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

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

April 17, 2015

Exemption No. 11352
Regulatory Docket No. FAA−2014−1102

Mr. Gregory S. Walden
Counsel for SkyPan International
Akin Gump Strauss Hauer & Feld, LLP
1333 New Hampshire Avenue, NW.
Washington, DC 20036

Dear Mr. Walden:

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 22, 2014, you petitioned the Federal Aviation Administration (FAA) on behalf of SkyPan International (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct inspections of unimproved or vacant properties for the construction industry, developers, and property owners.

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

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

Airworthiness Certification

The UAS proposed by the petitioner is an Align T Rex 700E F3C.

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 Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket Nos. 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, SkyPan International 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, SkyPan International 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 Align T Rex 700E F3C 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 S. Duncan
Director, Flight Standards Service

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December 22, 2014

United States Department of Transportation
Federal Aviation Administration
Docket Management System
1200 New Jersey Avenue, NE
Washington, DC 20590

Filed in www.regulations.gov

Re: Petition for Exemption of SkyPan International under Section 333 of the FAA Modernization and Reform Act, 49 U.S.C. 44701(f), and 14 C.F.R. Part 11

On behalf of SkyPan International ("SkyPan"), we hereby seek an exemption from certain Federal Aviation Regulations enumerated below, as authorized by Section 333 of the FAA Modernization and Reform Act ("Section 333"), Subsection 44701(f) of the Federal Aviation Act, and pursuant to the procedures set forth in Part 11 of the Federal Aviation Regulations, to allow SkyPan to operate the T Rex 700E F3C UAV rotorcraft manufactured by Align to perform inspections of unimproved or vacant properties for the construction industry, developers, and property owners.

Chicago-based SkyPan International has been conducting aerial panorama photography operations above private property in urban areas for 27 years under very controlled conditions using both manned and unmanned aviation systems (UAS), that is, both full-size helicopters and radio-controlled helicopters. Under contract to leading real estate developers, SkyPan flies over unbuilt properties, normally large dirt, grass, or paved lots. Using professional-grade digital camera equipment SkyPan produces interactive 360-degree photos showing future high rise views at exactly-measured, multiple heights to assist developers with pre-planning needs such as entitlements, investor presentations, pricing studies, and architectural design. In later phases of development, the marketing teams utilize SkyPan's 360-degree digital assets as integral components of their pre-sales presentations.

SkyPan, using its patented panoramic aerial technology, has assisted real estate developers accelerate their business, saving time and money, greenlighting construction and job creation, increasing return-on-investment, and improving economies, city by city, across 14 states. Since 1988, some $55 billion worth of commercial and residential real estate in the United States has been sold and/or leased with SkyPan imagery as one of the primary marketing tools. SkyPan's

longtime repeat clients include the most recognizable names among the nation's elite developers, such as: John Buck, BCRE, Durst, Extell, Fifield, Four Seasons, Hines, Related, Rudin, Ritz Carlton, Silverstein, Trump, Vornado, Howard Hughes, GID, Witkoff, and Zeckendorf. SkyPan is proud of its robust record of protecting the public's safety, security, and privacy. SkyPan believes that its developer and builder clients would vouch for SkyPan's commitment to safety and privacy.

SkyPan never operates over public property. SkyPan maintains strict safety measures including emergency autorotation trials, constant system testing/upgrades, failsafe backups, insurance coverage & an experienced crew of pilot, camera operator & safety personnel. SkyPan notifies local police district community affairs officers in advance of flights. The T Rex 770E F3C is a two-blade remotely-piloted UAV made of carbon fiber, Delren plastic and aluminum, and weighs 13 pounds, 19 pounds with payload. SkyPan's typical flight is under 400-feet above ground level ("AGL") under four minutes in duration. SkyPan's flights are considered straight up/straight down; the vehicle ascends straight up over private property, has the capability of hovering in place, and then descends straight down. While hovering, the camera platform takes 12 still images in one 360-degree revolution. Average speed up and down is 5-10 feet per second; the UAV moves laterally only if necessary, at no more than 1 to 2 miles per hour. Battery power provides 8 minutes of operation; SkyPan operators will receive an audible reminder at 5 minutes, 30 seconds, and Sky Pan will land the UAV well before battery power is exhausted.

