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

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

CORRECTED COPY

The FAA is reissuing the April 8, 2015, grant of exemption of Exemption No. 11292. A correction was made to add the Altavian Nova R8400 aircraft to the Airworthiness Certification section and to Conditions and Limitations #1. Below is the amended Exemption No. 11292 that includes the aforementioned change. We made the correction in our records as of May 7, 2015.

April 8, 2015

Exemption No. 11292
Regulatory Docket No. FAA−2014−0965

Mr. Mark G. Fischer
President and CEO
Cherokee UAS, LLC
168 Lewis Trail
Arabela, NM 88351

Dear Mr. Fischer:

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 November 15, 2014, you petitioned the Federal Aviation Administration (FAA) on behalf of Cherokee UAS, LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial surveys and inspections.

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 Altavian Nova F6500 Block III and Altavian Nova R8400.

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 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, Cherokee UAS, 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, Cherokee UAS, 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 Altavian Nova F6500 Block III and Altavian Nova R8400 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

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC
Regulatory Docket No. _____

IN THE MATTER OF THE PETITION FOR EXEMPTION OF:
CHEROKEE UAS, LLC.
FOR AN EXEMPTION SEEKING RELIEF FROM THE REQUIREMENTS OF TITLE 14 OF THE CODE OF FEDERAL REGULATIONS SECTIONS 91.9(b), 91.203(a), 91.203(b), 45.23(b) AND 21.185 CONCERNING OPERATION OF AN UNMANNED AIRCRAFT SYSTEM OVER REMOTE, RURAL, AND UNPOPULATED REGIONS OF THE STATE OF NEW MEXICO AND PARTICULARLY OVER CERTAIN RURAL AREAS OF SOUTHEASTERN NEW MEXICO TO INCLUDE THE BUREAU OF LAND MANAGEMENT PECOS DISTRICT AND A SMALL PORTION OF WEST CENTRAL TEXAS KNOWN AS THE WESTERN PERMIAN BASIN PURSUANT TO SECTION 333 OF THE FAA MODERNIZATION AND REFORM ACT OF 2012

Submitted on Nov 15, 2014

Mark G. Fischer
President, CEO
CHEROKEE UAS, LLC
168 Lewis Trail
Arabela, NM 88351
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575-740-7221

CHEROKEE UAS, LLC

CHEROKEE UAS, LLC Petition which seeks exemption from the requirements of 14 C.F.R. §§ 91.9(b), 91.203(a), 91.203(b), 45.23(b) and 21.185. This exemption will permit CHEROKEE UAS, LLC to operate an Unmanned Aircraft System ("UAS") over remote, rural, and unpopulated regions of the state of New Mexico and particularly over certain rural areas of southeastern New Mexico to include the Bureau of Land Management Pecos District and a small portion of west central Texas known as the western Permian Basin.

[Document subtitle]

Mark G. Fischer
Nov 15, 2014

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GLOSSARY OF ABBREVIATIONS

AGL Above Ground Level
ATC Air Traffic Control
COA Certificate of Authorization
FAA Federal Aviation Administration
FAR Federal Aviation Regulation
NAS National Airspace System
Section 333 FAA Modernization and Reform Act of 2012, Section 333
SMS Safety Management System
UAS Unmanned Aircraft System
VFR Visual Flight Rules
VMC Visual Meteorological Conditions

SUMMARY

CHEROKEE UAS, LLC seeks exemption from the requirements of 14 C.F.R. §§ 91.9(b), 91.203(a), 91.203(b), 45.23(b) and 21.185. This exemption will permit CHEROKEE UAS, LLC to operate an Unmanned Aircraft System ("UAS") over remote, rural, and unpopulated areas of the State of New Mexico, and particularly over certain rural areas of southeastern New Mexico to include the Bureau of Land Management Pecos District and a small portion of west central Texas known as the western Permian Basin, while keeping the documents required by the regulations at the ground control station and immediately accessible to the Pilot In Command (PIC). Furthermore, the exemption will relieve CHEROKEE UAS, LLC from the airworthiness certificate standards and the requirement to have a certificate of airworthiness issued for its UAS. This exemption will also permit any required markings concerning the operational status of the UAS to be displayed on the fuselage of the unmanned aircraft.

INTRODUCTION AND INTERESTS OF THE PETITIONER

CHEROKEE UAS, LLC (hereinafter referred to as "CHEROKEE UAS" or "PETITIONER") is a New Mexico-based, Native American / woman owned small business. CHEROKEE UAS offers a range of tailored sUAS solutions for special aerial derived survey and inspection data for public and private customers. CHEROKEE UAS Chief Executive Officer has a history of providing sophisticated and challenging support for U.S. Special Operations Forces; other U.S. Military units; other Government agencies and Federal, State and local Law Enforcement agencies, including Special Weapons and Tactics units. CHEROKEE UAS supporting personnel embody years of experience gained from Civilian Air and Military Operations Communities.

CHEROKEE UAS Chief Executive Officer (CEO) has also performed duties as the agent for access to the City of Roswell Unmanned Aerial System (UAS) Coalition Area of Operations. With access to a state approved 3.5 million acre footprint UAS Area of Operations and the experience to support UAS operations, CHEROKEE UAS is also well positioned to develop and expand UAS commercial operations in New Mexico. CHEROKEE UAS has experience in submitting multiple Certificates of Authorization (COA), Special Airworthiness Certificate - Experimental Category (SAC-EC), and 333 Exemption Petition applications.

By teaming with coalition partners such as ENMU-ROSWELL, Bureau of Land Management (BLM) and others, CHEROKEE UAS has the support of Southeastern New Mexico communities, its leaders and businesses. A variety of public and private interests have requested from CHEROKEE UAS, UAS derived survey data over very sparsely populated to unpopulated, rural New Mexico and western Permian Basin. They include public agencies, such as Federal (BLM and USDA/UPHIS) and State agencies, requesting compliance inspection services, wildlife management support, wildfire fighting support, SAR and specific and occasional law enforcement support services. Private pipeline and power transmission companies and petroleum/gas producers are also asking for data in order to improve their maintenance programs, environmental compliance, and installation security.

In general, all UAS Ops would be in class G airspace, 400 ft. AGL or lower, unless otherwise specifically permitted by an Air Traffic Organization (ATO) issued Certificate of Waiver or Authorization (COA), VFR, Daylight only. CHEROKEE UAS will be piloted by a FAA Licensed Pilot in Command (PIC) with a qualified observer to perform sense and avoid functions during UAS flight operations.
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CHEROKEE UAS has recently acquired an Altavian Nova Block III Unmanned Aircraft System (hereinafter referred to as the "Nova Block III UAS"). As set forth in this Petition, CHEROKEE UAS seeks to operate its Nova Block III UAS for the special purpose of providing specific and limited UAS derived survey and inspection data in support of public and private interests. CHEROKEE UAS has established a commitment to and record of safe, ethical, and legal practices which are organic to its UAS program.

BACKGROUND

Unmanned Aircraft System: Altavian Nova Block III UAS.
CHEROKEE UAS seeks an exemption to operate an Altavian Nova Block III UAS, Serial No. TBD, registration number TBD, for compensation or hire within the national airspace system ("NAS"). The Nova Block III UAS is comprised of an unmanned aircraft and a transportable ground station. The Nova Block III UAS has a maximum gross weight of approximately fifteen (15) pounds, while having a wingspan of 108 inches and a length of 65 inches. The Nova Block III unmanned aircraft is equipped with a single propeller driven by a Lithium Polymer battery powered electric motor.

