Fisher's exemption request furthers the public interest through visual awareness of the geographical benefits in and around the markets I serve. The Phantom 2 Vision + ultra-lightweight UAS is battery powered and creates no emissions that harm the environment.

The public's interest is furthered by minimizing potential ecological damage by permitting aerial video/photo capture through the Phantom 2 Vision + battery operated ultra-lightweight UAS. Permitting me, Dennis M. Fisher, to immediately fly within the national air space system furthers economic growth. Granting my exemption request substantially furthers the economic impact for the community I serve by assisting companies considering our market for relocation or building, as well as individuals relocating for career advancement by providing our aerial photographic services and improving geographical awareness. Both aspects serve as a stimulus to the community.

**V. Reasons Why Dennis M. Fisher's Exemption Will Not Adversely Affect Safety Or How The Exemption Will Provide a Level of Safety At Least Equal To Existing Rule:**

My, Dennis M. Fisher's, exemption will not adversely affect safety. Quite the contrary, for the reasons stated permitting me, Dennis M. Fisher, to log more flight time in FAA controlled airspace, communicate with the FAA, and allow me to contribute to the innovation and implementation of new safety protocols. In addition I, Dennis M. Fisher, submit the following representations of enhancements to current aerial videography and photography for real estate:

The Phantom 2 Vision + UAS weighs less than 6 pounds with max payload, high definition video camera and gimbal mount;

Flight operations will be limited to a maximum height of 400' AGL outside of a 3 nautical mile radius of any airport and 200' AGL outside of a 2 nautical mile radius of towered airports and 1 mile from non-towered airports;

Flight operations will be conducted for the Phantom 2 Vision + UAS a maximum of 15 minutes per flight;

The Phantom 2 Vision + UAS will be landed prior to manufacturer recommended minimum level of battery power;

The Phantom 2 Vision + UAS will be operated through remote control by visual line of sight;

The Phantom 2 Vision + UAS has a GPS flight safety fail safe feature whereby it returns to its point of takeoff and lands if communication with the remote control pilot is lost;

Flight data and other sources of information are continually reviewed to update and enhance safety protocols;

Flight operations will be conducted in a safe manner and tightly controlled environment, away from power lines, elevated fixtures, structures and lights, airports and congested and densely populated areas;

Extensive pre-flight inspections along with weather and risk assessments are conducted prior to each flight, the objective being execution of a safe flight operation being the first priority;

All necessary permissions and notification will be obtained prior to operation;

Finally, procedures are established to abort flights in the event of safety breaches or potential danger.

My, Dennis M. Fisher, safety protocols provide a level of safety equal to or greater than existing rules. It should be is important to note that absent the integration of commercial UAS into the national airspace system, helicopters are the primary means of aerial video and photography for community education and real estate marketing. While the overall safety record of such helicopters may be satisfactory, the exposure to the risk involved, potential loss of life and substantial property damage cannot be ignored; it is far safer to operate a battery powered ultra-lightweight UAS.

First, the potential loss of life is diminished because UAS's carry no passengers or crew on board and flight operations are conducted away from densely populated areas. Second, with no combustible fuel on board a UAS, the potential for fire or explosion is eliminated. Third, the small size and extreme maneuverability of the Phantom 2 Vision + UAS enables quick and safe avoidance of hazards.

**VI. A Summary The FAA May Publish in the Federal Register:**

A. 14 C.F.R. 21 and 14 C.F.R. 91: Airworthiness Certificates, Manuals and The Like.

14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement of necessary airworthiness certificates in relation to FAR §

91.203(a)(1). The size, weight and limited operational area of the Phantom 2 Vision + UAS permits exemption from Part 21 because the UAS meets (and exceeds) an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UAS's from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. The Phantom 2 Vision + UAS meets or exceeds each of the elements.

14 C.F.R. 91.7(a) prohibits the operation of an aircraft without an airworthiness certificate. As no such certificate will be applicable in the form contemplated by the FARs, this Regulation is inapplicable.

14 C.F.R. § 91.9 (b) (2) requires an aircraft flight manual in the aircraft. As there are no onboard pilots or passengers, and given the size of the UAS's, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a safety/flight manual delineating areas of where safety can be defined. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.

14 C.F.R. § 91.121 regarding altimeter settings is inapplicable insofar as the Phantom 2 Vision + UAS utilizes electronic global positioning systems with a barometric altimeter sensor.

14 C.F.R. § 91.203 (a) and (b) provides for the carrying of civil aircraft certifications and registrations. They are inapplicable for the same reasons described above. The equivalent level of safety will be achieved by maintaining any such required certifications and registrations by me, Dennis M. Fisher.

