

Anne Cortez

From: Rossow, Mark K CIV USARMY HQDA CIO G-6 (US) <mark.k.rossow.civ@mail.mil>
Sent: Wednesday, August 24, 2016 12:30 PM
To: Anne Cortez
Cc: Fagan, Thomas J CTR (US); Whittington, William R CIV USAF AFSMO (US); Ortega, James E (Jim) CIV USARMY HQDA CIO G-6 (US); Sanchez, Edwin (Ed) CIV USARMY HQDA CIO G-6 (US)
Subject: RE: [Non-DoD Source] Request to coordinate use of spectrum in Arizona: Raytheon Experimental Application 1245-EX-ST-2016 (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Anne;

To document coordination for this STA please use Coordination # 16082401. If you have the opportunity to add the coordination number to the STA request when you modify the 362 MHz freq to 362.25 it should prevent the proposal from being tabled...at least from the Army side.

Thanks Anne.

Mark

Mark Rossow
Chief, DoD AFC AZ
Tel: (520) 538-6423
DSN: 879-6423
E-mail: mark.k.rossow.civ@mail.mil

-----Original Message-----

From: Anne Cortez [mailto:alc@conspesinternational.com]
Sent: Wednesday, August 24, 2016 11:33 AM
To: Rossow, Mark K CIV USARMY HQDA CIO G-6 (US) <mark.k.rossow.civ@mail.mil>
Cc: Fagan, Thomas J CTR (US) <tjfagan@raytheon.com>; Whittington, William R CIV USAF AFSMO (US) <william.r.whittington4.civ@mail.mil>; Ortega, James E (Jim) CIV USARMY HQDA CIO G-6 (US) <james.e.ortega.civ@mail.mil>; Sanchez, Edwin (Ed) CIV USARMY HQDA CIO G-6 (US) <edwin.sanchez1.civ@mail.mil>
Subject: RE: [Non-DoD Source] Request to coordinate use of spectrum in Arizona: Raytheon Experimental Application 1245-EX-ST-2016 (UNCLASSIFIED)

Hi Mark,

Thank you so much for your message. This is good news indeed.

I will modify the application to shift to 362.25.

May I use your message as confirmation that we have pre-coordinated this application properly, or is there a different process that we should complete as well?

I really appreciate your assistance.

Best regards,

Anne

-----Original Message-----

From: Rossow, Mark K CIV USARMY HQDA CIO G-6 (US) [mailto:mark.k.rossow.civ@mail.mil]

Sent: Wednesday, August 24, 2016 7:38 AM

To: Anne Cortez <alc@conspicinternational.com>

Cc: Fagan, Thomas J CTR (US) <tjfagan@raytheon.com>; Whittington, William R CIV USAF AFSSMO (US)

<william.r.whittington4.civ@mail.mil>; Ortega, James E

(Jim) CIV USARMY HQDA CIO G-6 (US) <james.e.ortega.civ@mail.mil>; Sanchez, Edwin (Ed) CIV USARMY HQDA CIO G-6

(US) <edwin.sanchez1.civ@mail.mil>

Subject: RE: [Non-DoD Source] Request to coordinate use of spectrum in

Arizona: Raytheon Experimental Application 1245-EX-ST-2016 (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Anne;

I have checked the two frequencies in your STA (M351 and M362) and there are no issues with Raytheon's temporary use of them for UAS testing at Florence.

I would recommend changing the M362 frequency to M362.25 as that will center your use on a channel allocated for 1.2 MHz bandwidth, and this change may be beneficial if the Microhard's full bandwidth of 1.2 MHz is used (which isn't problematic if centered at M362.25).

I will have no objection to the STA noting that Government requirements for use of the frequencies will supersede Raytheon's use of these frequencies at Florence, but I do not expect that to be the case in the near to mid future.

Thanks Anne.