The T Rex includes an Ace One flight assist electronics system, with three modes: Normal, where the pilot controls all movement; ATTI keeps the UAV attitude stable while hovering; and GPS, which locks in the UAV altitude and position accurately while hovering. In the event of a loss of GPS signal, the UAV will not lock in its position and automatically go to ATTI mode and remain stable. Should there be a loss of power, the pilot has control of the UAV to perform auto rotation capability and land the aircraft. If the UAV encounters an unexpected obstacle, the pilot will either divert the flight or maintain the UAV in a safe hover position away from the obstacle.

The crew consists of a pilot, camera operator, and a visual observer/safety technician. The pilot and visual observe are in close proximity to each other so that there is no risk of a loss of communication between them throughout the flight.

The name of the applicant is SkyPan International. The primary SkyPan contact is Mr. Mark Segal, Principal, 711 N. Milwaukee Avenue, Chicago, Illinois 60642. Telephone is 312-491-8776 and fax is 312-491-8934. His email is mark@skypanintl.com and SkyPan's web address is www.SkyPanIntl.com.

Exemptions requested

14 C.F.R. Part 21 (airworthiness certification)
14 C.F.R. Part 27 (normal category rotocraft)
14 C.F.R. 61.113 (a) and (b) (pilot certification and qualification)
14 C.F.R. 91.7(a) (airworthiness)
14 C.F.R. 91.119(b) and (c) (minimum safe altitudes)
14 C.F.R. 91.151(a) and (b) (fuel requirements in VFR conditions)
14 C.F.R. 91.405 (a) and (b) (maintenance)
14 C.F.R. 91.407(a)(1) (approval for return to service)
14 C.F.R. 91.409(a) (annual and airworthiness certification inspection)
14 C.F.R. 91.417(a) and (b) (maintenance records)

Safety equivalence or no adverse effect on safety

Unmanned Aerial Vehicle and System

The T Rex 700E F3C UAV, with DJI's Ace One system, has a number of technological capabilities to demonstrate its airworthiness. In the event of a loss of GPS signal, the UAV will not lock in its position and automatically go to ATTI mode and remain stable. Should there be a loss of power, the pilot has control of the UAV to perform auto rotation capability and land the aircraft. If the UAV encounters an unexpected obstacle, the pilot will either divert the flight or maintain the UAV in a safe hover position away from the obstacle.

Given its small size, operational capabilities, and restricted area in which the UAV will operate, an exemption from Part 21, Subpart H, Airworthiness Certificates, and 14 C.F.R. 91.7(a), is warranted, as SkyPan's UAV satisfies the equivalent level of safety as compared with manned aircraft and meets the criteria in section 333. Operating the UAV without an airworthiness certificate in the restricted environment over vacant private property under the conditions proposed will be safer than operating a manned helicopter operating with an airworthiness certificate and not subject to such conditions.

The UAV with payload is less than 20 pounds; it carries no explosive materials or flammable liquid fuels, and operate exclusively over private property, with no passengers or crew on board. As the FAA has found in granting an exemption to Clayco, Exemption No. 11109, at page 10:

> The limited weight significantly reduces the potential for harm to participating and nonparticipating individuals or property in the event of an incident or accident. The risk to an onboard pilot and crew during an incident or accident is eliminated with the use of a UA for the aerial filming operations.

For the reasons outlined above, SkyPan also seeks an exemption from the certification requirements for normal category rotorcraft in Part 27.

In support of SkyPan's request for an exemption from 14 C.F.R. 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), SkyPan will adhere to the following inspection and maintenance program: SkyPan will inspect the UAV before and after each operation, as well as perform daily, weekly, monthly, and annual inspections, as set forth in its operations manual. Before each flight, the pilot in command will inspect the UAV to ensure it is in a safe condition for flight. The preflight inspection will account for any discrepancy, such as an inoperable component, item, or equipment. SkyPan will not initiate a flight if the inspection reveals a condition that adversely affects the safety of operations, and will not operate that UAV until it is found to be in a safe condition. Any UAV that has undergone maintenance or an alteration that affects the UAV's operation or flight characteristics will undergo a functional flight test before return to service.

