NM STATE UNIVERSITY

Physical Science Laboratory

New Mexico State University
P.O. Box 30002
Las Cruces, NM 88003-8002

Date: May 10, 2012

To: FAA UAS Integration Office and ATO

From: New Mexico State University/Physical Science Laboratory

Subject: Spectrum Approval

1. We currently have a DOD Area Frequency Coordinator approval (attachment) that goes through the current COA 2012-CSA-47-COA.

2. In keeping with discussions with the FAA Integration Office, we are in the process of obtaining a FCC STA for the two year period of the new Aerostar COA, for which is this application. The FCC STA was submitted on May 5, 2012 (Email confirmation before Exhibit A.)
   File #: 0218-EX-PL-2012
   Confirmation #: EL440043

3. Working with the FCC and the DOD frequency organization, I have attached the FCC exhibit inputs for your perusal and the email from the DOD Area Frequency coordinator concurring on the correct language to submit to the FCC for approval.

4. At NMSU/PSL, all UAS flights and frequencies are coordinated with the DOD Area Frequency Coordinator located at White Sands Missile Range prior to flight to ensure de-confliction of frequencies.

5. If you have any questions or desire additional information please call or email.

6. We will submit the FCC approval as soon as received.

Dennis Zaklan

Deputy Director, UAS FTC
New Mexico State University
575-646-9417 W
575-635-1030 C

-----Original Message-----
From: paygovadmin@mail.doc.twai.gov [mailto:paygovadmin@mail.doc.twai.gov]
Sent: Saturday, May 05, 2012 7:56 AM
To: Zaklan, Dennis (Zak)
Subject: Pay.gov Payment Confirmation: Remittance Advice

Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact FCC claudette.pride@fcc.gov at 202-418-1996.

Application Name: Remittance Advice
Pay.gov Tracking ID: 256J72IN
Agency Tracking ID: PGC2126257
Transaction Type: Sale
Transaction Date: May 5, 2012 9:55:43 AM

Account Holder Name: New Mexico State University/Physical Science Laboratory
Transaction Amount: $60.00 Billing Address: PO Box 30002
City: Las Cruces
State/Province: NM
Zip/Postal Code: 880038002
Country: USA
(b) (6)
[redacted]

Exhibit A – Introduction and Justification

New Mexico State University/Physical Science Laboratory (NMSU/PSL) is currently the only Unmanned Aircraft Systems (UAS) Flight Test Center authorized by the Federal Aviation Administration (FAA). The NMSU UASFTC is authorized to conduct UAS flights for testing, training, and demonstrations within the 15,000 sq mi of FAA authorized airspace of SW New Mexico (see Exhibit C – PSL NMSU UAS Airspace Boundary). NMSU performs research and development flights for U.S. government elements under contract and through Memorandum of Understandings including the Department of Defense.

1. The Aerostar and Orbiter UAS were developed under AF contract UAS Validation and Integration Program -- FA9201-08-D-0093, as part of a proof of concept for developing a process for establishing a UASCOA in the National Airspace System (NAS). However, these UAS's will not become part of the Air Force inventory. Therefore, use of the Federal frequencies for the uplinks and downlinks is requested to perform this critical research and development testing.

2. The Aerostar and Orbiter UAS are used support the testing of a variety of Federal and DoD payloads and perform other operational tests and validation of UAS procedures for safety of flight for manned aircraft in the National Airspace system. Therefore use of Federal frequencies for the UAS command and control uplinks and downlinks is requested.

3. Use of these Federal frequencies will be coordinated with the DoD-AFC (WSMR) office, which will schedule use of these frequencies. This statement has been coordinated with Mr. Wyman the DOD-AFC Coordinator at WSMR (575-678-3402).

The equipment used for both ground and aboard the UAS is similar or in most cases identical. Each UAS is configured with control and data links. The UAS typically are set up as one of the following:

a. C-band uplink and downlink / UHF backup

b. UHF uplink / S-band video and data downlink

c. L-band uplink / S-band video and data downlink

A primary and a secondary control link is always used. Uplinks, which contain the control commands, are always less bandwidth than downlinks, which often contain UAS telemetry and payload data.

EXHIBIT B: Type of Organization

The Physical Science Laboratory (PSL) at New Mexico State University (NMSU) is a research and development, and test and evaluation organization that provides support to the government and private industry. PSL is a nonprofit New Mexico State government organization composed of engineers, technicians, and administrative staff.

Exhibit C: NMSU UAS Airspace Boundary

From surface to 25000 feet AGL, consisting of an irregular shaped airspace within the SW portion of New Mexico. Bounded by the following coordinates

31-20-00N / 109-00-00W (A10)
32-40-00N / 109-00-00W (B6)
34-09-00N / 107-11-00W (C5)
34-17-00N / 107-11-00W (C1)
34-17-00N / 106-40-32W (C2)
33-27-00N / 106-49-00W (C3)
33-13-00N / 106-52-02W (B3)
32-30-00N / 106-42-00W (B4)
32-19-30N / 106-39-32W (A3)
32-18-00N / 106-34-02W (A4)
32-11-00N / 106-34-00W (A5)
32-04-00N / 106-48-00W (A6)
31-47-24N / 107-00-00W (A7)
31-47-24N / 108-15-00W (A8)
31-20-00N / 108-15-00W (A9)

From surface to 1500 feet AGL, 2 nautical mile radius, circular airspace areas north of Hwy 70 on the Jornada Experimental Range, at the following coordinates:

32-30-00N / 106-41-12W
32-26-35N / 106-40-47W
32-23-49N / 106-41-29W

From surface to 17999 feet AGL, consisting of an irregular shaped airspace corridor on WSMR. Bounded by the following coordinates:

32-36-00N / 106-06-02W (E1)
32-36-00N / 106-00-02W (E2)
32-27-40N / 106-00-02W (E3)
32-28-00N / 106-02-02W (E4)
32-15-00N / 106-10-02W (E5)
32-15-00N / 106-12-00W (E6)
32-24-48N / 106-09-02W (E7)