Figure 1: The Nova Block III UAS without registration number displayed in accordance with 14 C.F.R. Part 45. CHEROKEE UAS has reserved a registration number, and will submit an Aircraft Registration Application upon the grant of the exemptions sought by this Petition.

Proven Operational History of the Nova Block III UAS in the NAS

The Nova Block III UAS is currently operating safely within the NAS pursuant to approximately fourteen (14) Certificates of Authorization ("COA") granted by the Federal Aviation Administration ("FAA") to the Middle Tennessee State University; Sinclair Community College in Dayton, Ohio; the U.S. Army Corps of Engineers (Jacksonville District, for operations in South Florida); Mississippi State University for the Pearl River Basin; and the University of Florida. The U.S. Army Corps of Engineers will be operating the Nova Block III UAS pursuant to an additional five COAs in the foreseeable future, pending approval by the FAA.

BASIS FOR PETITION

CHEROKEE UAS, LLC, pursuant to the provisions of the Federal Aviation Regulations (14 C.F.R. § 11.61) and the FAA Modernization and Reform Act of 2012, Section 333, *Special Rules for Certain Unmanned Aircraft Systems*, hereby petitions the Administrator for an exemption from the requirements of 14 C.F.R. §§ 91.9(b), 91.203(a), 91.203(b), 45.23(b), as well as the restricted category airworthiness certification standards specified in 14 C.F.R. § 21.185, including the requirement to have a certificate of airworthiness as contemplated by 14 C.F.R. Part 21.

In the alternative, and in accordance with Federal Aviation Regulation ("FAR") Section 21.16, entitled *Special Conditions* (14 C.F.R. § 21.16), CHEROKEE UAS respectfully requests that the Administrator prescribe special conditions for the intended operation of the Altavian Nova Block III UAS that contain such safety standards as the Administrator finds necessary to establish a level of safety equivalent to that established by the restricted category airworthiness certification standards specified in 14 C.F.R. § 21.185.

In accordance with 14 C.F.R. § 11.81, CHEROKEE UAS provides the following information in support of its petition for exemption:

A. Name and Address of the Petitioner.
CHEROKEE UAS, LLC
168 Lewis Trail
Arabela, New Mexico 88351

The point of contact for this Petition and specific contact information is as follows:
Mark G. Fischer
CHEROKEE UAS LLC
168 Lewis Trail
Arabela, New Mexico 88351
M: 575-740-7221
email: gwyranch@hotmail.com

B. The Specific Sections of 14 C.F.R. From Which CHEROKEE UAS Seeks Exemption.

1. CHEROKEE UAS Seeks Exemption From The Requirement Of Section 91.9(b).
CHEROKEE UAS seeks an exemption from **14 C.F.R. § 91.9(b).** Section 91.9 entitled *Civil aircraft flight manual, marking, and placard requirements*, subsection (b) states the following:
(b) No person may operate a U.S.-registered civil aircraft-- (1) For which an Airplane or Rotorcraft Flight Manual is required by § 21.5 of this chapter unless there is available in the aircraft a current, approved Airplane or Rotorcraft *Flight* Manual or the manual provided for in § 121.141(b); and (2) For which an Airplane or Rotorcraft Flight Manual is not required by § 21.5 of this chapter, unless there is available in the aircraft a current approved Airplane or Rotorcraft Flight Manual, approved manual material, markings, and placards, or any combination thereof.

2. CHEROKEE UAS Seeks Exemption From The Requirements Of Sections 91.203(a) and 91.203(b).
CHEROKEE UAS seeks an exemption from **14 C.F.R. § 91.203(a) and (b).** Section 91.203 entitled *Civil aircraft: Certifications required*, subsections (a) and (b) state the following:
(a) Except as provided in § 91.715, no person may operate a civil aircraft unless it has within it the following:
(1) An appropriate and current airworthiness certificate. Each U.S. airworthiness certificate used to comply with this subparagraph (except a special flight permit, a copy of the applicable operations specifications issued under § 21.197(c) of this chapter, appropriate sections of the air carrier manual required by parts 121 and 135 of this chapter containing that portion of the operations specifications issued under § 21.197(c), or an authorization under § 91.611) must have on it the registration number assigned to the aircraft under part 47 of this chapter. However, the airworthiness certificate need not have on it an assigned special identification number before 10 days after that number is first affixed to the aircraft. A revised airworthiness certificate having on it an assigned special identification number that has been affixed to an aircraft may only be obtained upon application to an FAA Flight Standards district office.
(2) An effective U.S. registration certificate issued to its owner or, for operation within the United States, the second copy of the Aircraft registration Application as provided for in § 47.31(c), or a registration certification issued under the laws of a foreign country.
(b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under § 91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

3. CHEROKEE UAS Seeks Exemption From The Requirements Of Section 45.23(b).
CHEROKEE UAS seeks an exemption from **14 C.F.R. § 45.23(b)**. Section 45.23 entitled *Display of marks; general*, subsection (b), states the following:
(b) When marks include only the Roman capital letter "N" and the registration number is displayed on limited, restricted or light-sport category aircraft or experimental or provisionally certificated aircraft, the operator must also display on that aircraft near each entrance to the cabin, cockpit, or pilot station, in letters not less than 2 inches nor more than 6 inches high, the words "limited," "restricted," "light-sport," "experimental," or "provisional," as applicable.

4. CHEROKEE UAS Requests Relief to Exempt the Nova Block III UAS from the Restricted Category Airworthiness Certification Standards Specified In 14 C.F.R. §21.185.

In accordance with the FAA Modernization and Reform Act of 2012, Section 333, and 14 C.F.R. § 21.16 entitled *Special Conditions*, CHEROKEE UAS seeks to exempt the Nova Block III UAS from the restricted category airworthiness certification specified in **14 C.F.R. § 21.185**, or the requirement to have a certificate of airworthiness issued, as contemplated by **14 C.F.R. Part 21**. Section 21.185 entitled *Issue of airworthiness certificates for restricted category aircraft*, states the following, in part:

(a) Aircraft manufactured under a production certificate or type certificate. An applicant for the original issue of a restricted category airworthiness certificate for an aircraft type certificated in the restricted category, that was not previously type certificated in any other category, must comply with the appropriate provisions of § 21.183.

C. The Extent of Relief CHEROKEE UAS Seeks And The Reason CHEROKEE UAS Seeks The Relief.

1. Extent Of Relief CHEROKEE UAS Seeks And The Reason CHEROKEE UAS Seeks Relief From Section 91.9(b).

Relief is requested because the Nova Block III UAS weighs approximately fifteen (15) pounds at its maximum gross weight and cannot carry the approved Airplane Flight Manual onboard. Furthermore, the Nova Block III UAS is unmanned, the aircrew member is located at a ground control station. As such, CHEROKEE UAS proposes the following conditions and limitations to its request for exemption from Section 91.9(b):

The approved Airplane Flight Manual must be kept at the ground control station, where it is immediately available for reference by the aircrew member (pilot in command) of the Nova Block III UAS any time the unmanned aircraft is operating.

The approved Airplane Flight Manual must be made available within 10 days to any FAA, U.S. Department of Defense, or law enforcement official upon request.