SkyPan will follow the manufacturer's UAV requirements relating to components, maintenance, overhaul, replacement, inspection and life limits. SkyPan will record all maintenance, alterations, and the functional flight test in the UAV logbook, including total flight hours, description of work accomplished, and the signature of the UAV technician who returned the UAV to service.

SkyPan's UAV is equipped with an altimeter that provides the pilot with a constant digital display of altitude. Moreover, the UAV will be operated within the visual line of sight of the pilot in command and observer and below 400 feet, above vacant property. Accordingly, SkyPan does not believe an exemption from 14 C.F.R. 91.121 is required.

In support of SkyPan's request for an exemption from fuel requirements in 14 C.F.R. 91.151(a) and (b), SkyPan notes that its UAV is battery-powered and is operated for brief periods of time, within the battery capacity of the UAV, and only vertically up and down over private property.

UAV and UAS Operator Qualifications and Training

In support of SkyPan's request for an exemption from the pilot certification and qualifications requirements in 14 C.F.R. 61.113(a) and (a), SkyPan asserts that an equivalent level of safety is achieved by the UAV-specific experience of its UAV pilot. Mr. Jeff Jones has over 10,000 hours operating a variety of remotely-controlled aircraft over 35 years. In particular, he has been operating the T-Rex 770E, the UAV type SkyPan proposes to operate under the requested exemption, since 2010. He is widely recognized as a world-class operator of UAVs. In the course of his aviation career, he has gained extensive knowledge of the airspace and rules governing manned aircraft, fixed-wing and rotorcraft far beyond the knowledge gained by completing a ground school instruction course and passing the FAA private pilot exam.

SkyPan recognizes the FAA's position that section 333 does not allow the FAA to waive the requirement of a UAV operator to hold an airman certificate, relying on section 44711. Assuming for the moment that section 44711 requires a UAV operator to hold a private pilot certificate, section 333 is a more recent enactment and provides explicit authority to the FAA to exempt a UAV operator from *any* certification requirement. Section 333 instructs the FAA to consider *whether* to require airworthiness certificates, certificates of waiver, and certificates of authorization, "*at a minimum.*" Thus, Congress vested FAA with discretion to waive other certificates, including an airman certificate.

Even if section 333 were read not to convey that discretion, section 44711 applies only to operations in *air commerce*. SkyPan submits that its UAV will be operated below 400 feet AGL above vacant property in metropolitan areas where manned aircraft are not permitted to operate. Thus, its operations will not be conducted in "air commerce."

Even if FAA construes its subsection 44701(f) exemption authority to be limited to its regulations, the FAA certainly has discretion to exempt UAV operators from the requirements of Parts 61 and 67 (as opposed to the certification requirement itself) and develop an airman certificate specifically designed for small UAV operations. Applying manned aircraft pilot certification requirements to small UAVs is not necessary as a matter of safety, and does not make sense as a matter of public policy.

SkyPan believes that FAA's determination in the Astraeus Aerial and other exemptions that a commercial pilot certificate is not required for the operators of UAVs for closed set filming applies equally to the nature of its UAV operations:

> [T]he experience obtained beyond a private pilot certificate in pursuit of a commercial pilot certificate in manned flight does not necessarily aid a pilot in the operational environment proposed by the petitioner; *the FAA considers the overriding safety factor for the limited operations proposed by the petitioner to be the airmanship skills acquired through UAS-specific flight cycles, flight time, and specific make and model experience*, culminating in verification through testing.

(Emphasis added.) SkyPlan believes this reasoning supports a UAV/UAS-focused training and experience regimen that should obviate not only a commercial pilot certificate but also a private pilot certificate because any training will be focused on the particular skills of operating the particular small UAV and the particular nature of UAS operations. Should SkyPan elect to use a different type or model of UAV, its pilot would receive 25 hours of training, including 50 take-offs and landings, before operating that make and model of UAV for commercial purposes.

