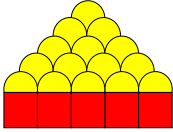


ATMOSPHERIC & SPACE TECHNOLOGY



RESEARCH ASSOCIATES

11118 QUAIL PASS • • SAN ANTONIO, TEXAS, USA 78249 • • (210) 691-0432

Sept 5, 2007

Re: Request for Expedited Processing

Dear Mr. Burtle,

I am requesting expedited processing of this Special Temporary Authority application.

I submitted a transmitter license application today, September 5, 2007.

The STA file number is:

0454-EX-ST-2007 (3.167 MHz and 3.397 MHz)

Our company has been hired to deploy 3 transmitters as part of an HF Doppler radar system to support a NASA rocket launch from Wallops Island in the Chesapeake Bay area. The rocket launch window opens on September 11th, and will remain open for up to 3 weeks until the rocket is launched.

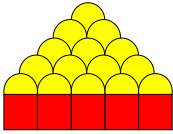
We deployed the radar system on August 13, 2007 using frequencies previously assigned under STA licenses 0195-EX-ST-2007 (4.5 MHz) and 0192-EX-ST-2007 (2.627 MHz). **After studying the propagation for several weeks, it is now apparent that these frequencies are not optimal for the current experiment. We are therefore requesting licenses for two additional frequencies. We would like to start using these frequencies next week (Monday September 9) if possible, a day or so prior to the opening of the launch window, so that we can check the propagation, and make sure our system is properly tuned.**

The three transmitters form a key part of the TIDDBIT HF radar developed by our company, and which is described in detail in the letters attached to our application. The transmitters will each operate on the same two frequencies.

The NASA rocket will make measurements in the ionosphere at about 200-300 km altitudes. The rocket data will be used together with the data from our radar to understand the formation processes for irregularities and bubbles in the ionosphere. These irregularities and bubbles cause degradation of radio signals on all frequencies, and can have serious effects on systems such as radars, communications and GPS devices. The expectation is that if we can understand the conditions under which these irregularities form then we will be able to predict their occurrence.

The existence of ionospheric irregularities is of great concern to Homeland Security, weapons development, and for the safety of life. I could provide many examples, but here are a few. The Department of Homeland Security needs to communicate and geolocate. It uses radio systems for both of these functions. If ionospheric irregularities

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occur, they can degrade GPS systems (including the WAAS system being developed by the FAA for airplane landing and spacing), resulting in potential loss of life. They can also degrade HF communications. The irregularities also degrade direction-finding systems that are used in safety and rescue by the Coast Guard and other branches of government. Finally, the understanding of these irregularities is important in the development of a number of weapons systems for DoD. For example, the GPS degradation is crucial for missile accuracy, or geolocation during Special Forces operations. The interest in this experiment is so high that the Air Force is deploying GPS receivers and another ionospheric sounder in support of the rocket launch and our TIDDBIT radar, in order to see the intensity of the GPS disturbance at the time of launch.

The purpose of our transmitters (i.e. the TIDDBIT radar) is to identify waves in the ionosphere that are thought to trigger the occurrence of the ionospheric irregularities. This triggering is rather like when a wave breaks on the ocean and you see turbulence and bubbles. Without our transmitters to define the wave population in the ionosphere, the NASA rocket launch will be useless, and the effort expended by the Air Force will have been wasted. This is not an experiment that can easily be repeated, as it involves collaboration between many different people and organizations, and has cost NASA millions of dollars. The rocket in question is called 36.218/Earle.

In view of the importance to Homeland Security, weapons development, and safety of life, I am requesting that you expedite this application. If you need to talk to the NASA folks, their contact information is:

John Brinton (Wallops Island Rocket Facility) Tel: 757-824-1099

Bruce Scott (Scott_Bruce@nsroc.net) Tel: 757-824-1086

I very much appreciate your help with this request.

Sincerely,

A handwritten signature in black ink that reads "Geoffrey Crowley". The signature is written in a cursive style.

Geoff Crowley, PhD

President/Chief Scientist

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