Mark

Mark Rossow

Chief, DoD AFC AZ

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-----Original Message-----

From: Anne Cortez [mailto:alc@conspicinternational.com]

Sent: Tuesday, August 23, 2016 2:58 PM

To: Whittington, William R CIV USAF AFSSMO (US) <william.r.whittington4.civ@mail.mil>; Rossow, Mark K CIV USARMY HQDA CIO

G-6 (US) <mark.k.rossow.civ@mail.mil>

Cc: Fagan, Thomas J CTR (US) <tjfagan@raytheon.com>

Subject: [Non-DoD Source] Request to coordinate use of spectrum in Arizona:

Raytheon Experimental Application 1245-EX-ST-2016

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

To: Randy Whittington

Mark Rossow

From: Anne Cortez, Esq, on behalf of Raytheon Missile Systems

Re: Request for Coordination of spectrum Raytheon experimentation with the Coyote UAV FCC file #1245-EX-ST-2016

Date: August 23, 2016

As you both know, Raytheon Missile Systems has been developing a number of UAV platforms for the US military and other federal agencies. One of those UAV platforms is the Coyote. It is in use by a number of agencies, including the Navy, Marines, and NOAA, among others. To advance the development of this product, Raytheon conducts IRAD testing of the Coyote, working to integrate a variety of communications technologies, different cameras, different radar systems, and similar developmental work. Because Raytheon Missile Systems is located in southern Arizona, that is where its IRAD work takes place. And, as we all know, UAV testing is difficult to conduct indoors and measure the effectiveness of the UAV performance over distances. This is all familiar to you.

Application Details:

Yesterday, Raytheon completed filing an application with the FCC for testing of the Coyote in Arizona. The spectrum requested: 351 MHz and, as a back-up channel, 362 MHz. The emission designators requested are: 280KF1D and 480KF1D. The location of operations is just outside of Florence, Arizona, adjacent to the Florence range. The power level requested is 1 W output power, with the UAV using 2 W ERP, and the directional ground station using 12.162 W ERP.

The proposed testing is of great interest to a number of Raytheon's federal government customers. In particular, the Navy has requested some of this work under contract number N00014-15-C-0047. Raytheon has submitted this contract number to the FCC in conjunction with its STA application.

Technical information related to proposed testing:

Raytheon needs to test its Coyote UAV. The Coyote is a light, quickly deployable UAV platform that Raytheon continues to develop to meet the needs of its federal customers. In this testing, Raytheon is integrating a Microhard radio into the Coyote. The radio has a mass of only 19 grams, and offers a data throughput that can reach up to 1.2 MBPS. This weight to performance ratio makes it particularly important to test the performance of the radio on the platform.

The technical details in the application are attached to this message.

Location and radius of operations:

The testing is expected to take place in one area near the Florence Range in Arizona. Figure 1 shows an image of the proposed test area.

Figure 1. Image of Test Area

The proposed radius of operations is 9.6 km.

Time of Use

The time of use is limited. During a normal test day, testing will take place for up to two (2) hours. Because of the limited battery power in the UAV, flight testing is expected to be limited to one hour per day, but there could be testing on the ground prior to flight testing. Wind and other weather conditions can limit the ability to test.

The program is willing to work with the DOD-AFC for Arizona - Mr. Rossow - to work out a schedule for testing that avoids spectrum conflicts. Mr. Rossow is copied on this message.

Spectrum Selection

After reviewing various frequencies that might be used for the testing, Raytheon selected 351 and 362 MHz. If there are other frequencies within the 310-390 MHz band that would be better for Raytheon to seek to use for this testing, we will amend the application to those frequencies. We would appreciate your guidance on that question.

We are aware that these frequencies are in the MAG band. Further, we know that the FAA also uses some of this spectrum. We also know that these frequencies are in great demand.

The frequencies were selected because it was possible to request the required emission designators within the allocation of the frequencies.

Since this is an experimental license application, we can shift to other frequencies as need be.

We would be glad to work with you in any way that is convenient to make this process easier. As you also know, we do not know the information that you know about what is also authorized in these areas.

You have my most sincere thanks in advance for your help.

Most respectfully yours,

Anne

Anne Cortez, Esq.

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