

HARRIS CORPORATION
EXPERIMENTAL SPECIAL TEMPORARY
AUTHORITY APPLICATION
1.7 GHz SPAWAR EXPERIMENT
GRAYS HARBOR, WASHINGTON STATE AREA
JUNE 2004

DESCRIPTION OF EXPERIMENT

Response to Question 4.

Harris Corporation ("Harris") is requesting experimental Special Temporary Authority (STA) to permit operation of the equipment specified in section 8 of this application. At the conclusion of the experimental tests proposed herein, the equipment is intended to be used by the United States military.

Harris submits that this is an important project for the Navy, and that a grant of this experimental request is necessary in the public interest because the proposed operations will forward national security interests by assisting in the advancement of the tactical capabilities of the U.S. Armed Forces.

Response to Question 5.

The experimental STA being requested by Harris is necessary for testing purposes in connection with contracts with the United States Armed Forces. Specifically, Harris has been contracted by the Space and Naval Warfare Systems Command (SPAWAR) near Puget Sound, Washington, to conduct experiments of Harris equipment using a federal government frequency band (1760-1810 MHz) as part of SPAWAR's Advanced Deployable Systems (ADS) program.

The experiments are designed to determine the extended capabilities of 802.11 wireless LAN devices. Harris will evaluate and demonstrate a high data rate wireless communication network-centric RF radio link. A theoretical link budget will be generated to predict the practicability and feasibility of the communication system and its ranges. Various scenarios will be employed. Transmissions will be conducted between a ship facility and a fixed base antenna located on a buoy at sea. The ship will be mobile and located in the ocean approximately 15 kilometers from shore. The ship will carry a directional antenna with a maximum ERP of 555 watts, and the ship antenna will be aimed at the buoy. The omnidirectional fixed antenna on the buoy will be aimed toward the ship in the ocean with a maximum beamwidth of 40 degrees.

The technology being tested does not consist of commercial off-the-shelf (COTS) devices; rather, the devices being used are highly experimental. The demonstration will include transmission of customer information. The extended

range and high data rate required by SPAWAR is only available in the Harris technology, which utilizes the 802.11-g technology/waveform operating in the 1.7 GHz band. To date, there are no COTS frequency converters that will handle this scenario. Frequency conversion and extended range are two of the areas included within the Harris study, and the study is in the very earliest stages of pre-development.

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