2. The Extent of Relief CHEROKEE UAS Seeks And The Reason CHEROKEE UAS Seeks Relief From Section 91.203(a) and (b).

CHEROKEE UAS requests relief from the requirement of Section 91.203(a) (*i.e.,* that an appropriate and current airworthiness certificate and an effective U.S. registration certificate be carried within the aircraft), and further, requests relief from the requirement of Section 91.203(b) (*i.e.,* that the airworthiness certificate be displayed at the cabin or cockpit entrance so that it is legible to passengers or crew). As the Nova Block III UAS is unmanned, it has no cabin, cockpit, pilot station, or entrances thereto. Therefore, the aircrew member is located at a ground control station and no passengers are carried at any time. As such, CHEROKEE UAS proposes the following conditions and limitations to its request for exemption from Sections 91.203(a) and (b):

The documents required by Sections 91.203(a) and (b) must be kept at the ground control station, where it is immediately available to the aircrew member (pilot in command) of the Nova Block III UAS any time the unmanned aircraft is operating.

The documents required by 91.203(a) and (b) must be made available within 10 days to any FAA, U.S. Department of Defense, or law enforcement official upon request.

3. The Extent of Relief CHEROKEE UAS Seeks and the Reason CHEROKEE UAS Seeks Relief from 14 C.F.R. § 45.23(b).

CHEROKEE UAS requests relief from the requirement of Section 45.23(b), if applicable, that the word "Restricted" be displayed on the Nova Block III UAS near each entrance to the cabin, cockpit, or pilot station. As the Nova Block III UAS is unmanned, it has no cabin, cockpit, pilot station, or entrances thereto. Therefore, CHEROKEE UAS proposes that, if required, the word "Restricted" be displayed in letters two (2) inches high, horizontally on both sides of the fuselage between the leading edge of the wing and the nose section of the Nova Block III UAS.

4. The Extent of Relief CHEROKEE UAS Seeks and the Reason CHEROKEE UAS Seeks Relief from 14 C.F.R. § 21.185.

CHEROKEE UAS seeks relief from the airworthiness certificate requirements of the Federal Aviation Regulations and proposes to commercially operate the Nova Block III UAS, without an airworthiness certificate, for the special purpose of conducting aerial acquisition survey services over certain sparsely populated rural areas of the State of New Mexico and a small portion of west central Texas known as the western Permian Basin, pursuant to specific operating limitations and a Safety Management System ("SMS"). CHEROKEE UAS seeks relief from the airworthiness certificate requirements of 14 C.F.R.§ 21.185 to the extent that the Nova Block III UAS, which has not yet been type certificated by the FAA, may be operated as if it were a restricted category aircraft for a single, defined, special purpose operation (*i.e.*, aerial surveying and inspection).

Pursuant to the FAA Modernization and Reform Act of 2012, Section 333 ("Section 333"), CHEROKEE UAS seeks relief from the airworthiness certificate requirements of the FAR because operation of the Nova Block III UAS will not create a hazard to users of the NAS, or the public, or otherwise pose a threat to national security. Section 333 sets forth the requirements for considering whether a UAS will create a hazard to users of the NAS or the public or pose a threat to national security. Further, Section 333 provides the authority for such UAS to operate without airworthiness certification. Specifically, Section 333 states the following, in part:

(b) Assessment of Unmanned Aircraft Systems.--In making the determination under subsection (a), the Secretary shall determine, at a minimum--

(1) which types of 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 set forth below, numerous factors, including the proven safe operational history of the Nova Block III UAS in the NAS, as well as the specific parameters of CHEROKEE UAS's intended operation pursuant to this exemption, demonstrate that the Nova Block III UAS has in the past, and will continue in the future, to operate safely in the NAS without creating a hazard to other aircraft or people on the ground. Accordingly, the FAA may approve operation of the Nova Block III UAS, without an airworthiness certificate, by setting forth specific operating limitations to ensure a level of safety equivalent to what would be provided by airworthiness certification.

D. The Reasons Why Granting CHEROKEE UAS's Request Would Be In The Public Interest; That Is, How It Would Benefit The Public As a Whole.

Granting the present Petition will further the public interest by allowing CHEROKEE UAS to safely, efficiently, and economically perform aerial acquisition surveys and inspections over certain sparsely populated rural areas of the State of New Mexico and a small portion of west central Texas also known as the BLM Pecos District and the western Permian Basin in support of government entities, agriculture, scientific studies, wildlife monitoring, and forestry, while also furthering the development of the economy related to the oil and gas industries. Additionally, use of the Nova Block III UAS will decrease congestion of the NAS, reduce pollution, and provide significant benefits to the economy. Notably, the benefits of the proposed operation of the Nova Block III UAS will be realized without implicating any privacy issues as CHEROKEE UAS flights will be restricted to sparsely populated rural areas in general and specifically restricted to avoid the public.

1. The Public Will Benefit From The Aerial Surveys And Inspections Performed.

CHEROKEE UAS submits this Petition to perform UAS derived aerial surveys and inspections over certain sparsely populated rural areas of the State of New Mexico and a small portion of west central Texas also known as the BLM Pecos District and the western Permian Basin. These operations will be in support of government entities, agriculture, scientific studies, wildlife monitoring, forestry, and the oil, gas, and electrical power production and transmission industries. The Nova Block III UAS will provide safe, efficient, and economical aerial acquisition surveys and inspection operations to further each of these fields; all of which are critical to the well-being of the general public. The specific operations that CHEROKEE UAS will perform with the Nova Block III UAS demonstrate how the requested exemption will directly benefit the above-referenced industries and the public. In agriculture, the aerial acquisition performed by the Nova Block III UAS will be used to predict crop yields and prevent crop destruction due to invasive species, i.e. feral swine. In the oil and gas industry, the Nova Block III UAS will be used to aid in facility inspections, environmental compliance inspections / surveying, planning new worksites, and performing right of way analysis. The Nova Block III UAS will also further environmental management by surveying invasive species damage and encroachment, mapping wildfire damage and reclamation efforts, and surveying point source pollution. UAS derived Pipeline, Power Line, and Power Station Inspections can reveal problematic conditions to repair agencies prior to potentially catastrophic failures occurring; thus benefiting the Public in multiple ways.

2. The Public Will Benefit From Decreased Congestion Of The NAS.

The Nova Block III UAS is a battery powered UAS that serves as a safe, efficient, and economical alternative to the manned aircraft traditionally utilized to obtain aerial imagery. By reducing the amount of manned aircraft needed to perform aerial acquisitions, an exemption allowing the use of a Nova Block III UAS would reduce the amount of manned aircraft in the NAS, reduce noise and air pollution, as well as increase the safety of life and property in the air and on the ground. Furthermore, by reducing the number of manned aircraft operating in the NAS, congestion around airports caused by arriving and departing aircraft will be reduced. The Nova Block III UAS does not require an airport to takeoff or land. Likewise, a reduction of manned aircraft conducting aerial survey missions would result in fewer aircraft that must be handled by air traffic control during the ground, takeoff, departure, arrival, and landing phases of flight operations.