UAV and UAS Operating Parameters

SkyPan will operate its UAV in full compliance with any local permit or safety ordinance, in accordance with its manual. All flights will be conducted within the visual line of sight of the pilot in command, in a tightly circumscribed area of a single parcel of property, with the consent of the property owner and/or developer. Although the UAV may be operated in a metropolitan area, it will remain within the vertical planes of the vacant property, and be flown below 400 feet AGL, except in rare occasions where the proposed construction on the vacant parcel will exceed 400 feet AGL, in which case the UAV will operate at a higher altitude. However, in such rare cases, Sky Pan will not operate its UAV above any existing building or structure within a two-block radius, thereby posing no risk to manned aircraft. SkyPan will notify the appropriate Flight Standards District Office "("FSDO") and Air Traffic Control for any operation within five miles of an airport.

SkyPan's typical flight will be operated under 400 feet AGL and last no longer than four minutes. SkyPan's flights are considered straight up/straight down; the vehicle ascends straight up over private property, has the capability of hovering in place, and then descends straight down. Average speed up and down is 5-10 feet per second; the UAV moves laterally only if necessary, at no more than 1 to 2 miles per hour. Battery power provides 8 minutes of operation; SkyPan operators will receive an audible reminder at 5 minutes, 30 seconds, and SkyPan will land the UAV well before battery power is exhausted.

SkyPan conducts a briefing before each day's operations, which all personnel participating in the operations must attend. SkyPan will obtain written consent of any person who will be

participating in the operations or otherwise be on the property being filmed. SkyPan will provide notice to any adjacent buildings or structures.

SkyPan will limit its operations to daytime Visual Flight Rules ("VFR") plus 30 minutes before sunrise and 30 minutes after sunset (dusk), with each operation ending no later than 30 minutes after sunset. The UAV is equipped with LED lighting visible for 3 miles. Accordingly, we do not believe an exemption from 14 C.F.R. 91.209 is necessary.

SkyPan seeks an exemption from the requirement in 14 C.F.R. 91.119, subsection (b), that an aircraft must remain at least 1,000 feet above any congested area or open air assembly of persons, and subsection (c), that an aircraft must remain at least 500 feet above any person or structure in an area other than populated or congested, and not closer than 500 feet to any person, vehicle, or structure. These requirements were adopted with fixed-wing, manned aircraft operations in mind. While SkyPan may operate its UAV in a metropolitan area, the operations will be strictly confined to private property that is unimproved or vacant, and thus its UAV will not be operated *over* a congested area or open air assembly of persons. SkyPan will ensure that no unauthorized person will be on the parcel of land over which the UAV will be operated, and will provide notice to adjacent buildings and furnish proctors to ensure that unauthorized persons do not come within the narrow parameters in which the UAV will be operated. Combined with the technological capabilities of the UAV and that the UAV will be operated within the visual line of sight of the pilot and an observer, SkyPan submits that its operational limitations provides an equivalent level of safety to that provided in section 91.119.

Public interest

SkyPan's UAV operations will substantially benefit the local and regional economy. SkyPan's panoramic aerial technology has assisted real estate developers accelerate their business, saving time and money, greenlighting construction and job creation, increasing return-on-investment, and improving economies, across 14 states. SkyPan's deliverable product to real estate owners and developers relies on a coterie of specialists including architects, 3D animation studios, rendering companies, video production houses, web designers, interior architect designers, graphic designers, air rights and investment analysts, city planners, ad agencies, and sales and marketing consultants. SkyPan's aerial photography gives the general public a much-enhanced preview of apartments, condos and office space prior to their construction, which improves pre-lease and pre-sales decision making. SkyPan has been conducting aerial panorama photography operations above private property in urban areas for 27 years under very controlled conditions. Operating UAVs under the limitations proposed by SkyPan will avoid any risk of harm to pilots as well as persons and people on the ground that would be present during the operation of

manned helicopters. UAV operations will also require a much smaller energy footprint than with manned helicopters.

Operations limited to the United States

SkyPan does not intend to operate its UAV outside of the United States.

Summary for Federal Register

SkyPlan submits the following summary to be included in the Federal Register, should the FAA determine that publication of a summary is required.

> SkyPan International seeks an exemption to operate the T Rex 700E F3C UAV rotorcraft manufactured by Align to perform inspections of unimproved or vacant properties for the construction industry, developers, and property owners.

Sincerely,

Gregory S. Walden

Gregory S. Walden

Copy to: Mark Segal, Sky Pan International