B. 14 C.F.R. § 45.23: Marking of The Aircraft.

Applicable Codes of Federal Regulation require aircraft to be marked according to certain specifications. The Phantom 2 Vision + UAS is, by definition, unmanned. They therefore do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is difficult to place on such small aircraft with dimensions smaller that minimal lettering requirement. The FAA has previously issued exemptions to this regulation through Exemptions Nos. 8738, 10167, 10167A and 10700.

C. 14 C.F.R. § 61.113: Private Pilot Privileges and Limitations: PIC.

Pursuant to 14 C.F.R. §§ 61.113 (a) & (b), private pilots are limited to non-commercial operations. I, Dennis M. Fisher, holder of a Commercial pilot certificate will exceed the requirements of the current Regulations even though the Phantom 2 Vision + UAS does not carry any pilots or passengers.

D. 14 C.F.R. 91.119: Minimum Safe Altitudes.

14 C.F.R. § 91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. The Phantom 2 Vision + UAS will never operate at an altitude greater than 400' AGL. I, Dennis M. Fisher, will operate the Phantom 2 Vision + UAS safely, away from densely populated and congested areas, providing a level of safety equivalent to or in excess of those in relation to

minimum safe altitudes. Given the size, weight, maneuverability and speed of the Phantom 2 Vision + UAS an equivalent or greater level of safety will be achieved.

E. 14 C.F.R. 91.405 (a); 407 (a) (1); 409 (a) (2); 417(a) & (b): Maintenance Inspections.

The above-cited Regulations require, amongst other things, aircraft owners and operators to "have [the] aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter…."

These Regulations apply to aircraft with an airworthiness certificate. They will not, therefore, apply to the Phantom 2 Vision + UAS. As a safety precaution, I will perform a thorough preflight inspection of the Phantom 2 Vision + UAS just as I would any aircraft I am PIC of before each flight.

**In summary, Dennis M. Fisher seeks an exemption from the following Regulations:**

14 C.F.R. § 91.7 (a); § 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. § 91.405 (a); 14 C.F.R. § 91.407 (a)(1); 14 C.F.R. § 91.409 (a)(2); 14 C.F.R. § 91.409 (a ) (2); and, 14 C.F.R. §§ 91.417 (a) & (b) to commercially operate the Phantom 2 Vision + UAS, small unmanned vehicle/lightweight unmanned aircraft vehicle in community awareness and real estate operations, and to develop economic platforms for real estate to enhance the experience of those seeking to relocate to the markets my business services.

Currently, geographic area awareness and real estate aerial videography/photography relies primarily on the use of larger aircraft carrying significant quantities of, and running on combustible fuel, posing potential risk to the public. Granting my, Dennis M. Fisher's, request for exemption will reduce current risk levels and thereby enhance safety. The Phantom 2 Vision + UAS does not contain potentially explosive fuel, is smaller, lighter and more maneuverable than conventional real estate video and photographic aircraft and achieves aerial objectives in much less flight time.

Further, by operating at lower altitudes and in controlled airspace, the potential public risk is avoided without the need to fly to and from established air fields. I, Dennis M. Fisher, as an active Certified Flight Instructor and commercial rated pilot have a thorough understanding of flight information and will compile safety protocols and the implementation of a flight operation's manual for real estate usage that exceeds currently accepted means and methods for safe flight.

Formal collection of information shared with the FAA will enhance the FAA's internal efforts to establish protocols for complying with the FAA Modernization and Reform Act of

2012. Since there is no crew or passengers aboard my, Dennis M. Fisher's UAS, the likelihood of death or serious bodily injury is minimized. My, Dennis M. Fisher's, operation of the Phantom 2 Vision + UAS, weighing less than 6 pounds and travelling at lower speeds within limited areas will provide an equivalent level of safety as that achieved under current FARs. Accordingly I, Dennis M. Fisher, respectfully request the FAA grant my exemption request and am willing to cooperate in sharing information to benefit the FAA, safety of manned aircraft, and the general public at large.

**Petitioner's Proposed Conditions and Limitations**

The following documents provided by the petitioner –
1) Phantom 2 Vision+ User Manual v1.8,
2) Phantom 2 Vision+ Quick Start Guide,
3) Smart Flight Battery Safety Guidelines,
4) Phantom 2 Vision+ Pilot Training Guide v1.1,
5) UAS Safety & Flight Operating Procedures, hereinafter referred to as operating documents.

Petitioner agrees that failure to comply with any of the conditions and limitations of the requested exemption is grounds for the immediate suspension or rescission of this exemption.

1) Operations authorized by this grant of exemption are limited to the quad-rotor aircraft PHANTOM 2 Vision+ Unmanned Aircraft System.

2) The UAS will not be flown in excess of 30 knots.

3) The UAS will be operated at an altitude of no more than 200' AGL outside of a 2 nautical mile radius from towered airports and 1 nautical mile from non-towered airports; outside of a 3 nautical mile radius of any airport, maximum operating altitude will be 400' AGL. All altitudes will be reported to ATC in feet AGL.