3. The Public Will Benefit From The Safety And Efficiency Of The Nova Block III UAS.

Conducting UAS derived aerial surveys and inspections with the Nova Block III UAS, instead of manned aircraft, will greatly benefit the public by drastically reducing the levels of air and noise pollution generated during traditional aerial survey flight operations. By using battery power and an electric motor, the Nova Block III UAS produces no air pollution, and is a viable environmentally conscious alternative to the internal combustion engine aircraft that are typically utilized for aerial surveys and inspections. The Nova Block III UAS, while reducing the carbon footprint of aerial acquisitions, also eliminates noise pollution as its battery powered electric motor is barely audible during the take-off phase, and cannot be heard when operating more than 100 feet above ground level.

By using the Nova Block III UAS to perform UAS derived aerial surveys and inspections, the substantial risk to life and property in the air and on the ground, which is usually associated with traditional manned aircraft flight operations, will be substantially reduced or completely eliminated. Aside from the lack of aircrew members located onboard the aircraft, the Nova Block III UAS (weighing approximately fifteen (15) pounds at its maximum gross weight with a wingspan of 108 inches and a length of 65 inches, with no fuel on board), has less physical potential for collateral damage to life and property on the ground, and in the air, compared to the manned aircraft that typically conduct aerial surveys, i.e. Cessna 172 (weighing approximately 2,500 pounds with a wingspan of approximately 36 feet, a length of 27 feet, and a fuel capacity of 56 gallons).

4. Performing Aerial Survey and Inspection Operations With The Nova Block III UAS Will Benefit The Economy.

In addition to being safe and efficient, the Nova Block III UAS is also an economical alternative to using manned aircraft to conduct aerial surveys and inspections. As such, operation of the Nova Block III UAS will allow New Mexico based companies, like CHEROKEE UAS, to be competitive and contribute to growth of the U.S. economy, particularly in the economically challenged southeastern New Mexico region. Specifically, with the rising cost of aviation fuel and the Environmental Protection Agency ("EPA") regulatory actions phasing out leaded fuels, U.S. owned and operated companies must adopt new and alternative technology in order to remain competitive. Operating the battery powered Nova Block III UAS is one such technology that not only allows companies greater operational flexibility compared to manned aircraft, but provides such flexibility without the high operational cost of a traditional manned aircraft.

By operating the Nova Block III UAS, companies such as CHEROKEE UAS can remain competitive and profitable, and therefore provide greater job stability to employees and contractors, which will ultimately contribute to growth of the U.S. economy. Improved financial performance through commercial use of the Nova Block III UAS, supports a stable workforce that increases consumer spending; improves local, state, and federal tax revenues; and allows companies to invest in research and development in order to remain competitive both in the United States and abroad. Finally and most importantly, the commercial use of the Nova Block III UAS, will provide public and private entities access to more frequent, higher resolution and more cost effective aerial survey/inspections thus promoting safer and more efficient operations.

5. There Are No Privacy Issues.
Like manned aerial survey and inspection flight operations that have been conducted for decades, the proposed operation of the Nova Block III UAS will not implicate any privacy issues. Specifically, the Nova Block III UAS will be operated only in sparsely populated rural areas, and in accordance with all Federal Aviation Regulations, including the minimum altitude requirements of 14 C.F.R. § 91.119. Most significantly, the Nova Block III UAS will not be operated closer than 500 feet to any person, vessel, vehicle, or structure, except when necessary for takeoff or landing.

E. The Reasons Why Granting The Exemption Would Not Adversely Affect Safety, Or How The Exemption Would Provide A Level Of Safety At Least Equal To That Provided By The Rule From Which CHEROKEE UAS Seeks Exemption.

1. Reasons Why an Exemption from the Requirements of Section 91.9(b) Would Not Adversely Affect Safety.
This exemption would maintain the level of safety established by Section 91.9(b) because CHEROKEE UAS will keep the approved Airplane Flight Manual at the ground control station where the pilot in command flying the Nova Block III UAS will have immediate access to the document. Previous exemptions granted by the FAA concerning Section 91.9(b) establish that safety is not adversely affected when the approved Aircraft Flight Manual is kept at the ground control station of a UAS, where it can be immediately accessed by the pilot in command. Section 91.9(b) "requires aircraft to carry the flight manual so the pilot would have ready access to the aircraft limitations while in flight." Exemption No. 8607. However, the FAA has also found that UAS will always be operated without any passengers or crew onboard, and that "requiring these special-use aircraft [UAS] to carry superfluous paper documents may present a safety hazard to the integrity of the [UAS]." *Id*.
The FAA has previously granted exemptions in circumstances similar, in all material respects, to those presented herein (*e.g.*, Exemption Nos. 8607, 8737, 8738, 9299, 9430, 9554, 9564, 9565, 10167, 10602, 10673, 10835, 10869, 10968).

2. Reasons Why an Exemption from the Requirements of Section 91.203(a) and (b) Would Not Adversely Affect Safety.
This exemption would maintain the level of safety established by Sections 91.203(a) and (b) because CHEROKEE UAS will keep the required documents at the ground control station where the pilot in command flying the Nova Block III UAS will have immediate access.

Previous exemptions granted by the FAA concerning Sections 91.203(a) and (b) establish that safety is not adversely affected when the Airworthiness Certificate and U.S. registration certificate are kept at the ground control station of the UAS, where it can be immediately accessed by the pilot in command. Specifically, the FAA has held that the intent of Sections 91.203(a) and (b) is better served by having the required documents in the control of the UAS operator, i.e. PIC, the reasoning is as follows:
The original intent of the subject regulation was to display the airworthiness and registration documents so they would be easily available to FAA inspectors and passengers for inspection and verification of the airworthiness and registration of the aircraft.

In this case, the aircraft will always be operated without any passengers or crew.
The missions for which UASs are intended will prevent the aircraft from being available for the inspections normally prescribed for civil aircraft. Further, it will be operated on strictly confined missions from a known departure and arrival point, under the constant control of a PIC and a dedicated, observer. Also, requiring these special-use aircraft to carry superfluous paper documents may present a safety hazard to the integrity of the [UAS]. FAA operating limitations and special arrangements with Air Traffic Control (ATC) for surveillance of [UAS] flights adequately compensate for the requirements for carrying airworthiness and registration documents. We find the intent of the regulation is better served by having the required documents in the control of the PIC and available for inspection under the special conditions prescribed in this exemption.
The FAA has previously granted exemptions in circumstances similar, in all material respects, to those presented herein (*e.g.*, Exemption Nos. 8607, 8737, 8738, 9299, 9564, 9565, 10167, 10602, 10673, 10835, 10869, 10968).

3. Reasons Why An Exemption From The Requirements Of 14 C.F.R. § 45.23(b) Would Not Adversely Affect Safety.
This exemption would maintain the level of safety established by Section 45.23(b) because if required, displaying the word "Restricted" with two (2) inch high letters, horizontally on both sides of the fuselage between the leading edge of the wing and the nose section of the Nova Block III UAS, will inform all parties of the unmanned aircraft's overall operating status. Significantly, CHEROKEE UAS will display the word "Restricted" in two (2) inch high letters in compliance with size requirement of Section 45.23(b) (*i.e.*, "letters not less than 2 inches nor more than 6 inches high"). By placing the letters horizontally on both sides of the fuselage between the leading edge of the wing and the nose section of the Nova Block III UAS, will ensure that the word "Restricted" is the in most visible location, so that all parties will be informed of the unmanned aircraft's overall operating status. *See* Figure 1, page 5.
The FAA has previously granted exemptions in circumstances similar, in all material respects, to those presented herein (*e.g.*, Exemption Nos. 8737, 10167, 10167A, 10700, 10810).

