From: Robert Gordy

To: Doug Young
Date: July 08, 2009

Subject: Request for Info - File #0210-EX-PL-2009

Message:

Response to Requests for information? File #0210?EX?PL?2009
Reference Number: 8706
1.0
Question: Submit a narrative statement describing the project, the name of the contracting agency, the contract number and a government point of contact with phone number.
Answer: Contracting Agency, United States Special Operations Command located at Mac Dill Air Force Base, Tampa Florida. Contract Number: H92222?05?C?0016. The point of contact at USSOCOM is Mr. Dave Saren 813?826?9363, however this contract is completed and in no longer active. The radar was abandoned in place to Global Technical Systems for GTS to complete the testing. A sponsor was obtained for the flight tests, his name is Mr. Brian Hibbeln Assistant Deputy Secretary of Defense Special Capabilities 703?746?1200, his support person is Mr. Craig Brown cell phone: 571?330?8912. Also the contract has had support from Mr. William Barnwell, Branch Head of Radar Branch at Naval Research Labs 202?767?3475. Bill Barnwell has been involved with the program since the beginning and in fact NRL developed and fabricated the antenna, and participated in all of the design reviews and design concepts. I would suggest calling Bill Barnwell.
Narrative: Global Technical Systems Airborne and Space Division located in St. Petersburg, FL was contracted by USSOCOM to develop a ?Special Purpose Foliage Penetrating Radar?. The special purpose part of it is that it is supposed to obtain Synthetic Aperture Images of objects with a design goal of 35 feet within the ground in dry soil. The radar was designed to operate at L?Band in order to obtain a 1 meter resolution image. Since there are other users operating within the radar bandwidth the radar was designed to blank out sub bands digitally at the command of the radar operator. The project was designed to be an airborne radar system with an antenna mounted within a radar dome on the bottom of the GTS owned King Air B200 aircraft. The antenna can point at 40 degrees from horizontal in either port or starboard and can point nadir. The antenna pedestal holds the antenna in a roll stabilized position and is commanded by the radar operator. The system is an all solid state radar with sharp filter skirts after the transmitter, just prior to illumination. The pulse rate is 416 pulses per second and the pulse duration is 8 micro seconds. The duty cycle is .33 %. The transmitter output power from the antenna (ERP) is 3.5 kilo Watts. This power output can be reduced if necessary. Data is generally taken for testing in small periods of time, for instance the first tests will require illuminations of 20 seconds per pass and about 8 passes. Each pass requires the aircraft to fly 18 miles, but the radar only collects data over ~2 miles. Other tests would be conducted at Yuma test range and the Naval test range in Central America. Data is recorded as I and Q data in digital form and stored in a RAID memory for processing on the ground. Only samples of the raw data are processed into imagery in the air to enable the operator to know that the system is working. The system took 4 years to develop.
2.0
Question: Submit a justification for requesting a license period longer than two years.
Answer: GTS does not need a license longer than 2 years. The license is needed to be able to determine the performance of the system in actual operation. Then it is needed to demonstrate the system to potential customers. Should the potential customers purchase such radars, a permanent license with restrictions would be applied for on their behalf and at that time there would be a history of operation with the FAA and FCC to justify the continued operation of the radar.
3.0
Question: Submit a justification for requesting operation throughout the contiguous United States.
Answer: Global Technical Systems plans to test the radar system locally in the mouth of Tampa Bay pointing the radar at Mullet Key in the direction of the Gulf of Mexico. When the radar is proven out and the imagery is adequate the radar would be tested at Yuma Proving Ground. The third place is in Central America looking through triple canapé. Then the Department of Home Land Security has expressed that

it wants to test the radar on the southern border to test the ability of the radar to detect known tunnels. There may be other locations where the radar may be needed to be tested for purposes of government agencies. However, it is not anticipated that the radar would be operated at all locations within the United States (CONUS). We would also like to test the radar at sea to determine the ability and depth of detection of sub surface vehicles. Therefore, there is no solid need nor is there justification for total CONUS operation at this time. However, having that option would make it expeditious to respond to a government agencies request in a timely manner. In all cases GTS will conduct an emission analysis to determine that the radar will not interfere with FAA or other organizational assets in the area of test. GTS is a high technology company that has staff members with the capability to conduct such analysis.