4) The UAS will be operated within visual line of sight (VLOS) of the Pilot In Command (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.

5) The operating documents and the grant of exemption will 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 will 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 upon request. The operator will also present updated and revised documents if he 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 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.

6) 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 UAS will not be operated until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight. The Ground Control Station will be included in the preflight inspection. All maintenance and alterations will be properly documented in the aircraft records.

7) Any UAS maintenance or alterations affecting the UAS operation or flight characteristics, e.g. replacement of a flight critical component, will undergo a functional test flight. The PIC conducting the test flight will make an entry in the aircraft records.

8) The pre-flight inspection section in the operating documents will account for all discrepancies, i.e. inoperable components, items, or equipment, not already covered in the relevant sections of the operating documents.

9) The operator will follow the UAS manufacturer's aircraft/component, maintenance, overhaul, replacement, inspection, and life limit requirements.

10) The operator will carry out its maintenance, inspections, and record keeping requirements, in accordance with the operating documents. Maintenance, inspection, and alterations will be noted in the aircraft records, including total flight hours, description of work accomplished, and the signature of the authorized person returning the UAS to service.

11) Any UAS operated under this exemption will comply with all manufacturer Safety Bulletins.

12) The authorized person will make an entry in the aircraft record of the corrective action taken regarding discrepancies discovered between inspections.

13) UAS operations will be conducted by a PIC possessing a commercial pilot certificate and at least a current third-class medical certificate. The PIC will 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) Prior to operations conducted for the purpose of aerial videography/cinematography and augmenting real estate listing videos (or similar operations), the PIC will have accumulated and logged, in a manner consistent with 14 CFR 61.51(b), a minimum of 25 hours of total time as a UAS rotorcraft pilot including at least 10 hours logged as a UAS pilot with a multi-rotor UAS. Prior documented flight experience that was obtained in compliance with applicable regulations may satisfy this requirement. Training, proficiency, and experience-building flights may also be conducted under this grant of exemption to accomplish the required flight time. However, training operations will only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights the PIC will operate the UAS with appropriate distances in accordance with 14 CFR 91.119.

15) Prior to operations conducted for the purpose of aerial videography/cinematography and augmenting real estate listing videos (or similar operations), the PIC will have accumulated and logged, in a manner consistent with 14 CFR 61.51(b), a minimum of 5 hours as UAS pilot operating the make and model of the UAS to be used in operations under the exemption; 5 hours make and model time may be included in the 10 hours of multi-rotor time prescribed above. The PIC will accomplish 3 take-offs and landings in the preceding 90 days (for currency purposes). 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. However, said training operations will only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights the PIC will operate the UA with appropriate distances in accordance with 14 CFR 91.119.

16) The PIC will not operate the UAS for the purpose of aerial videography/cinematography and augmenting real estate listing videos (or similar operations), unless the PIC has demonstrated and logged in a manner consistent with 14 CFR 61.51(b), 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 people, vessels, vehicles and structures.

17) 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).

18) The UAS will not operate within 2 nautical miles of a towered airport and 1 nautical mile of a non-towered airport reference point as denoted on a current FAA-published aeronautical chart.

19) The UAS 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.

20) If the UAS loses communications or loses its GPS signal, it will return to a pre-determined location within the planned operating area and land or be recovered in accordance with the operating documents.

21) The PIC will abort the flight in the event of unpredicted obstacles or emergencies in accordance with the operating documents.

22) The PIC will not initiate a flight unless (considering wind and forecast weather conditions) there is enough power to fly at normal cruising speed to the intended landing point and land the UA with 30% battery power remaining.

23) The operator will obtain an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA) prior to conducting any operations under a grant of exemption. This COA also requires the operator to request a Notice to Airman (NOTAM) not more than 72 hours in advance, but not less than 48 hours prior to the operation.

24) 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.

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

26) 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 UAS is operating. These documents will be made available to the Administrator or any law enforcement official upon request.

27) The UAS will remain clear and yield the right of way to all manned aviation operations and activities at all times.

28) The UAS will not be operated by the PIC from any moving device or vehicle.

29) The UAS will not be operated over congested or densely populated areas.

30) Flight operations will be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UAS and/or debris in the event of an accident. The operator will ensure nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations will cease immediately and/or;

b. The aircraft is operated near vessels, vehicles or structures where the owner/controller of such vessels, vehicles or structures has granted permission 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, and;
c. Operations nearer to the PIC, operator trainees or essential persons do not present an undue hazard to those persons per § 91.119(a).

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

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

Contact me at 937-474-3828 or dfisher@rmcbanc.com if you have any questions or require additional information.

Respectfully,

Dennis M. Fisher
President