4. Reasons Why An Exemption From The Requirements Of 14 C.F.R. § 21.185, including The Requirement To Have A Certificate Of Airworthiness, Would Not Adversely Affect Safety.
In seeking this exemption, CHEROKEE UAS submits that the Nova Block III UAS can operate safely in the NAS over certain sparsely populated rural areas of the State of New Mexico and a small portion of west central Texas also known as BLM Pecos District and the western Permian

Basin without creating a hazard to other aircraft or people on the ground. Accordingly, the FAA may approve its use without an airworthiness certificate as demonstrated by: (i) the safe operational history and current use of the Nova Block III UAS in the NAS; (ii) the characteristics of the Nova Block III UAS; (iii) the limited area of CHEROKEE UAS's intended operation; (iv) the Safety Management System CHEROKEE UAS has developed for Nova Block III UAS operations and maintenance; (v) the FAA licensed pilot requirement; (vi) the observer requirement; (vii) the specific operating limitations; and (viii) any other conditions that the Administrator may prescribe.

i. The Nova Block III UAS Has A Proven History Of Operation In The NAS Pursuant To A Certificate Of Authorization ("COA").

The Nova Block III UAS is currently operating safely in the NAS pursuant to approximately fourteen (14) Certificates of Authorization ("COA") granted by the FAA to the Middle Tennessee State University; Sinclair Community College in New Mexico; the U.S. Army Corps of Engineers (Jacksonville District, for operations in South Florida); Mississippi State University for the Pearl River Basin; and the University of Florida. The U.S. Army Corps of Engineers will be operating the Nova Block III UAS pursuant to an additional five COAs in the foreseeable future, pending approval by the FAA.

ii. The Specifications of The Nova Block III UAS Demonstrate Its Safe Characteristics.

The Nova Block III UAS does not create a hazard to users of the NAS or the public, or otherwise pose a threat to national security considering its size, weight, speed, or operational capability. The specifications of the Nova Block III UAS are as follows: Unmanned Aircraft System	The Nova Block III is an Unmanned Aircraft System that is comprised of a small, lightweight unmanned aircraft and a transportable ground station.
Serial No.	TBD
Unmanned Aircraft Dimensions	Wingspan: 108 in. Length: 65 in.
Engine (Propulsive Unit)	Engine (Propulsive Unit) (1) Altavian LLC.. P/N : 30027 (Electric) FAA Engine Type Cert: None Propulsive Unit Type: 25V, 11 Amp Hour capacity, Lithium ion battery powered, direct drive electric motor

Motor, Electric Sub-Assembly: Manufacturer: NeuMotor
Model: 1509 2.0 HP Peak Power Direct Drive 10 oz. Wt.
Motor, Controller Sub-Assembly: Manufacturer: Castle Creation
Model: Phoenix Ice 100 Type: Speed Controller 100 Amps Maximum 4.6 oz. Wt.
Motor, Battery: Manufacturer: MaxAmps, LLC..
Type: Lithium Ion 11 Amp hour 22.2V (nominal)

Fuel	Not Applicable. NOTE: The Nova Block III UAS is powered by a Lithium Polymer rechargeable battery, Altavian P/N 30142.
Engine (Propulsive Unit) Limits	Maximum Power Output: 2.0 HP Maximum RPM: 60,000 RPM (reduced to a propeller RPM of 7,200) Maximum Motor Temperature: 170 °F (77 °C) NOTE: The motor temperature is not displayed to the operator. Maximum motor, controller sub-assembly temperature: 194 °F (90 °C) Minimum voltage, motor battery during pre-flight engine run up after 3 sec. at max throttle: 22.6V
Propeller and Propeller Limits	(1) Altavian LLC.. P/N 30360 FAA Propeller Type Certificate: None Propeller Type: 2-blade, hinged (folding), carbon fiber reinforced plastic, fixed pitch, tractor

Propeller Sub-Assembly Manufacturer: Aeronaut Model: CAM 15x13 Diameter (Nominal): 15 in.	
Battery Command & Control	Nova Air Vehicle Battery P/N 30142 powers the motor, and battery command and control.
Airspeed Limits	Vne (Never Exceed Speed) 58 knot (30 m/s) Vno (Maximum Structural Cruising Speed) 48 knots (25 m/s) Va (Maneuvering Speed) 48 knots (25 m/s) Landing Speed: 27 knots (14 m/s)
Empty Weight C.G. Range	20.2 – 21.7 inches aft of datum

Datum	Front of Motor Case
Mean Aerodynamic Chord (MAC)	13 in. long with leading edge 21.2 in. from nose
Leveling Means	Not Applicable.
Maximum Weights	Ramp 15 lbs. Takeoff 15 lbs. Landing 15 lbs.
Empty Weight	8.35 lbs.

NOTE: Empty Weight Excludes weight of battery and payload modules.

Frequencies	902-928 MHz (ISM Band) 2.4 GHz (ISM Band) NOTE: FCC license is not required to utilize the above frequencies; uplink and downlink are on the 900Mhz band. If video is utilized, uplink, downlink, and video are all on 2.4 Ghz.
Computer Software	Avionics embedded processor, P/N 30138
Minimum Crew	(1) The Nova Block III UAS can be operated by a single operator.
Number of Seats	(0) Not Applicable.
Fuel Capacity	Not Applicable.
Oil Capacity	Not Applicable.
Max. Operating Altitude	1,000 ft. AGL (304 M)
Control Surface Movements	Wing Flaps N/A Aileron Up 30° Down 30° "V" tail elevator action Up 60° Down 60° "V" tail rudder action Up 60° Down 60° "V" tail max. combination Rudder elevator action Up 60° Down 60°
Nominal Endurance	90 minutes above 32 °F (0 °C) 45 minutes below 32 °F (0 °C)
Ambient Outside Air Temperature (OAT)	Maximum OAT: 120 °F (49 °C) Minimum OAT At Altitude: -20 °F (-29 °C)
Wind Limitation	19 knots
Maintenance	This Nova Block III UAS must be maintained in accordance with the Altavian Nova Maintenance Operation Manual, or later FAA accepted revision.

The Specifications of the Nova Block III UAS Demonstrate Its Safe Characteristics

iii. Flight Operations Pursuant to the Exemptions sought would be limited to sparsely populated rural areas of New Mexico and west central Texas, to include the BLM Pecos District and the Permian Basin. Furthermore, Flight Operations Pursuant to the Exemptions sought would specifically avoid proximity to Airports or populated areas. Populated areas and airports within the confines of these areas will be strictly avoided and not overflown. Individual filed NOTAMs will not exceed 10 x 10 miles.

14 C.F.R. § 91.119 restrictions

1. Not to be operated over populated areas as depicted on VFR Sectional Aeronautical Charts and visual observation;

2. Not to be operated within five (5) miles of any airport or helipad;

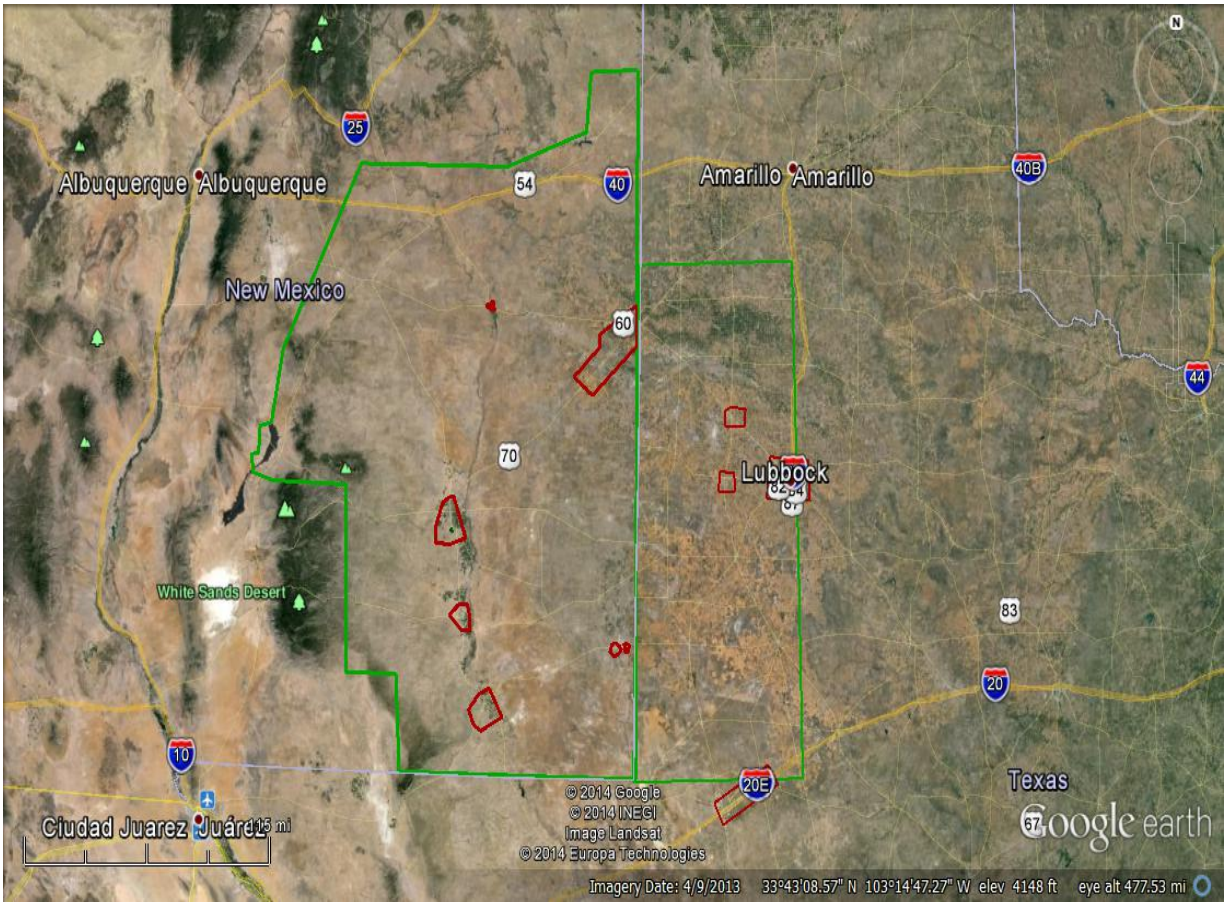
3. Not to be operated closer than 500 feet to any person, vessel, vehicle, or structure.

Furthermore, all flight operations will be conducted in accordance with 14 C.F.R. § 91.119, *Minimum safe altitudes: General*.

CHEROKEE UAS submits that the vast majority of New Mexico, particularly Southeastern New Mexico and west central Texas, otherwise known as the BLM Pecos District and the Permian Basin would qualify as rural sparsely populated areas over which CHEROKEE UAS could perform UAS derived, aerial survey and inspection flight operations pursuant to the requested exemption.

A Google map depicting the proposed area for flight operations over southeastern New Mexico and west central Texas, otherwise known as the BLM Pecos District and the Permian Basin, which are not in the proximity of Airports or populated areas is Figure 1.

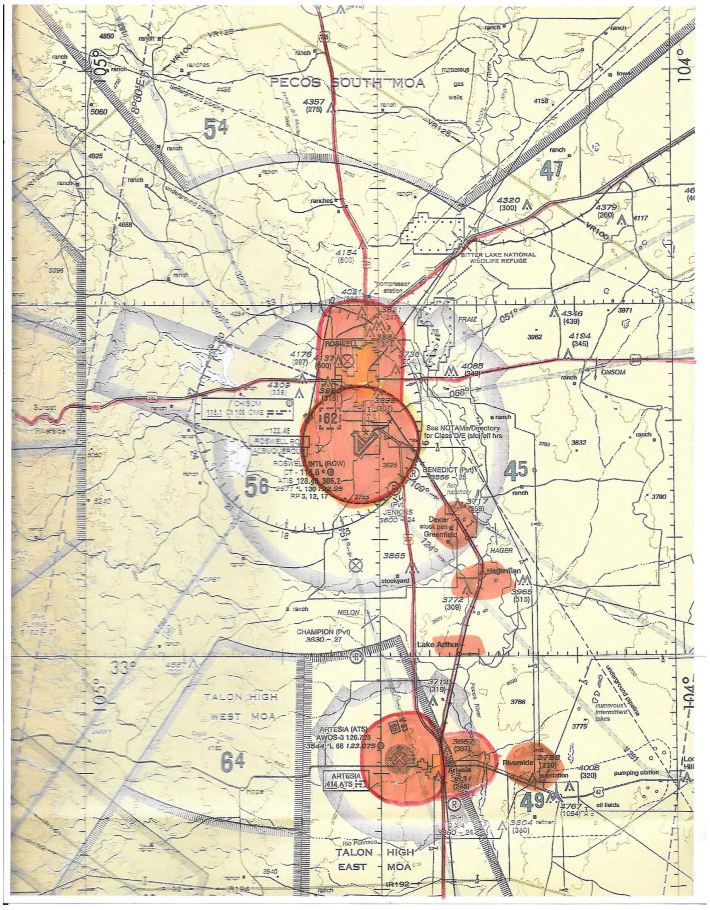
Figure 1: Area outlined in Green represents proposed area of operations for Nova Block III UAS aerial survey and inspection operations over the BLM Pecos District in southeastern New Mexico and the western Permian Basin of west central Texas.



Note: Red Outlined Areas representing major exclusion or "No Fly Zones", these are for illustration and do not represent all "No Fly Zones".

Current VFR Sectional Charts will be used to avoid Airports by 5 NM. as well as roads and population zones. Since all proposed flights will be VFR/Daylight only, the PIC and observer will ensure positive avoidance of these areas.

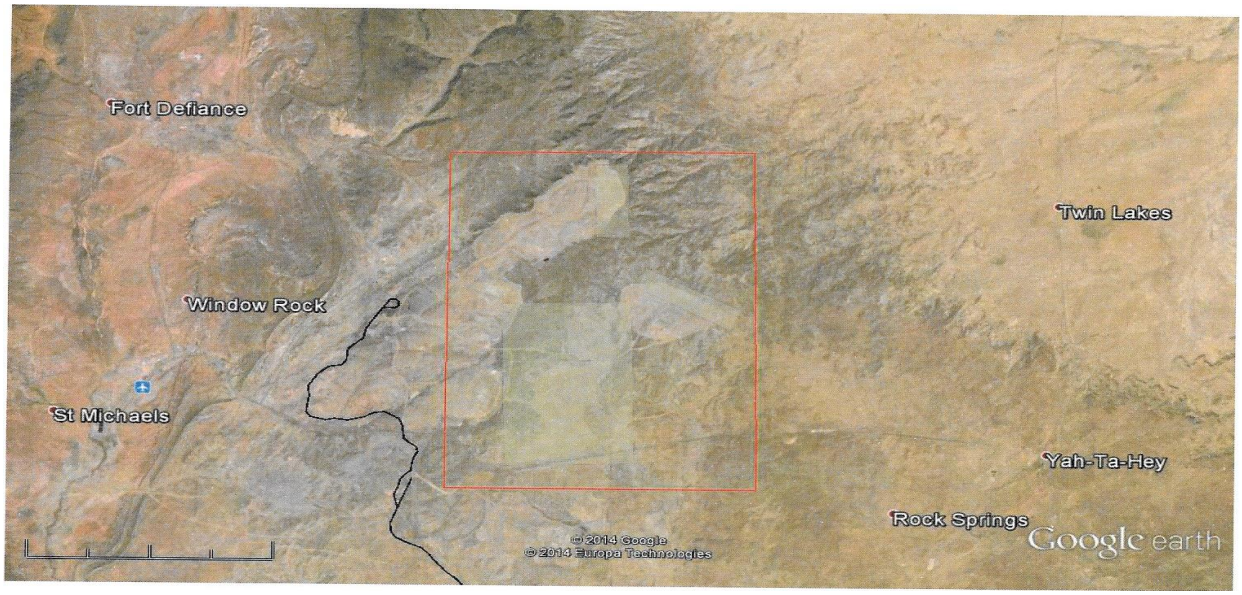
Figure 2: Areas in Red or filled in Orange are exclusion or "no fly zones" for Nova Block III UAS aerial survey and inspection operations conducted by CHEROKEE UAS. The VFR Sectional depicted below is an example of one way how VFR Sectional Charts will be used.



Buffer or exclusion zones for flight operations will also be implemented around state roads. Buffers of one hundred (100) meters around state roads with more than two lanes, and fifty (50) meters around state roads with two lanes or less will be implemented.

A Google map depicting a proposed area for flight operations over western New Mexico and not in the proximity of Airports or populated areas is Figure 3.

Figure 3: Area outlined in Red represents a typical area of operations for Nova Block III UAS aerial survey and inspection operations over very remote and sparsely populated areas of New Mexico.



Note: Due to its remote nature, there are no exclusion or "No Fly Zones" in this area.

Exhibits to this Petition are proprietary information, and in accordance with 14 C.F.R. 11.35(b), are not to be included in the Federal Docket Management System (FDMS).

In summary, CHEROKEE UAS seeks to operate its Nova Block III UAS only over rural sparsely populated areas of New Mexico and west central Texas, to include the BLM Pecos District and the western Permian Basin, which are not in the proximity of Airports or populated areas, while maintaining safe distances from any populated areas, airports, helipads, or roadways.

iv. Operation Of The Nova Block III UAS Will Be Conducted Pursuant To A Safety Management System.

A Safety Management System ("SMS") will control CHEROKEE UAS's operation of the Nova Block III UAS and will significantly contribute to maintaining the level of safety contemplated by the airworthiness certificate requirements from which CHEROKEE UAS now seeks relief. Pursuant to the SMS and 14 C.F.R. § 43.13, entitled *Performance Rules (general)*, each person performing maintenance, alteration, or preventive maintenance on the Nova Block III UAS, motor, propeller, or appliance shall use the methods, techniques, and practices prescribed in the current F6500 Maintenance Manual. The Nova Block III UAS SMS consists of rigidly following the guidelines and instructions found in the Nova Family of Systems Operations Manual, the F6500 Maintenance Manual, the manufacture's Field Guide as well as strict adherence to all FAA rules and regulations applicable to this sUAS and the COAs associated with it and other Instructions for Continued Airworthiness deemed acceptable to the Administrator. Each person shall use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices. A copy of these SMS documents, which are proprietary information, are attached hereto as Exhibit A, and are to be held in a separate file pursuant to 14 C.F.R. § 11.35(b). Exhibits to this Petition are proprietary information, and in accordance with 14 C.F.R. 11.35(b), are not to be included in the Federal Docket Management System (FDMS).

v. Flight Operations Of The Nova Block III UAS Are Limited To The Line Of Sight Of A FAA PPL, Pilot in Command With A Safety Observer.

CHEROKEE UAS will only utilize FAA Licensed Private Pilots with no less than a valid 2nd Class Airman Medical Certificate to act as pilot in command of the Nova Block III UAS. Additionally, all pilots will be assisted by a safety observer possessing a programmable, multi-Channel VHF Radio for Aeronautical Operations, with relevant ATC and emergency channels available, as indicated in current VFR Sectional Aeronautical Charts. The pilot in command and safety observer must meet the requirements as set forth by the SMS and Standard Operating Procedures adopted by CHEROKEE UAS for flight operations of the Nova Block III UAS. Currency status will mirror FAA PPL standards and Duty Time Restrictions for UAS crew are no more than 12hrs/24 hrs. A copy of the Standard Operating Procedures, which is proprietary information, is attached hereto as Exhibit B, and is to be held in a separate file pursuant to 14 C.F.R. § 11.35(b).4

vi. Flights Will Be Conducted Pursuant To Specific Operating Limitations.

In seeking this exemption, CHEROKEE UAS proposes to commercially operate the Nova Block III UAS without satisfying the restricted category airworthiness certification process specified in 14 C.F.R. § 21.185, or otherwise having a certificate of airworthiness issued by the FAA, as

contemplated by 14 C.F.R. Part 21. CHEROKEE UAS proposes to operate the Nova Block III UAS, for the special purpose of conducting UAS derived surveys and inspections over sparsely populated rural areas of New Mexico and west central Texas pursuant to the following specific operating limitations:

Nova Block III UAS Specific Operating Limitations

1. Flight operations are permitted only in the defined, limited areas over rural New Mexico and west central Texas, otherwise known as the western Permian Basin.

2. Flight operations are permitted when no other aircraft present a possible risk of intrusion in the UAS operations area; safety of flight for manned aircraft always takes precedence.

3. The Nova Block III UAS will be operated at or below 400 ft. above ground level (AGL), except as necessary to comply with the requirements of 14 C.F.R. § 91.119 or as specifically permitted in an ATC issued COA.

4. The Nova Block III UAS shall be operated within one mile, and always within line of sight, of the pilot in command and safety observer.

5. The PIC and safety observer will have immediately available to them, a functioning programmable multi-Channel VHF Radio for Aeronautical Operations, with relevant ATC and emergency channels available.

6. The Nova Block III UAS shall be operated pursuant to Day Visual Flight Rules (VFR) in visual meteorological conditions (VMC). The Nova Block III UAS shall be operated only during daylight hours (*i.e.* between the beginning of morning civil twilight and the end of evening civil twilight, as published in the American Air Almanac, converted to local time).

7. The duration of each flight shall not exceed 1.5 hours.

8. The Nova Block III UAS shall operate from on-site takeoff/landing locations directly next to the pilot in command and co-located safety observer.

9. Operations shall be conducted by PPL certificated airmen who have completed specialized type training, checking, currency, and recency of experience requirements as approved by the FAA Administrator.

10. Operation of the Nova Block III UAS with any inoperative instruments or equipment shall be prohibited.

11. The Nova Block III UAS shall be maintained in accordance with the Manufacturer's Maintenance Manual.

12. The Nova Block III UAS shall be operated pursuant to 14 C.F.R. Part 91, operating requirements.

13. For the proposed flight operation, only one Nova Block III UAS shall be airborne at any given time.

14. Prior to flight operations, CHEROKEE UAS PIC shall coordinate and establish two way communications with the nearest Air Traffic Control facility and report completion of flight operations to same.

15. For any flight operations over U.S. Government or state managed lands, CHEROKEE UAS shall coordinate with the appropriate authority and ensure that the property owners have at least twelve (12) hours of advance notice prior to the proposed flight operations. Coordination shall include anticipated periods of operation, purpose of the flights, and contact information for the operator should questions or issues arise.

vii. Any Other Conditions The FAA May Prescribe For Safe Operation.

In accordance with Section 333 of the FAA Modernization and Reform Act of 2012 and 14 C.F.R. § 21.16 entitled *Special Conditions*, CHEROKEE UAS requests that the FAA prescribe special conditions for the intended operation of the Nova Block III UAS, which contain such safety standards that the Administrator finds necessary to establish a level of safety equivalent to that established by Section 21.185, and which will permit safe operation of the Nova Block III UAS for the special purpose of conducting aerial acquisitions over the State of New Mexico and west Texas. Section 333 sets forth the requirements for considering whether a UAS will create a hazard to users of the NAS or the public, or otherwise pose a threat to national security; and further, provides the authority for such UAS to operate without airworthiness certification in accordance with any requirements that must be established for the safe operation of the aircraft systems in the NAS. Likewise, the Administrator may prescribe special conditions pursuant to 14 C.F.R. § 21.16, for operation of the Nova Block III UAS, since the airworthiness regulations of 14 C.F.R. Part 21 do not contain adequate or appropriate safety standards, due to the novel or unusual design features of the aircraft. Section 21.16, entitled *Special Conditions*, states the following:

If the FAA finds that the airworthiness regulations of this subchapter do not contain adequate or appropriate safety standards for an aircraft, aircraft engine, or propeller because of a novel or unusual design feature of the aircraft, aircraft engine or propeller, he prescribes special conditions and amendments thereto for the product. The special conditions are issued in accordance with Part 11 of this chapter and contain such safety standards for the aircraft, aircraft engine or propeller as the FAA finds necessary to establish a level of safety equivalent to that established in the regulations.

See 14 C.F.R. § 21.16

Therefore, in accordance with Section 333 and 14 C.F.R. § 21.16, the FAA may prescribe special conditions for CHEROKEE UAS's intended operation of the Nova Block III UAS, which contain such safety standards that the Administrator finds necessary to establish a level of safety equivalent to that established by Section 21.185, and which will permit safe operation of the Nova Block III UAS for the special purpose of conducting aerial survey and inspection acquisitions over rural and sparsely populated New Mexico and west central Texas, including

the BLM Pecos District and the Permian Basin, which are not in the proximity of Airports or populated areas.

F. A Summary That Can Be Published In The *Federal Register*, stating:
The Rules From Which CHEROKEE UAS Seeks Exemption:
CHEROKEE UAS, LLC seeks exemption from the requirements of 14 C.F.R. §§ 91.9(b), 91.203(a), 91.203(b), 45.23(b) and 21.185.
A Brief Description Of The Nature Of The Exemption CHEROKEE UAS Seeks:
This exemption will permit CHEROKEE UAS, LLC to operate a small Unmanned Aircraft System conducting *UAS derived surveys and inspections over limited, sparsely populated rural areas of New Mexico and west central Texas, to include the BLM Pecos District and the western Permian Basin, while keeping the documents required by the regulations at the ground control station and immediately accessible to the pilot in command. Furthermore, the exemption will relieve CHEROKEE UAS, LLC from the airworthiness certificate standards and the requirement to have a certificate of airworthiness for its Unmanned Aircraft System. This exemption will also permit any required markings concerning the operational status of the UAS to be displayed on the fuselage of the unmanned aircraft.* ***Populated areas and airports within the confines of these areas will be strictly avoided and not over flown.***

G. Any Additional Information, Views, Or Arguments Available To Support The CHEROKEE UAS LLC Request.
This Petition is made pursuant to the FAA Modernization and Reform Act of 2012, Section 333, which directs the Secretary of Transportation to determine if certain UAS may operate safely in the NAS. As such, CHEROKEE UAS LLC's request for exemption may be granted pursuant to the authority of Section 333 and 14 C.F.R. Part 11, as set forth above. Sec. 333 sets forth the requirements for considering whether a UAS will create a hazard to users of the NAS or the public or pose a threat to national security; and further, provides the authority for such UAS to operate without airworthiness certification. Section 333 states the following:
(a) In General.--Notwithstanding any other requirement of this subtitle, and not later than 180 days after the date of enactment of this Act, the Secretary of Transportation shall determine if certain unmanned aircraft systems may operate safely in the national airspace system before completion of the plan and rulemaking required by section 332 of this Act or the guidance required by section 334 of this Act.
(b) Assessment of Unmanned Aircraft Systems.--In making the determination under subsection (a), the Secretary shall determine, at a minimum--
(1) which types of 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).
(c) Requirements for Safe Operation.--If the Secretary determines under this section that certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft systems in the national airspace system. As discussed in detail above, the Nova Block III UAS has in the past, and will continue in the future, to operate safely in the NAS without creating a hazard to users of the NAS, or the public, or otherwise pose a threat to national security.

CONCLUSION

As set forth above, CHEROKEE UAS seeks an exemption pursuant to 14 C.F.R. § 11.61 and Section 333 of the FAA Modernization and Reform Act of 2012, which will permit safe operation of the Nova Block III UAS commercially, without an airworthiness certificate, for the special purpose of conducting aerial survey and inspection acquisitions over certain, limited, sparsely populated rural areas of New Mexico and west central Texas, to include the BLM Pecos District and the western Permian Basin. By granting this Petition, the FAA Administrator will be fulfilling the Congressional mandate of the FAA Modernization and Reform Act of 2012, while also advancing the interests of the public, by allowing CHEROKEE UAS LLC to safely, efficiently, and economically operate the Nova Block III UAS commercially within the NAS.

Exhibits to this Petition are proprietary information, and in accordance with 14 C.F.R. 11.35(b), are not to be included in the Federal Docket Management System (FDMS).

WHEREFORE, in accordance with the Federal Aviation Regulations and the FAA Modernization and Reform Act of 2012, Section 333, CHEROKEE UAS respectfully requests that the Administrator grant this Petition for an exemption from the requirements of 14 C.F.R. §§ 91.9(b), 91.203(a), 91.203(b), 45.23(b), as well as the restricted category airworthiness certification standards specified in 14 C.F.R. § 21.185, including the requirement to have a certificate of airworthiness issued for the Nova Block III UAS, as contemplated by 14 C.F.R. Part 21.

Dated: November 15, 2014

Respectfully submitted,

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EXHIBIT A

Nova Family of Systems Operations Manual.pdf

F6500 Maintenance Manual.pdf

Field Guide.pdf

Exhibit B

Cherokee UAS SOP 333 EXEMPTION.pdf